



PIONEER

Pioneer Energy Services

RADIAL BOND LOG WITH GAMMA RAY

Company **EAST CHEYENNE GAS STORAGE, LLC.**

Well **ECGS 6-18 WP-D011-2**

Field **WEST PEETZ**

County **LOGAN** State **CO**

Location: API #: 05075094060000 Other Services

2320' FSL & 1566' FEL
NESE

SEC 6 TWP 11N RGE 52W

NONE

Permanent Datum GL
Log Measured From KB 14' Elevation 4550'
Drilling Measured From KB Above Perm. Datum

Elevation
K.B. 4564'
D.F. 4563'
G.L. 4550'

Comp. EAST CHEYENNE GAS STORAGE, LLC.
Well ECGS 6-18 WP-D011-2
Field WEST PEETZ
Co. LOGAN
State CO

Date of Service 8-AUG-2016

Run Number ONE

Depth Driller or PBTD 5260'

Depth Logger 5104'

Bottom Log Interval 5092'

Top Log Interval SURFACE

Open Hole Size 8.75"

Type Fluid WATER

Fluid Level 150'

Fluid Density 8.34 PPG

Max. Recorded Temperature 148 F

Max. Wellhead Pressure O PSI

Wellhead Connection OPEN ENDED

Estimated Cement Top N/A

Unit Number P1

Wireline Size 9/32"

Location FT. MORGAN, CO.

Recorded By RANDY AZEVEDO

Witnessed By GARY OHLMAN

Size Wt/Ft Top Bottom

Tubing Record 9.625" 36# SURFACE 1222'

Surface Casing 7" 26# SURFACE 5247'

Production Casing

Liner Record

<<< Fold Here >>>

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 RAN AS PER CUSTOMER REQUEST
NO DEBRIS FOUND UPON RETRIVAL OF TOOL
DEPTH REFERENCE TO PIONEER SCBL LOG DATED JULY 14, 2016
LOG RAN FROM AS DEEP AS POSSIBLE TO SURFACE
LOG RAN WITH 0 PSI SURFACE INDUCED PRESSURE

SO # 2-310179

THANK YOU FOR USING PIONEER ENERGY SERVICES!

Your Pioneer Energy Services Crew

Tool Data - Services

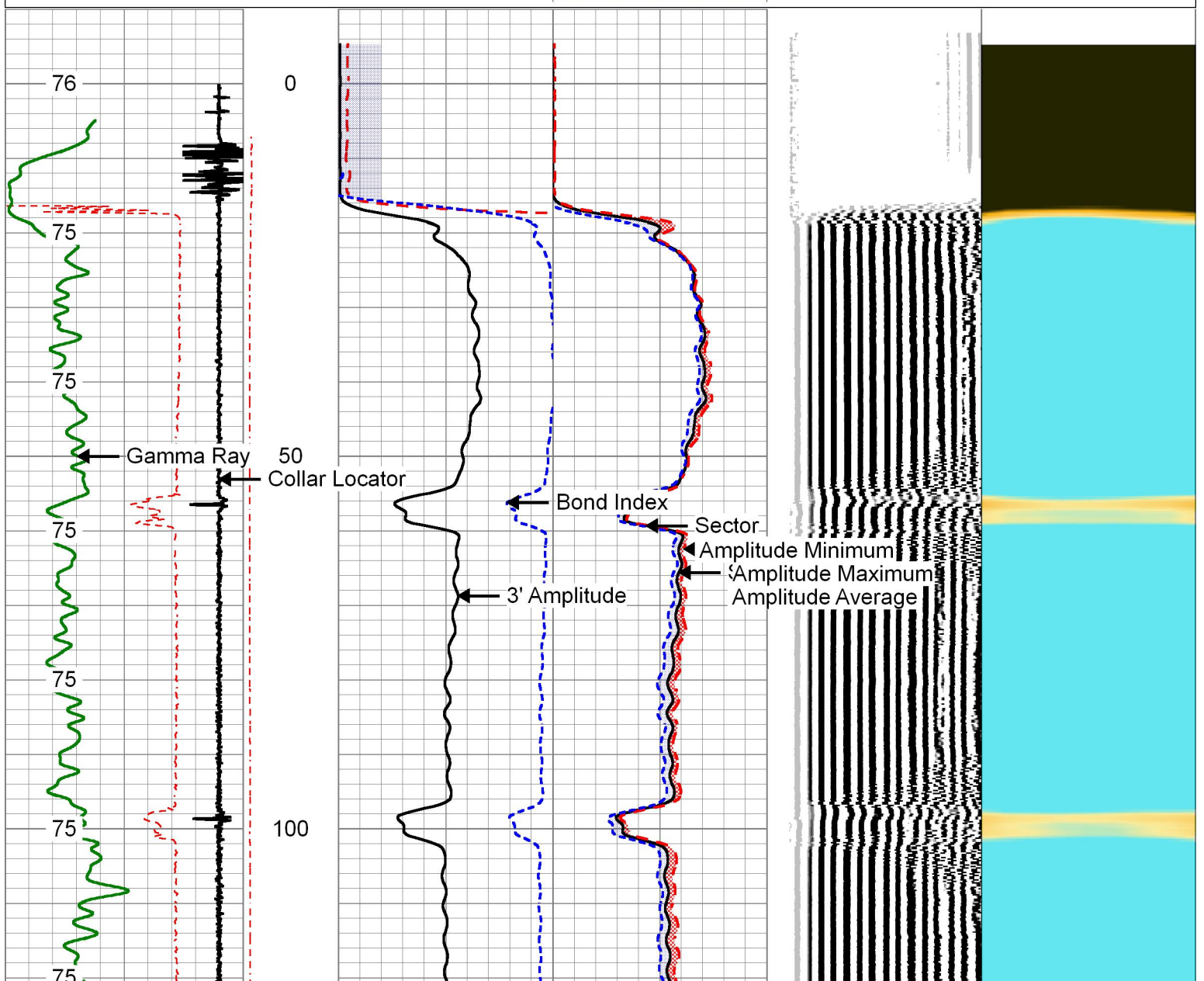
Serial Number

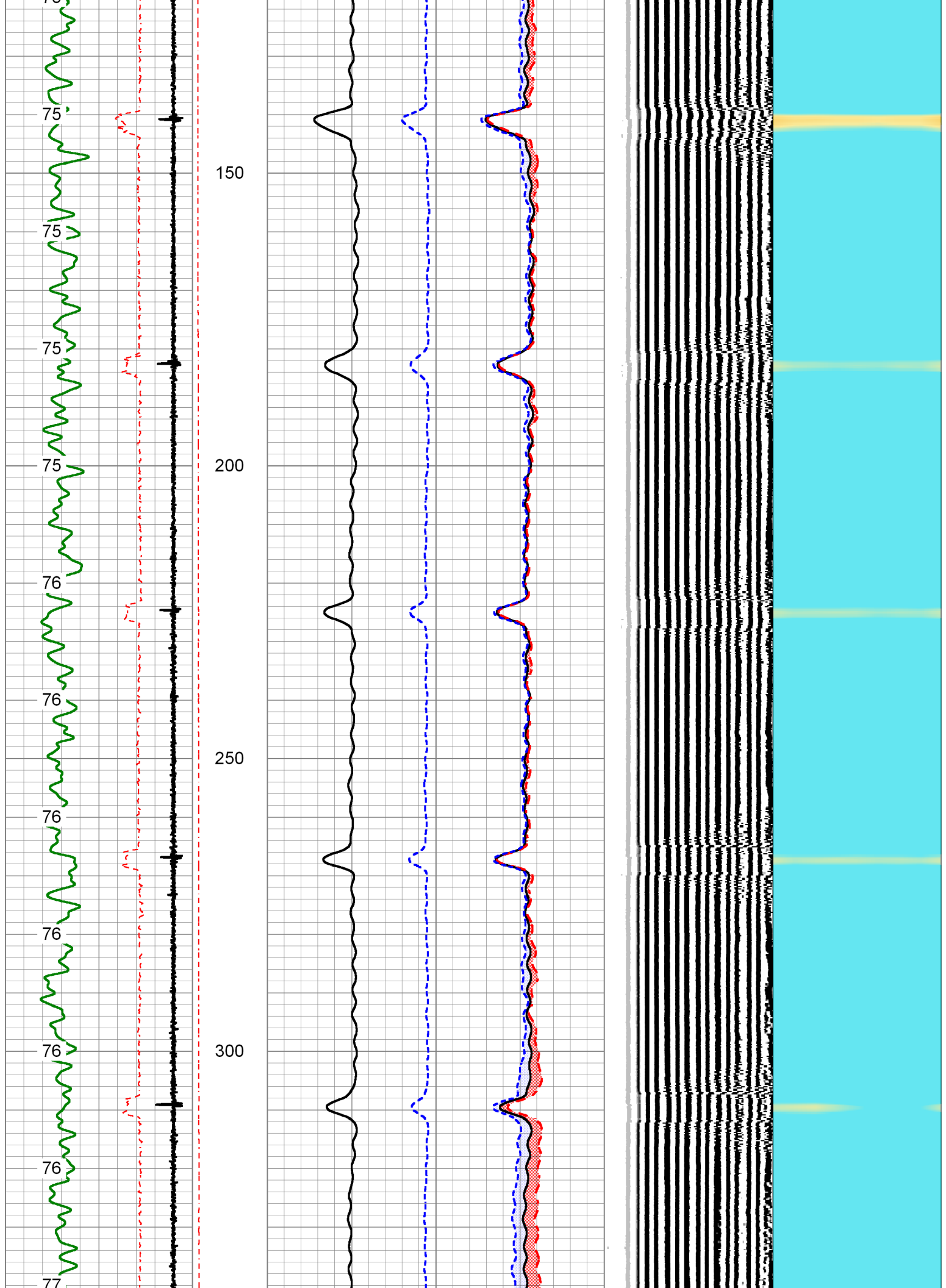
Engineer: RANDY AZEVEDO
Operator: JOSH KING
Operator:
Operator:

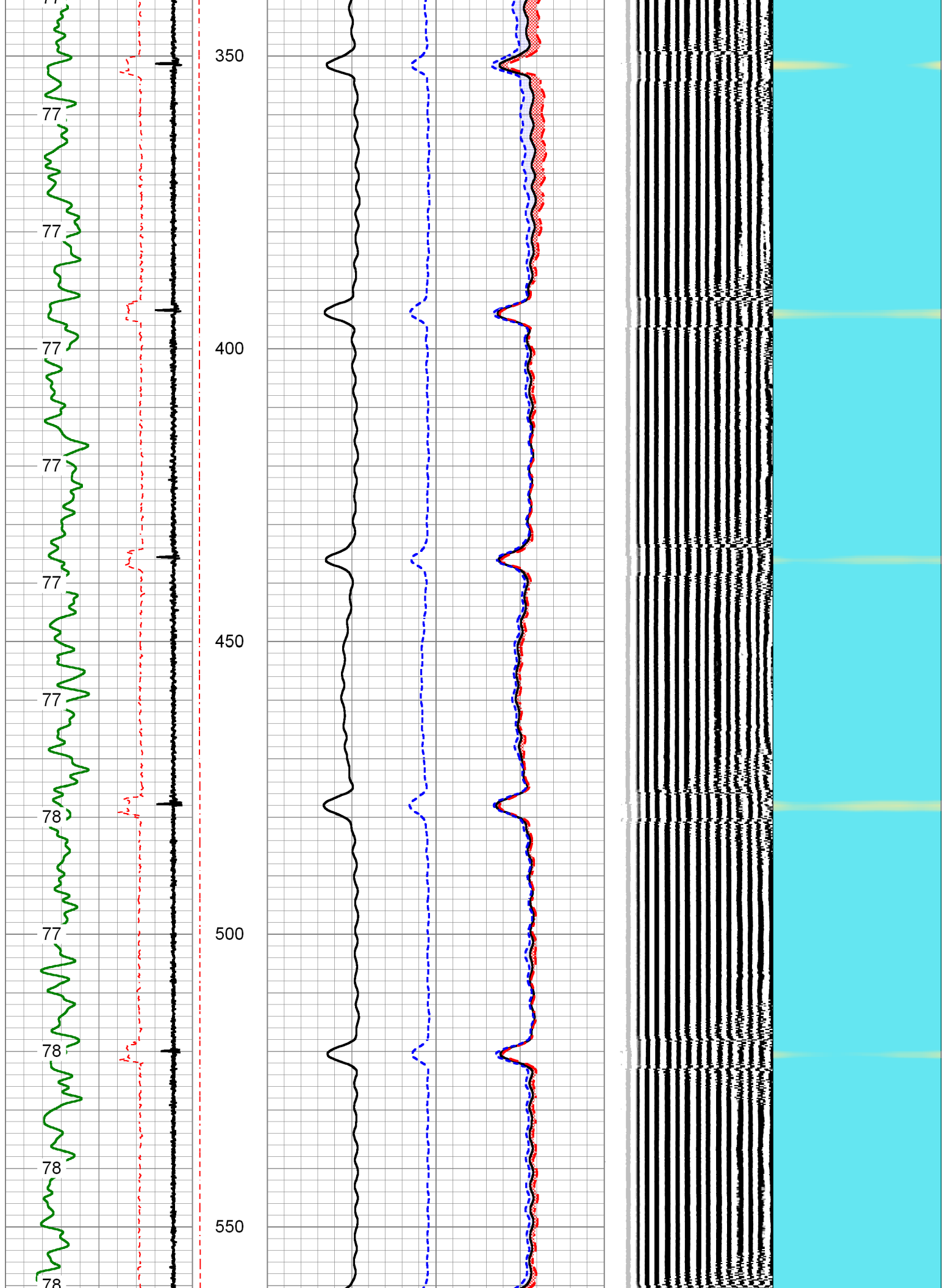
Sensor	Onset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
TEMP	17.05		Cable Head-Titan 143 1 7/16" Titan Cable Head	1.03	1.43	2.00
			Centralizer-275 Probe 2 3/4" Probe Adjustable Spring Centralizer	2.88	2.75	15.00
WVFS8	14.81		SCBL-275 Probe w Temp New Mod (141119.17 Probe Radii Bond Tool with Temperature	119.17	2.75	95.00
WVFS7	14.81					
WVFS6	14.81					
WVFS5	14.81					
WVFS4	14.81					
WVFS3	14.81					
WVFS2	14.81					
WVFS1	14.81					
WVFCAL	14.81					
WVF3FT	14.81					
WVF5FT	13.81					
HEADVOLT	10.56					
CCL	6.78		Centralizer-275 Probe 2 3/4" Probe Adjustable Spring Centralizer	2.88	2.75	15.00
GR	4.04		GR_CCL-275 Probe GR-CCL Dig (1112114.54 Probe 2 3/4" Gamma Ray / CCL Digital	214.54	2.75	60.00
			Centralizer-275 Probe 2 3/4" Probe Adjustable Spring Centralizer	2.88	2.75	15.00
			Bullnose-Titan GO Pin Pressure Cap	0.27	1.38	1.00
Dataset: wp-d 0 11-2 rbl.db: field/well/run1/pass5 Total length: 23.64 ft Total weight: 203.00 lb O.D.: 2.75 in						

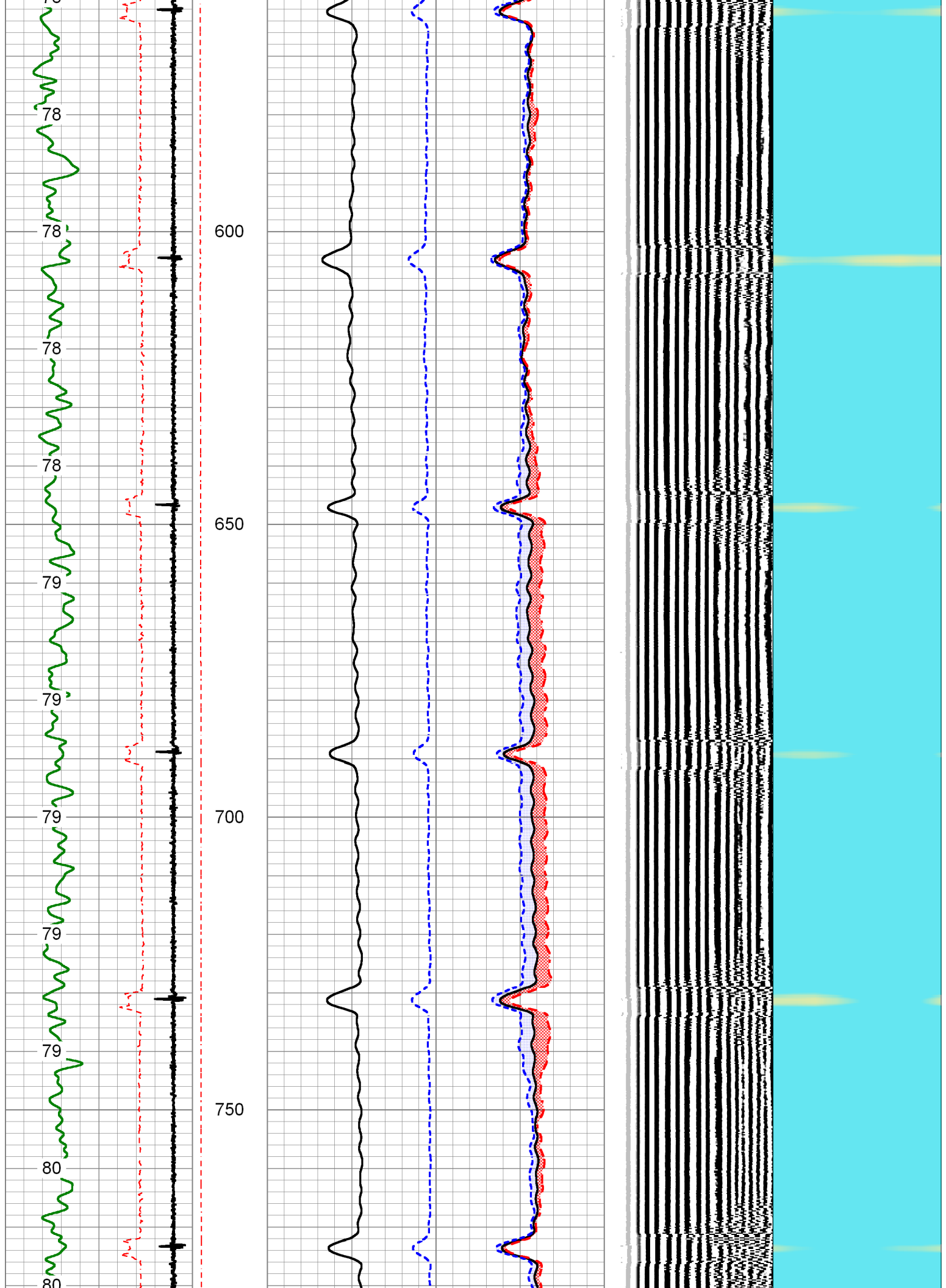
Database File wp-d 0 11-2 rbl.db
 Dataset Pathname pass5
 Presentation Format pinr_scbl
 Dataset Creation Thu Aug 04 15:29:47 2016
 Charted by Depth in Feet scaled 1:240

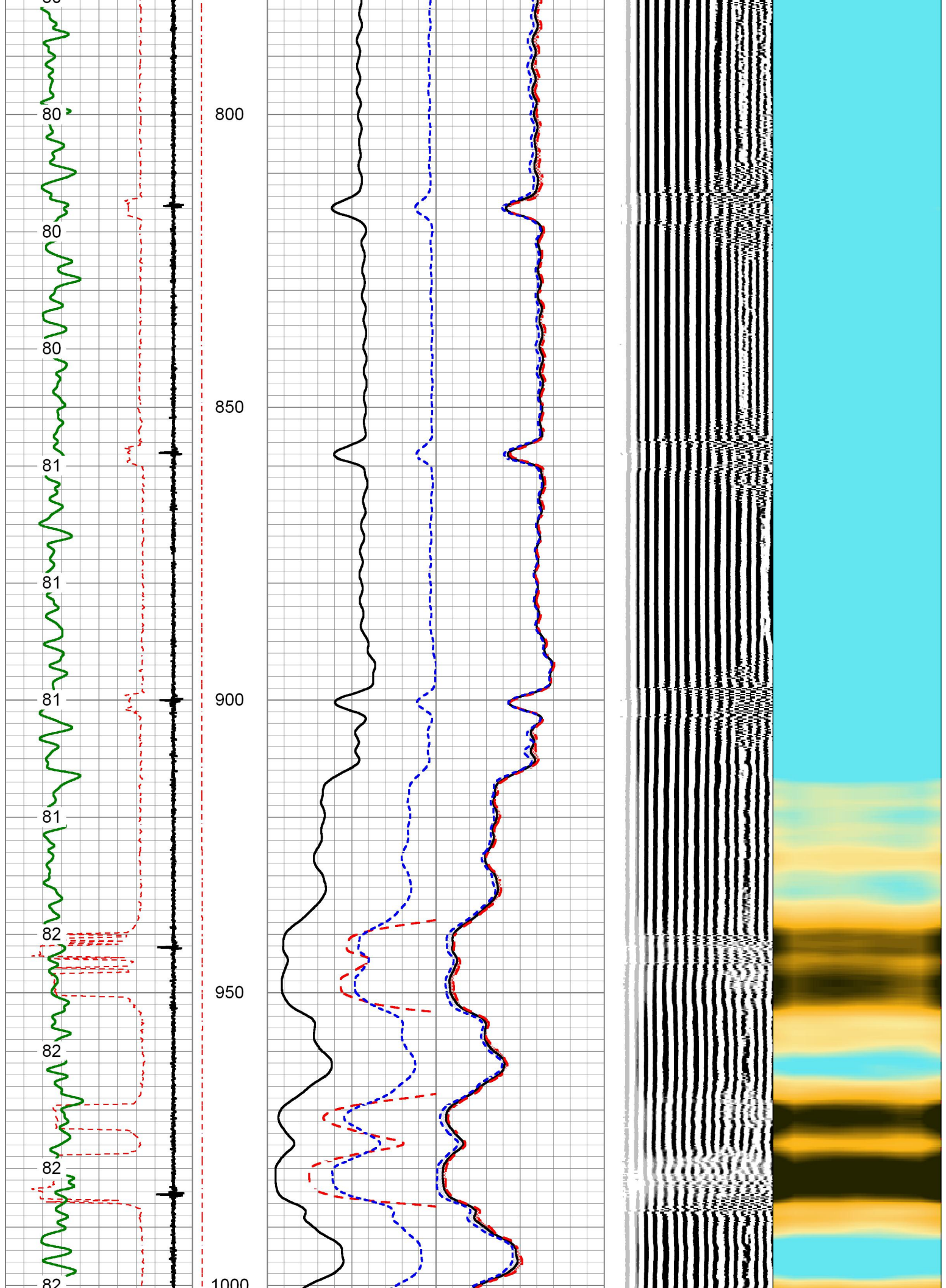
3' Travel Time			Line Tension	3' Amplitude		Sector	200	VDL	1200	1	Sector Map	8	
		0		(mV)	100	Amplitude Average							
350	(usec)	250				0							150
-9 Collar Locator		1		3' Amplified Amplitude X 5									
Gamma Ray				0	(mV)	20							Amplitude Maximum
0 (GAPI)			1	Bond Index	0	0	150						
Temp (degF)						Sector Amplitude Minimum							
						0	150						

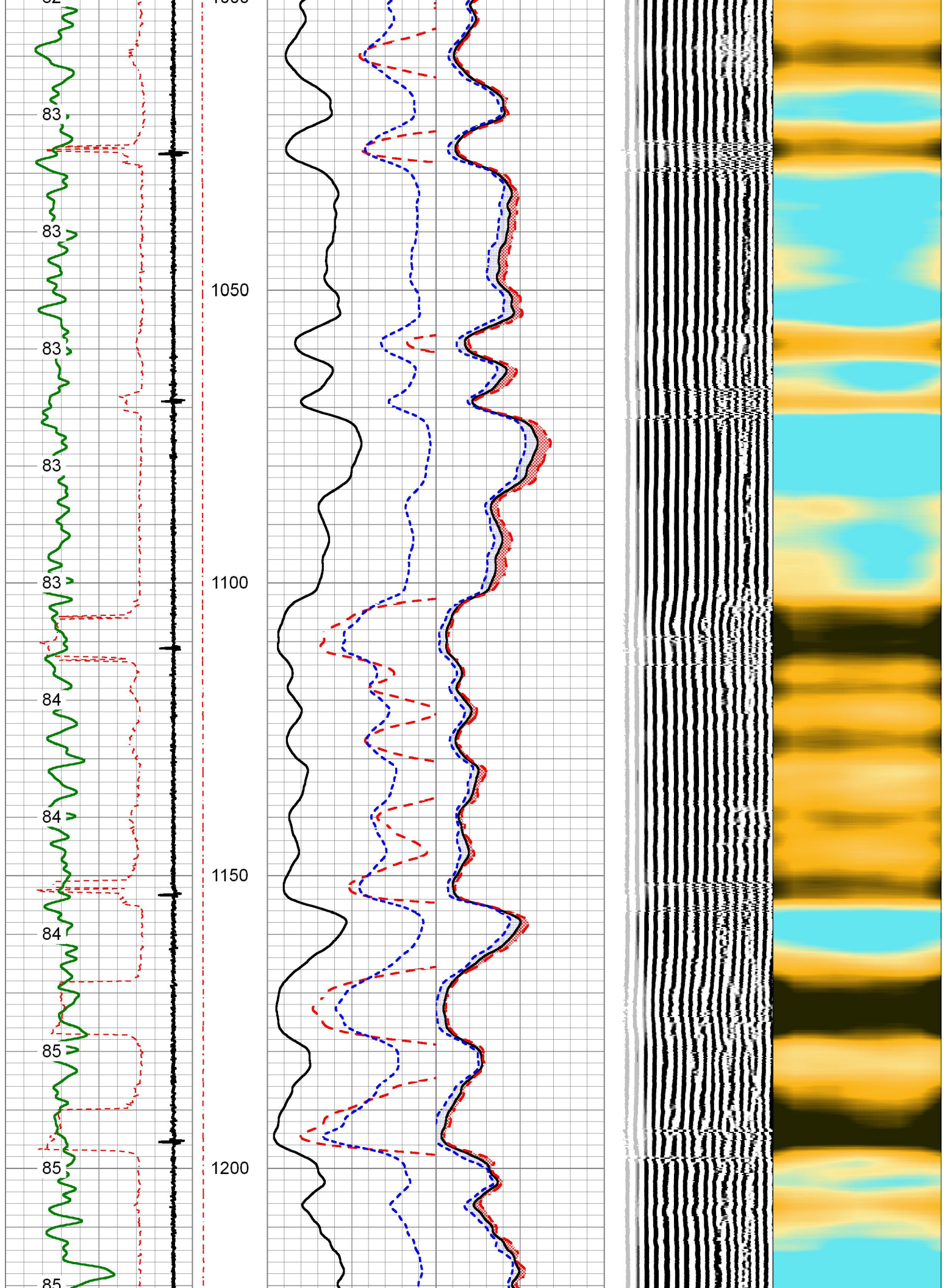


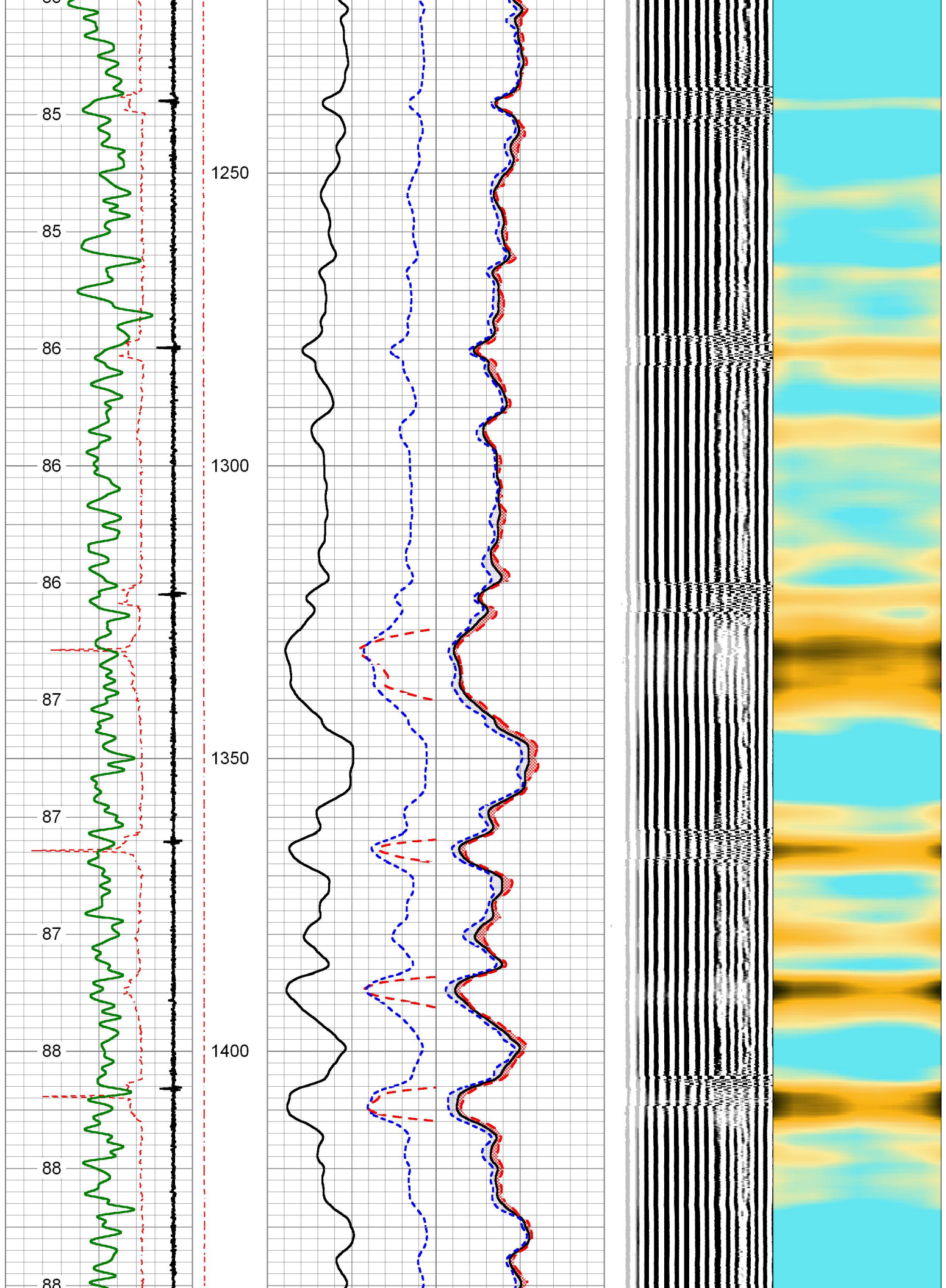


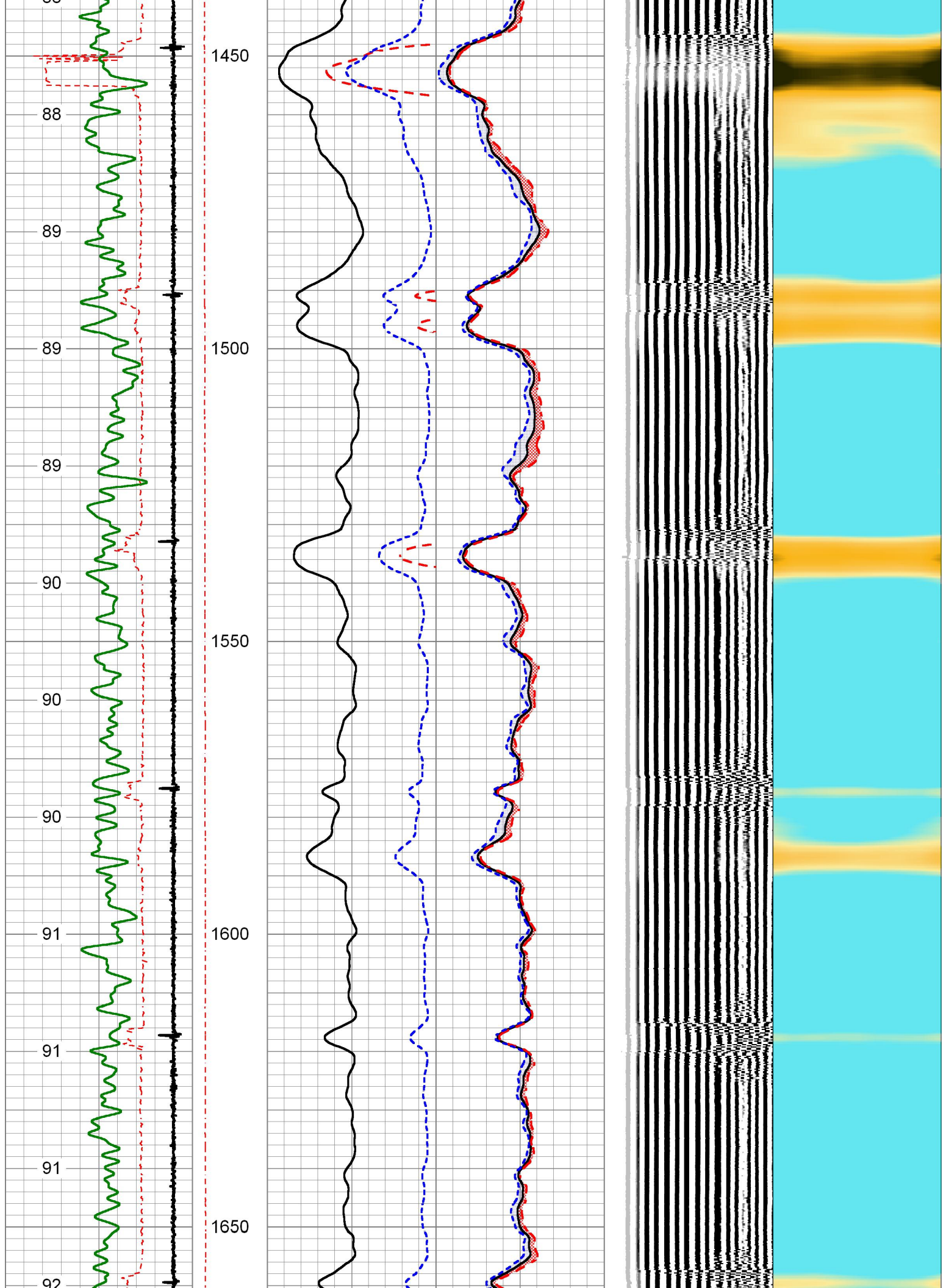


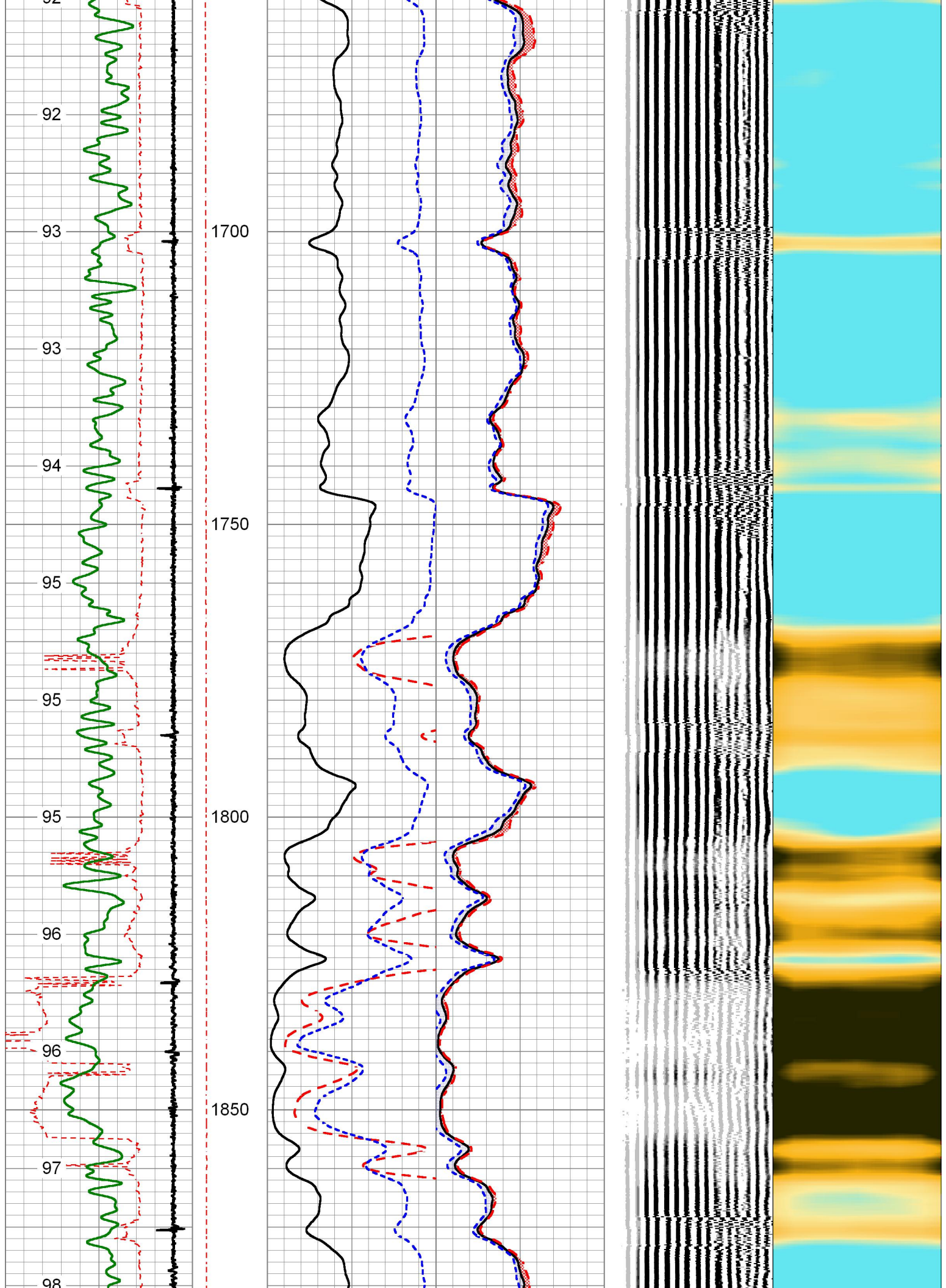


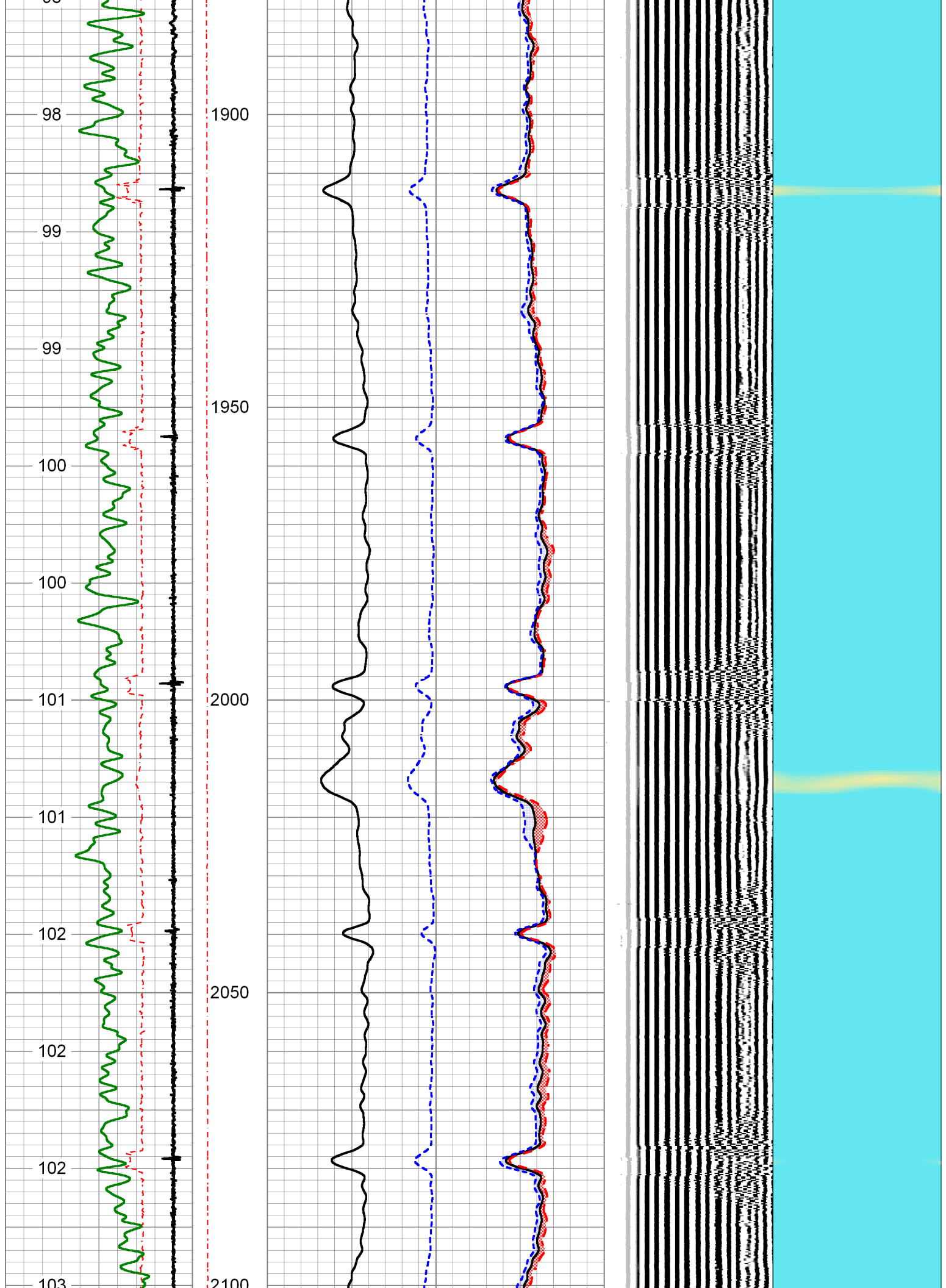


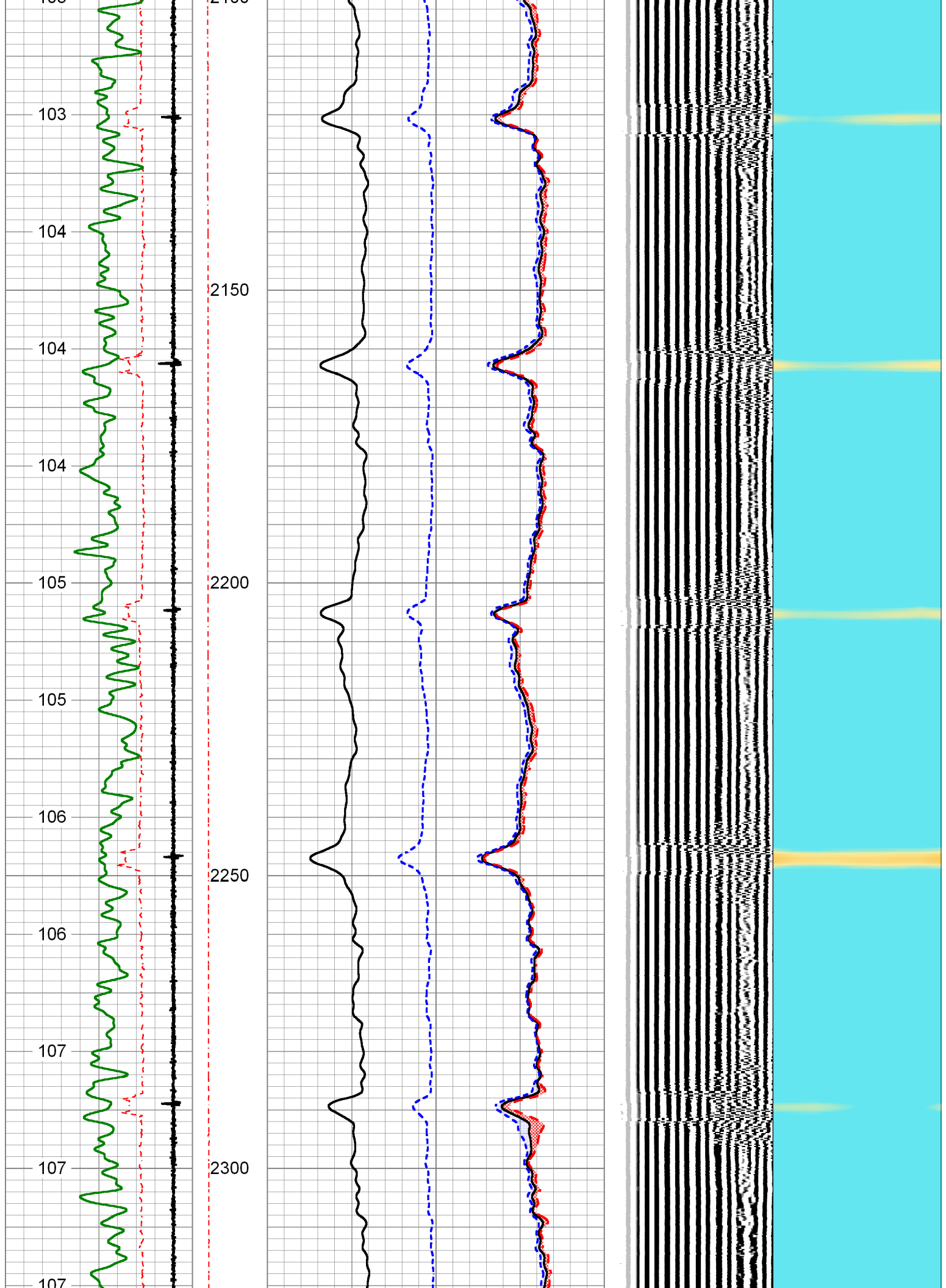


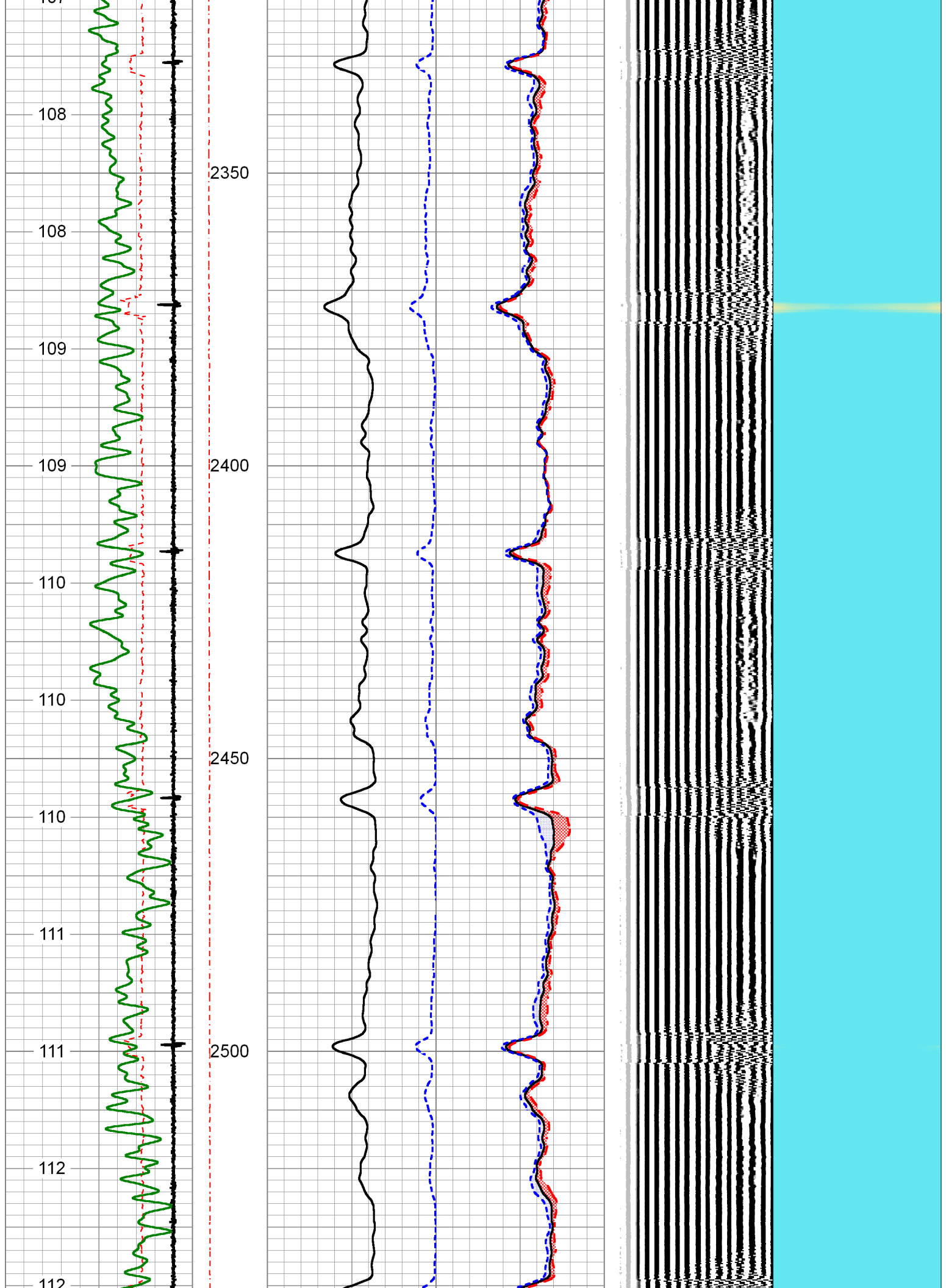


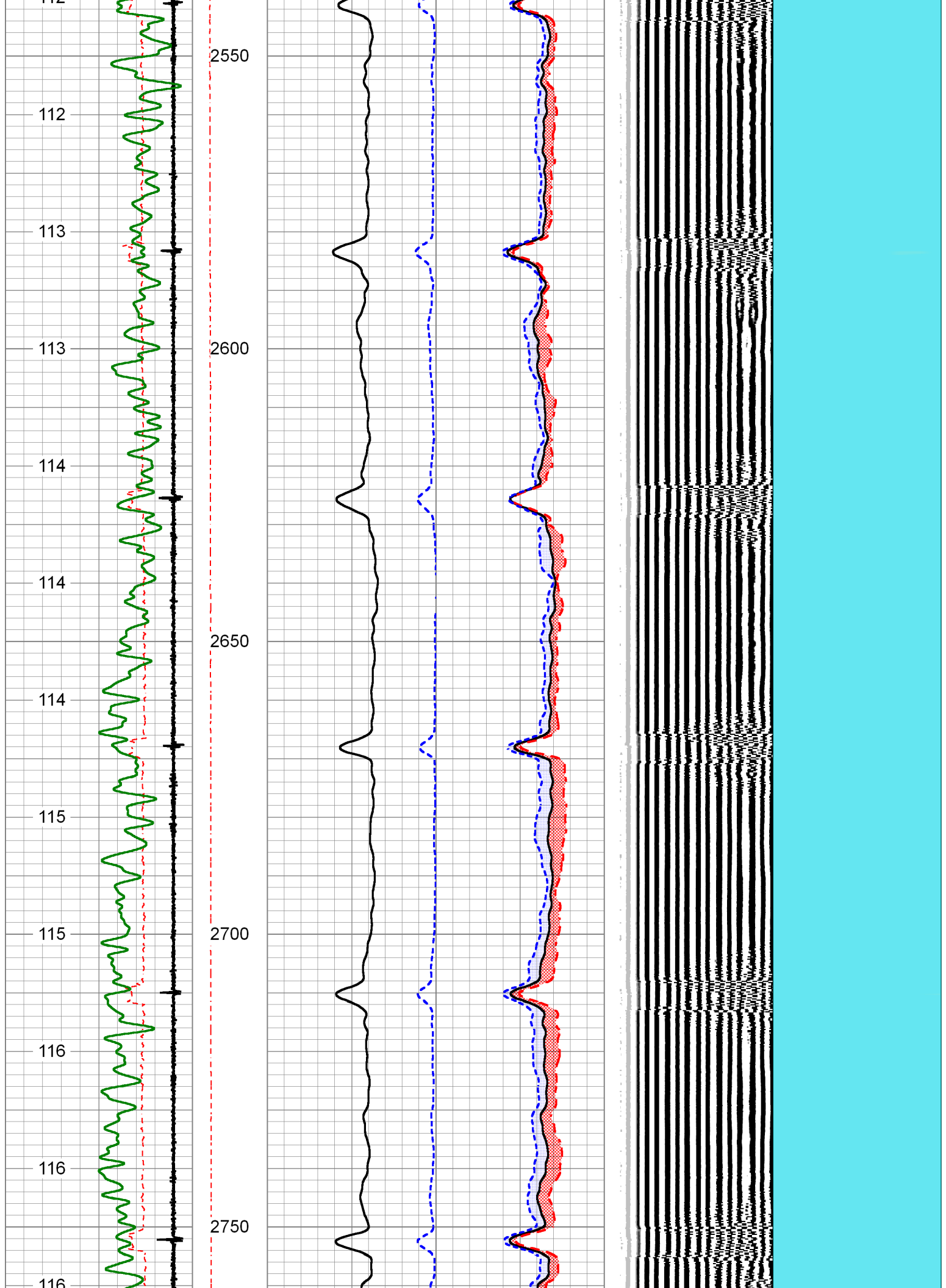


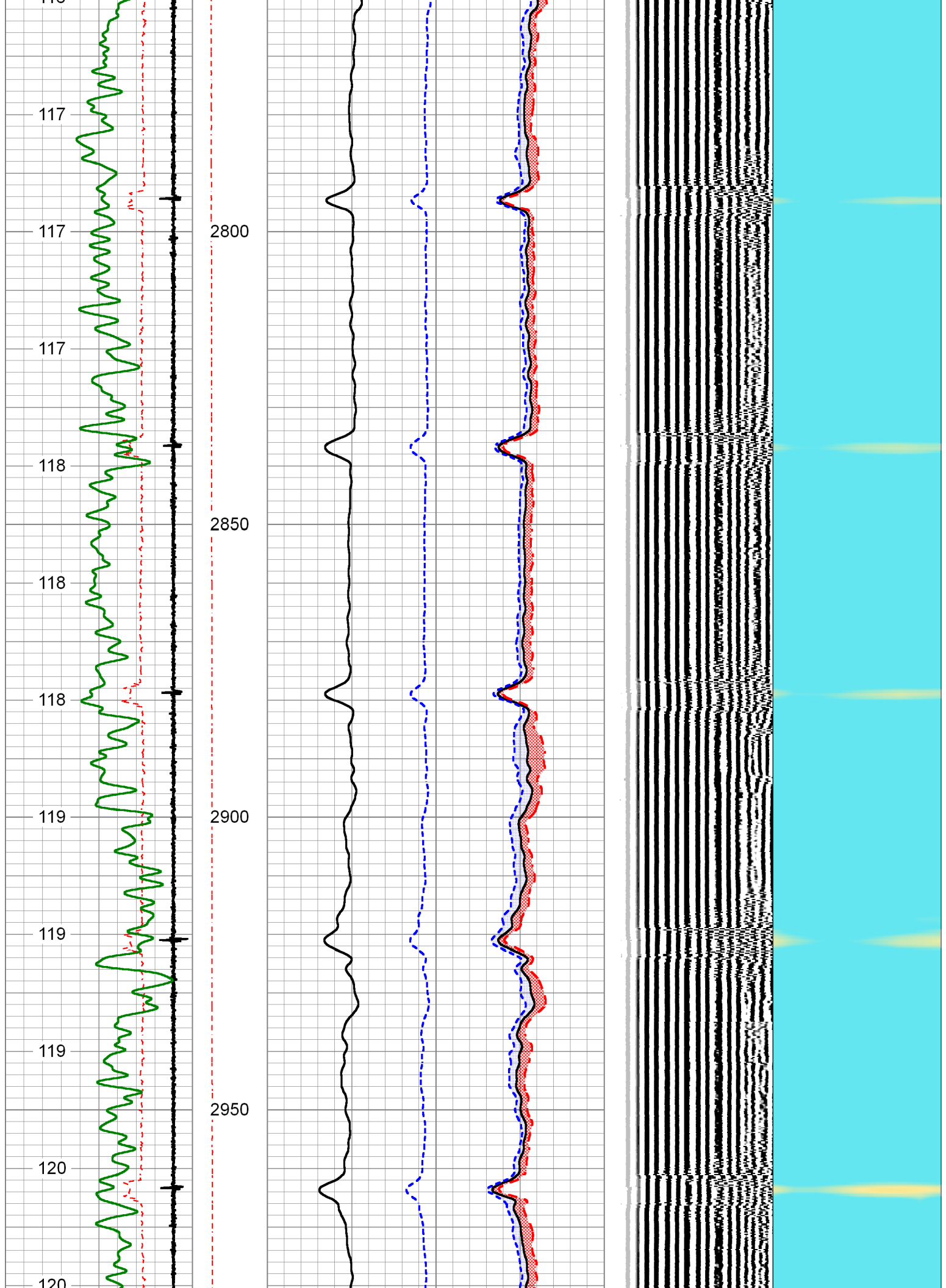


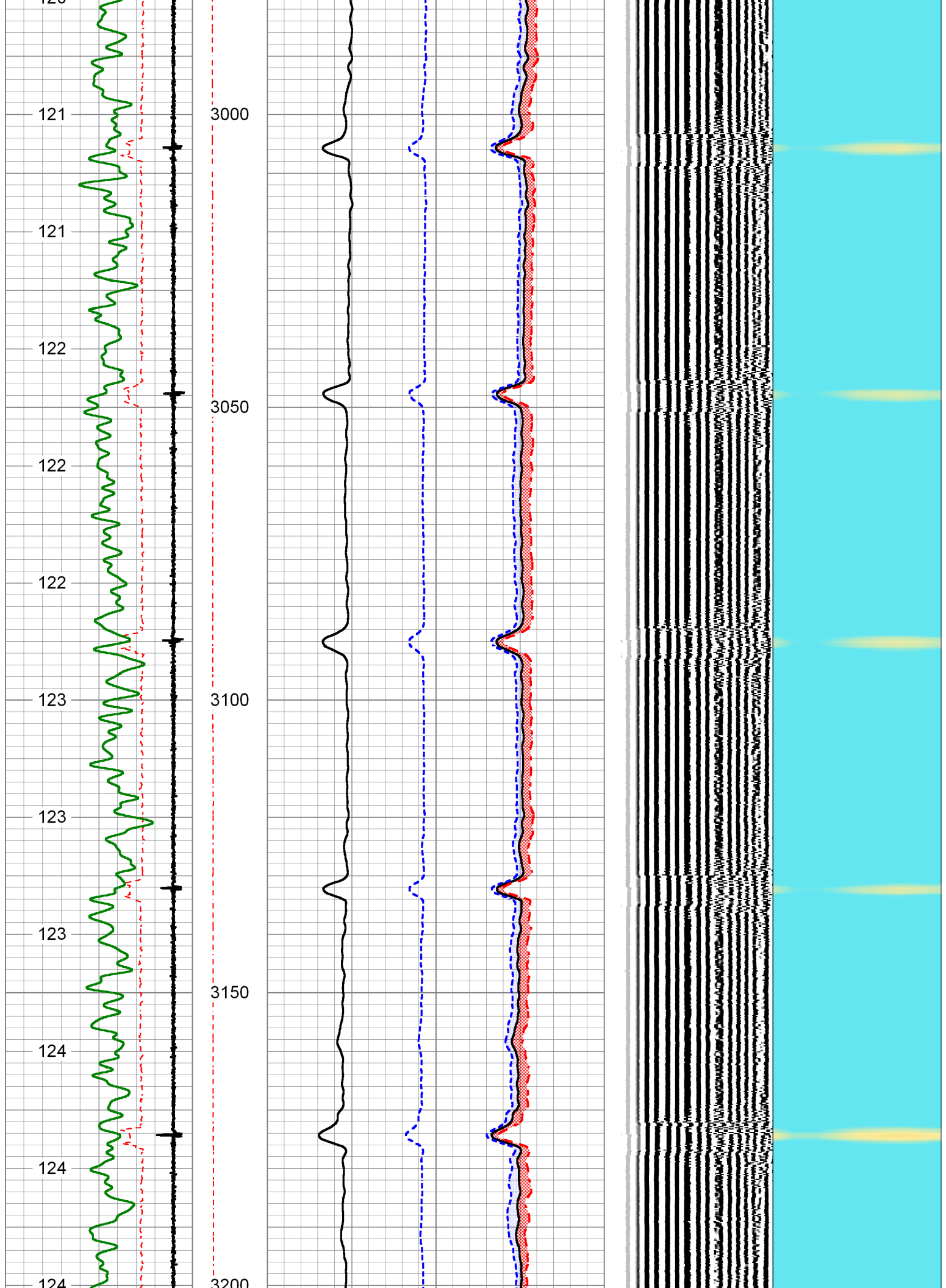


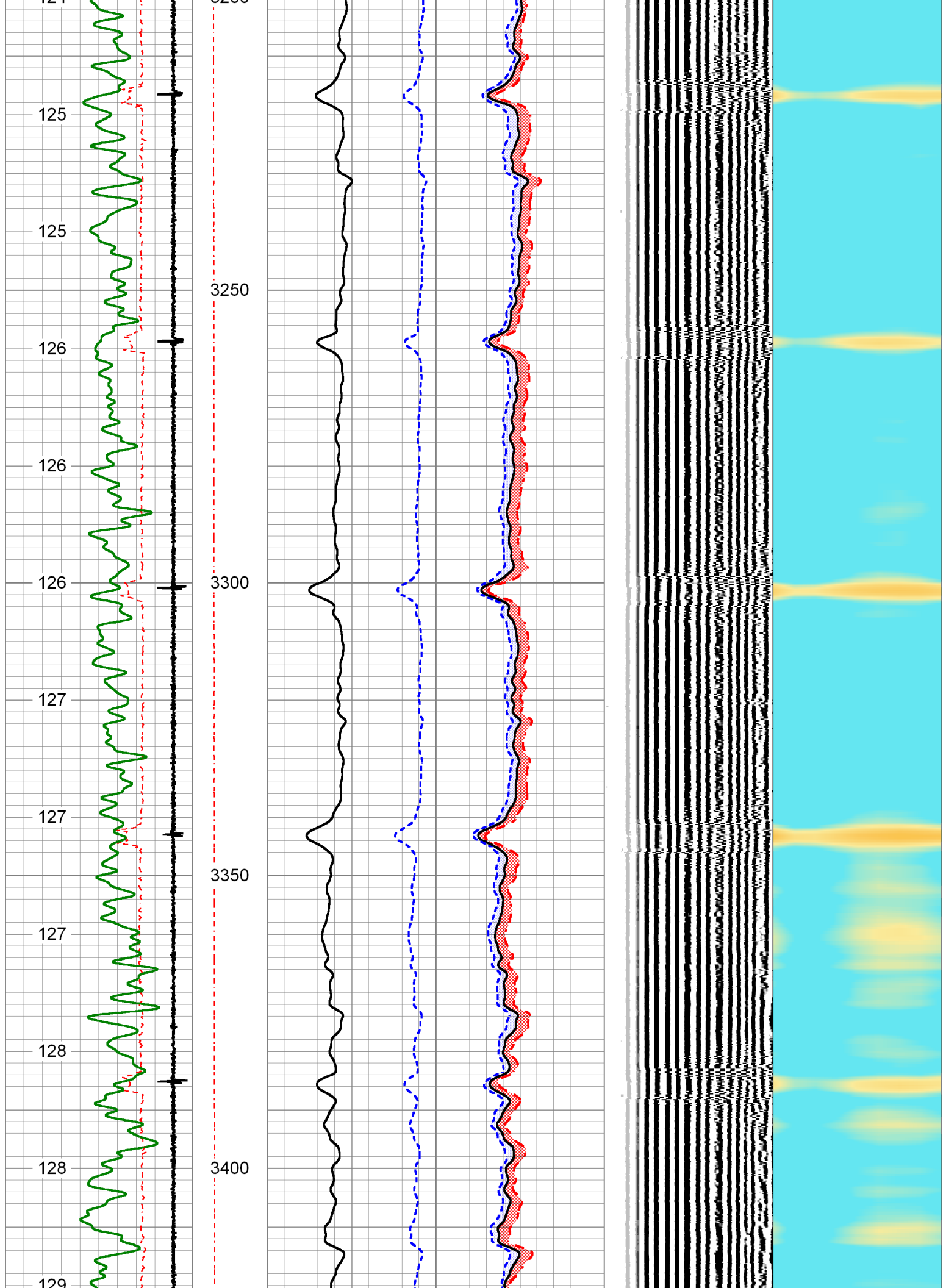


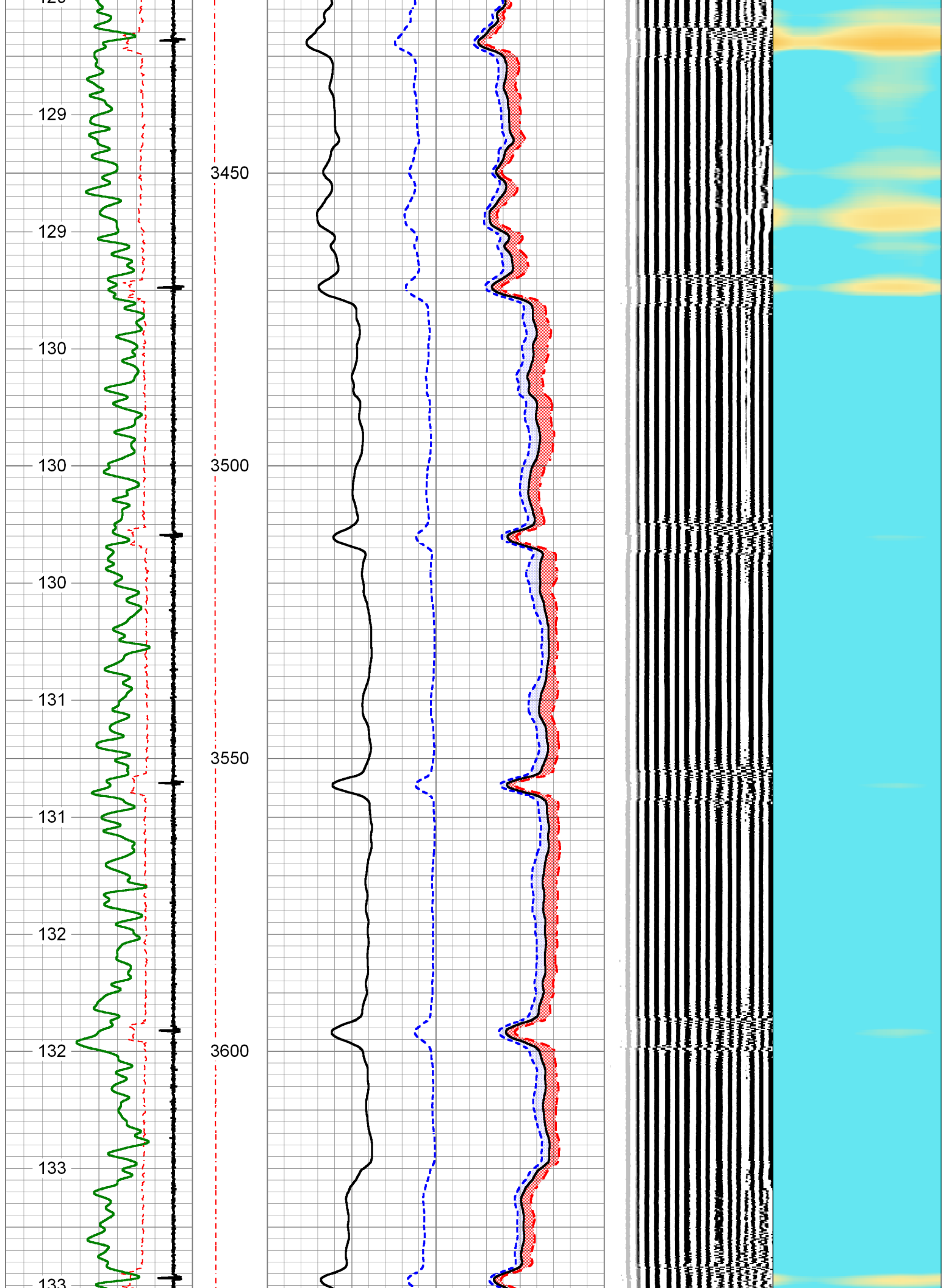


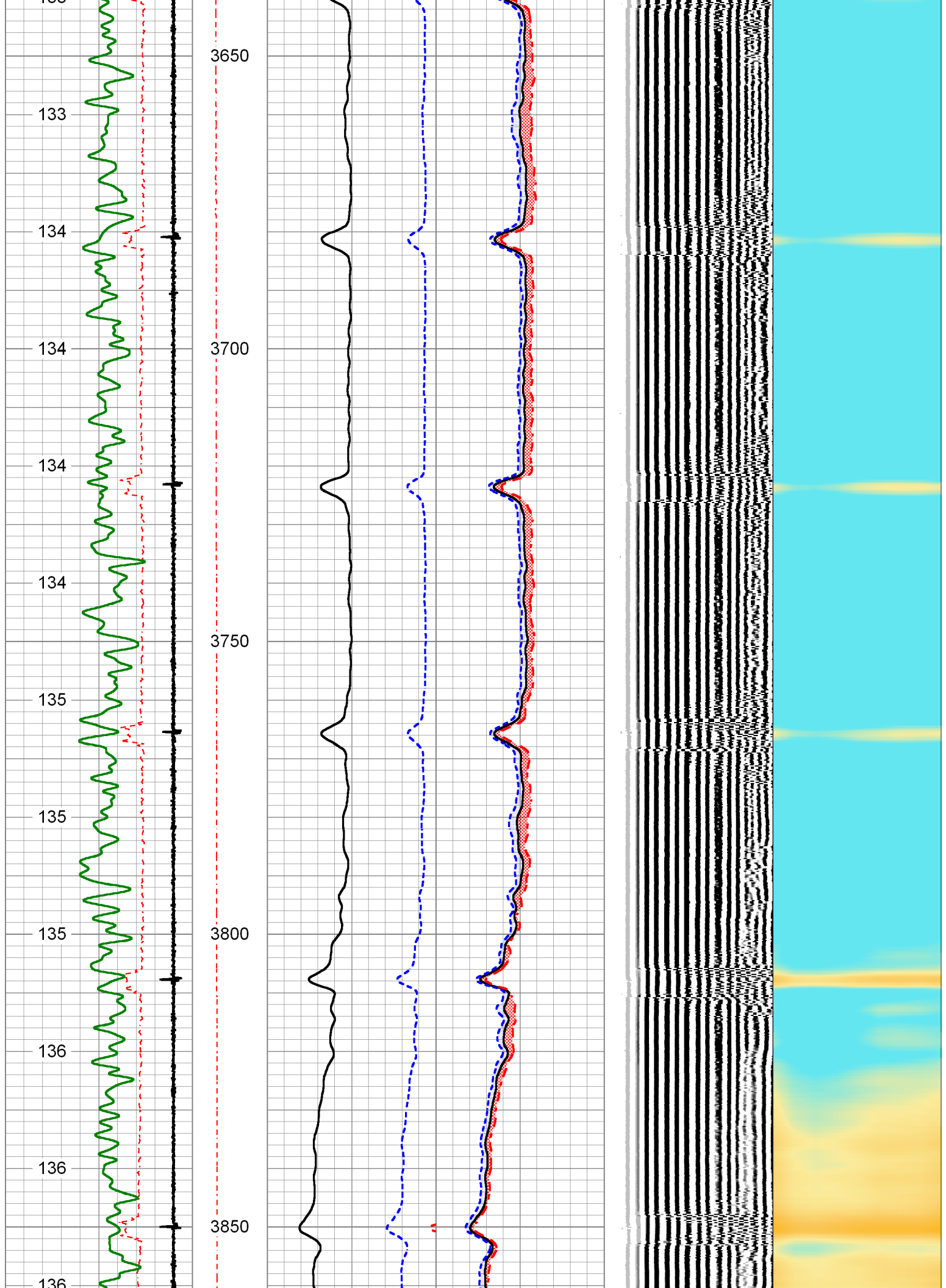


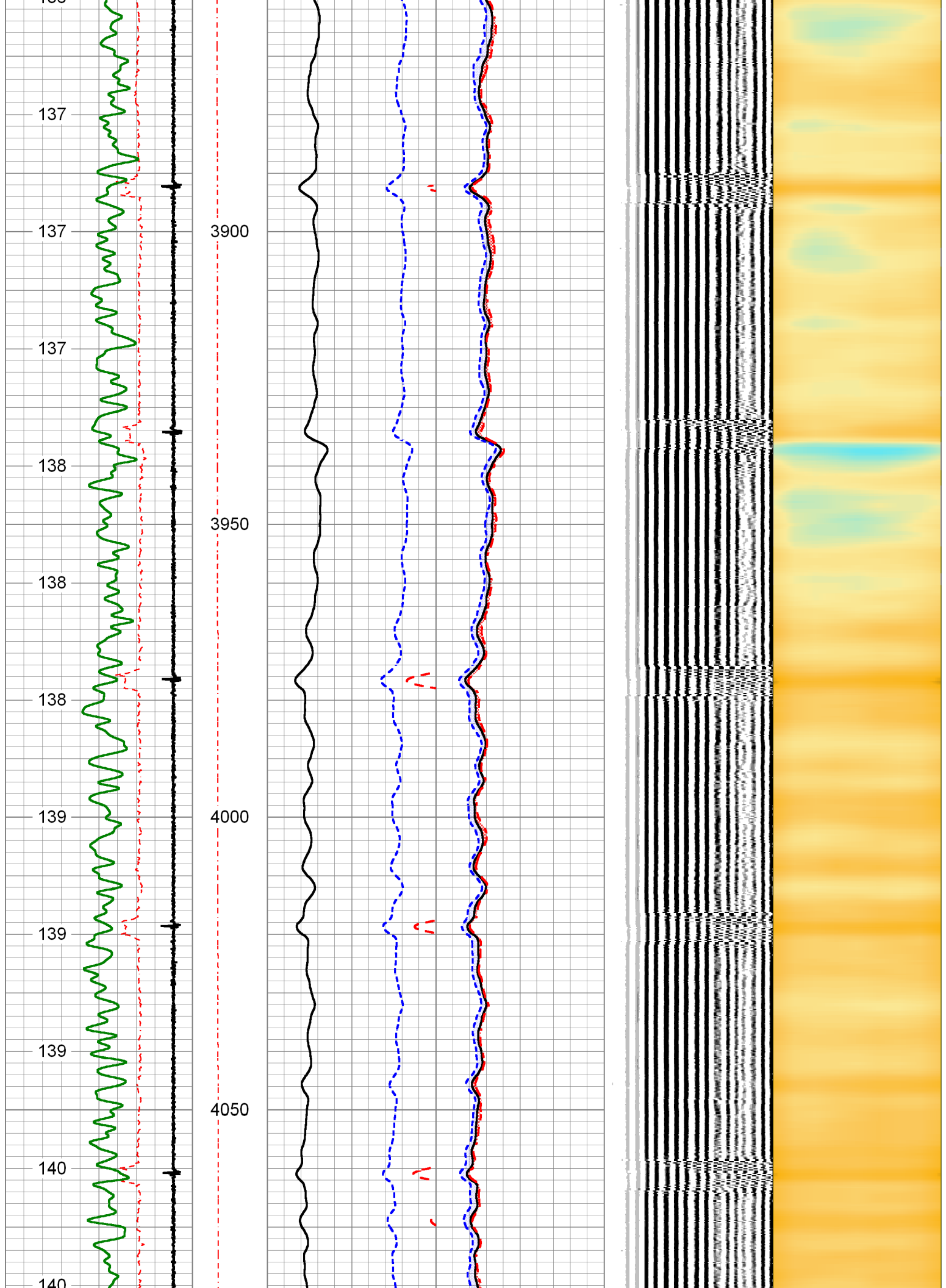


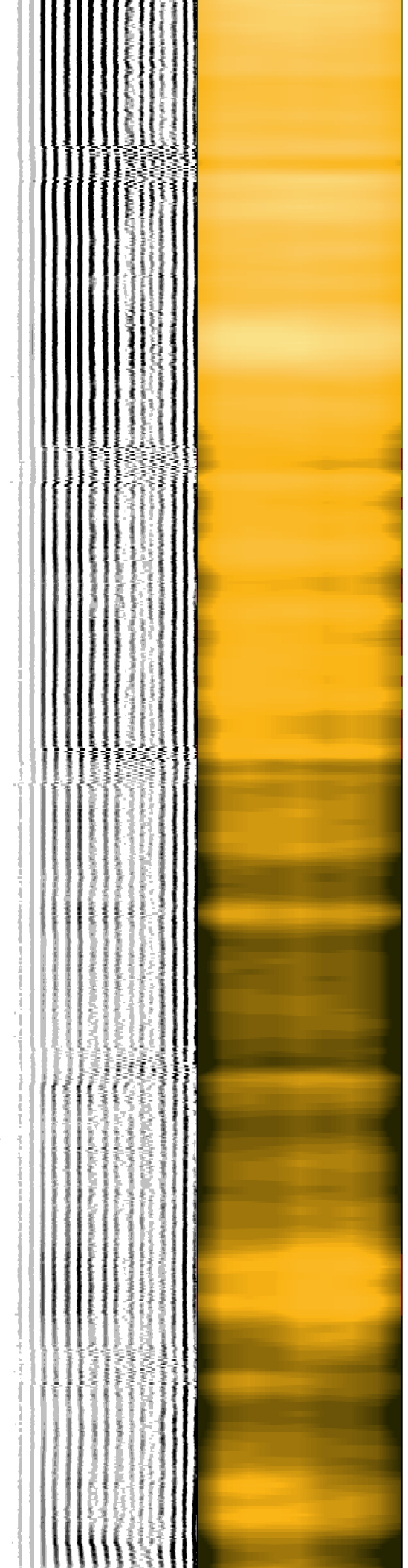
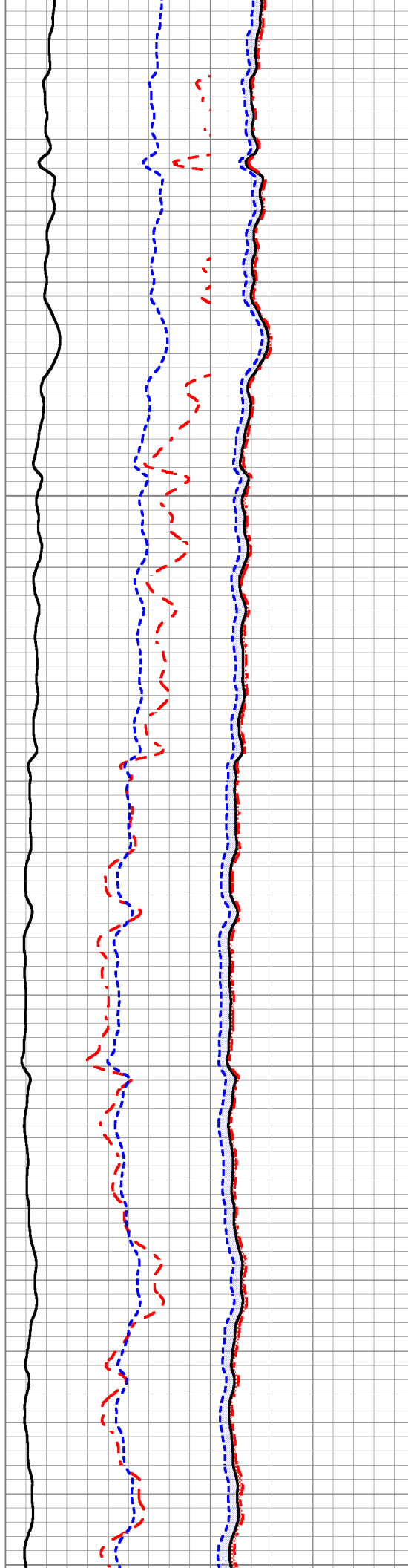
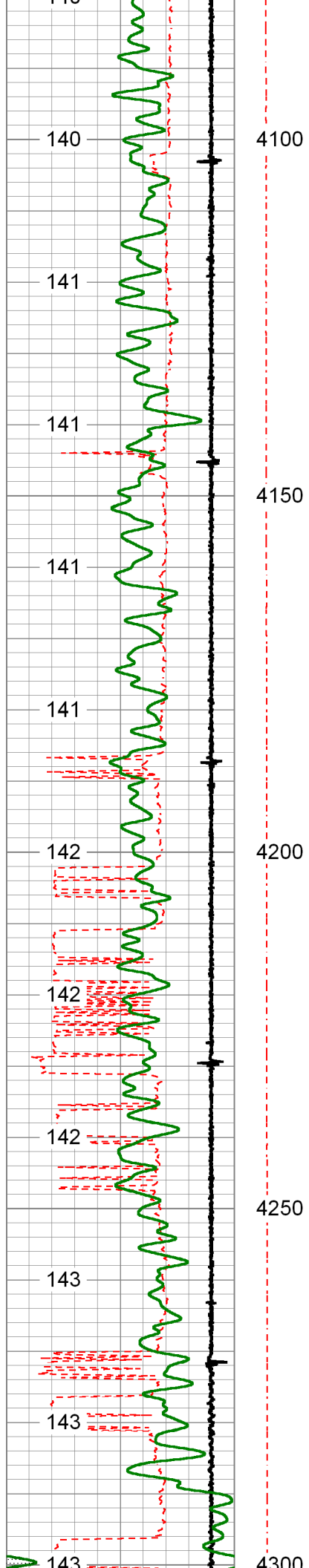


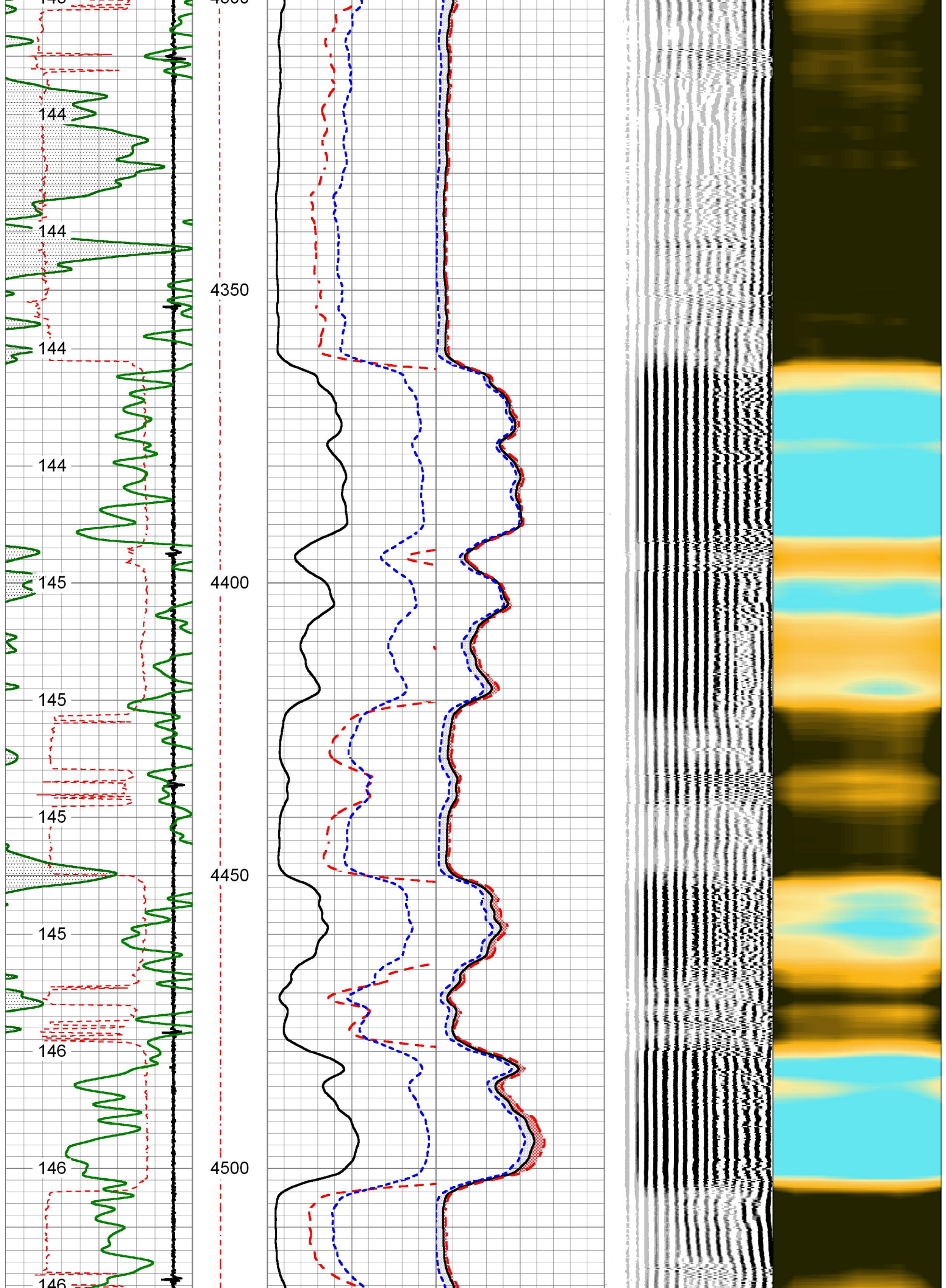


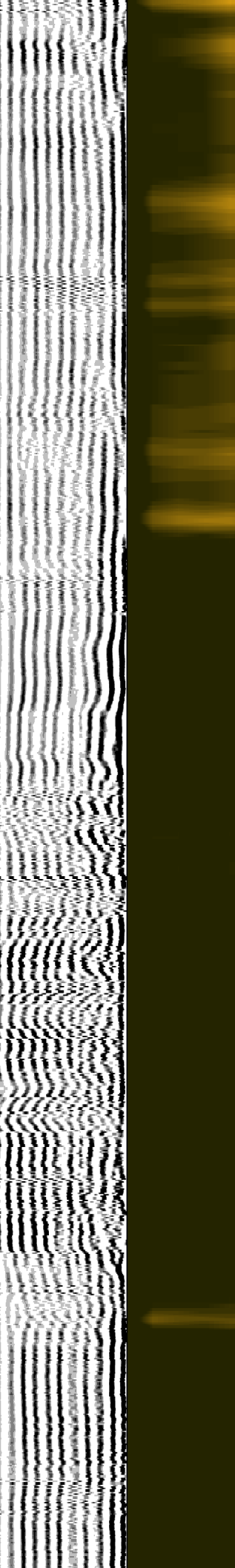
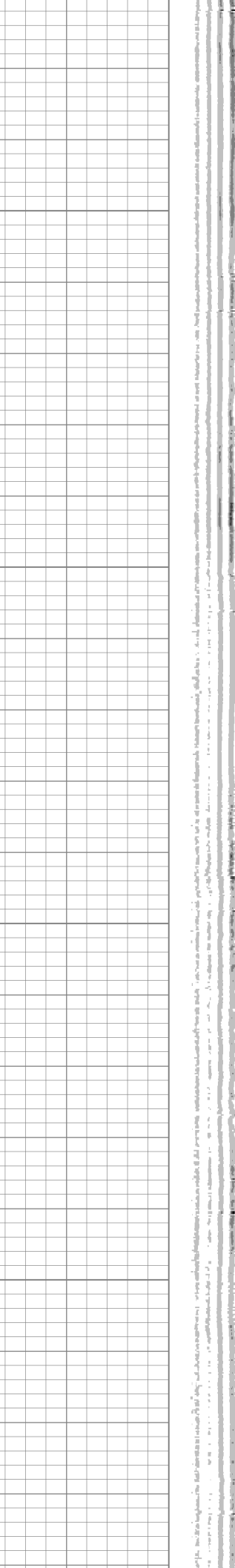
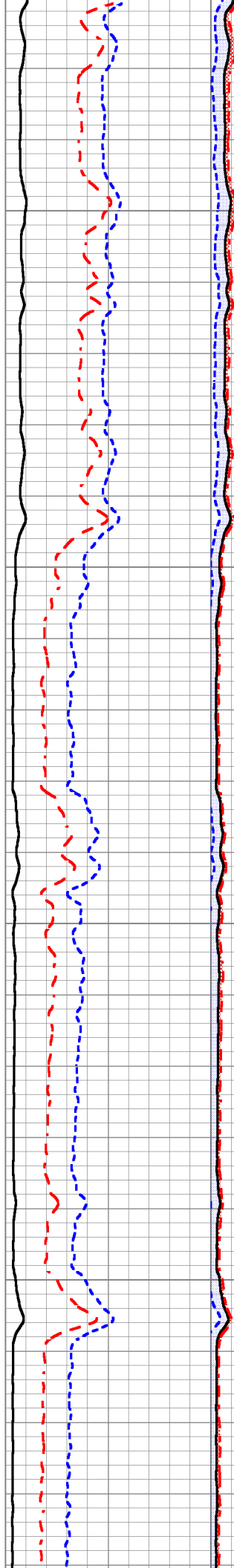
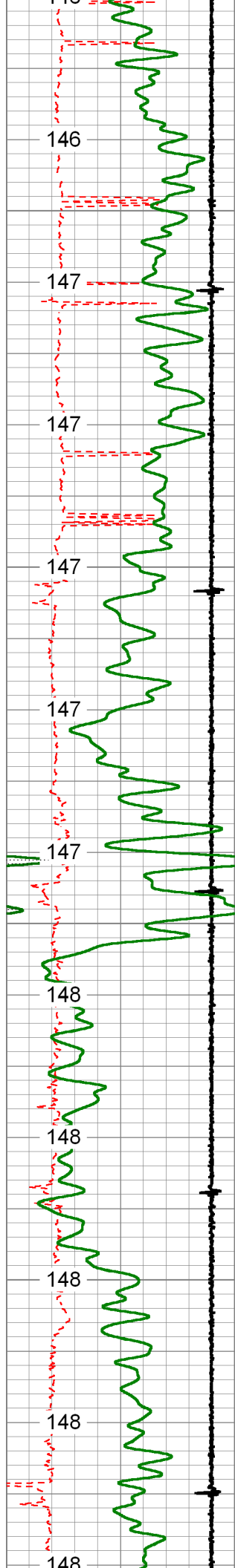


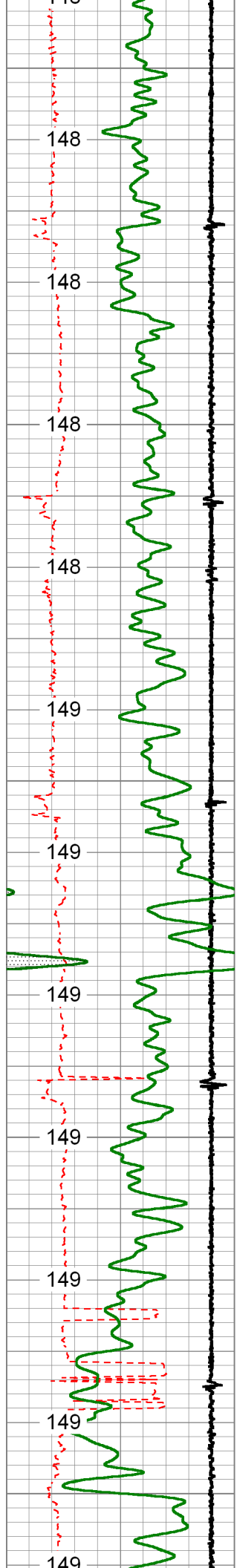




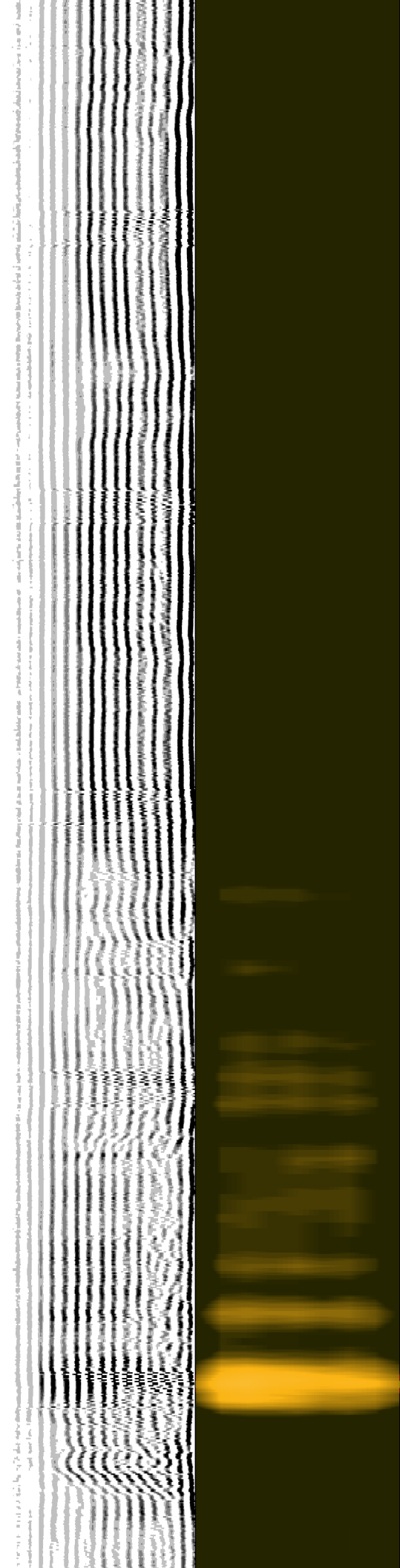
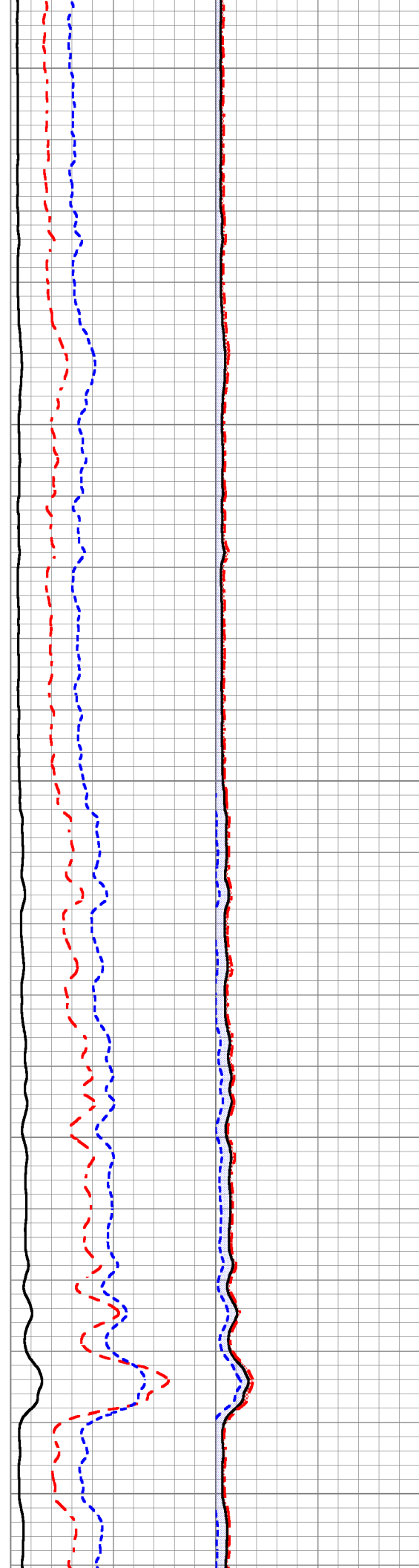







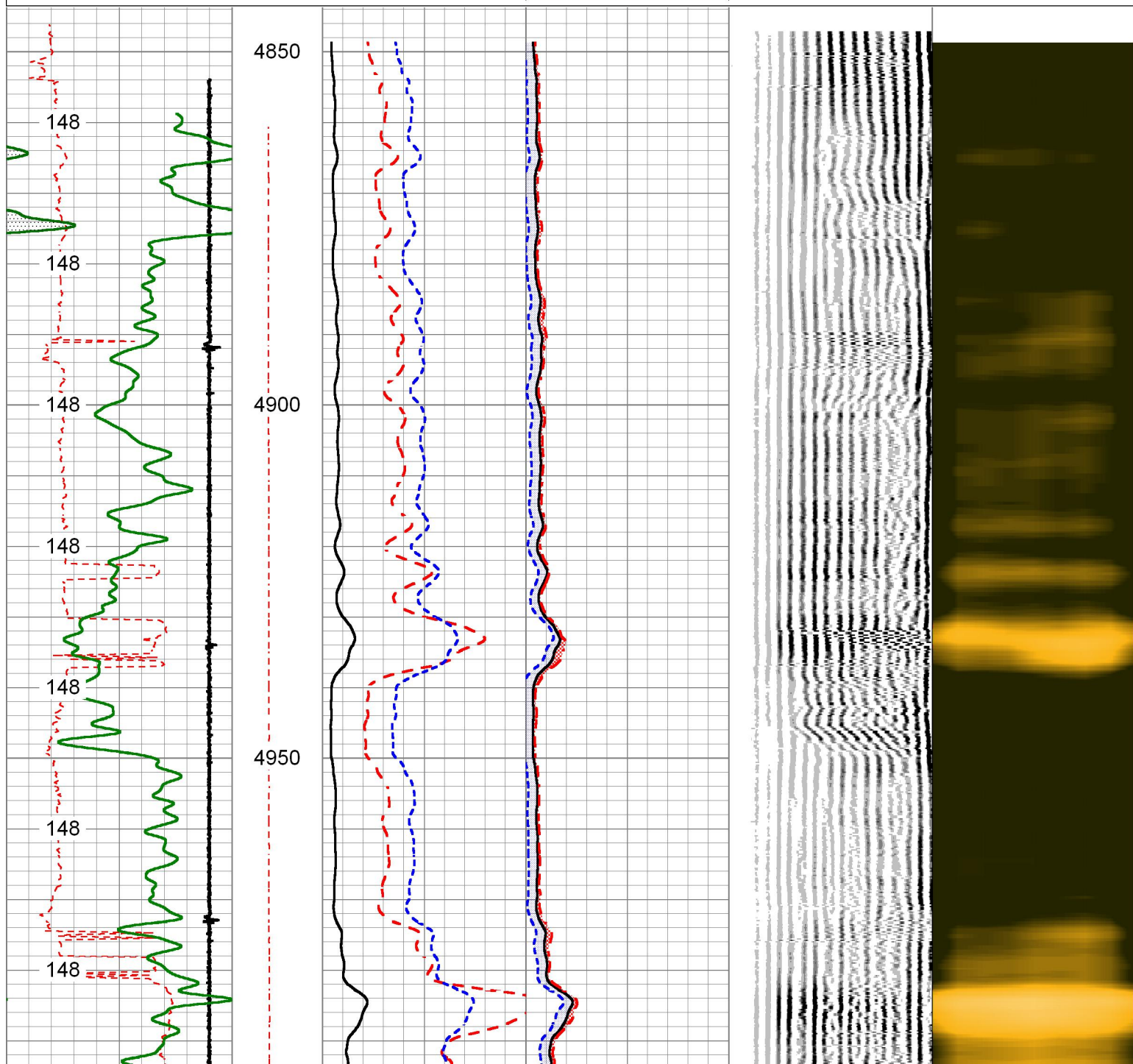


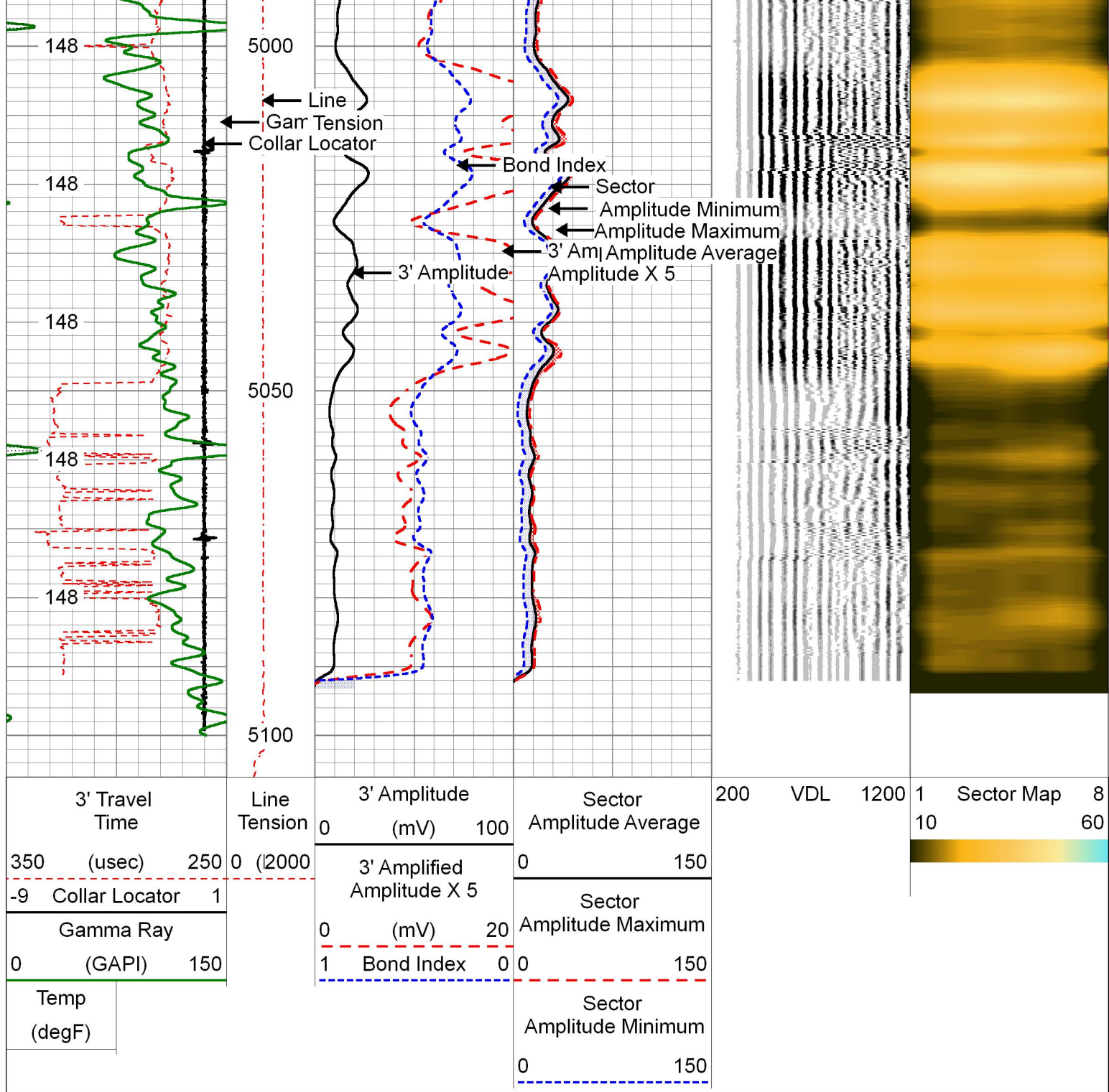
4750
4800
4850
4900
4950



Database File wp-d 0 11-2 rbl.db
Dataset Pathname pass4
Presentation Format pinr_scb1
Dataset Creation Thu Aug 04 15:23:46 2016
Charted by Depth in Feet scaled 1:240

3' Travel Time			Line Tension 0 (2000)	3' Amplitude (mV) 100		Sector Amplitude Average		200 VDL 1200	1 10	Sector Map 8 60	
350 (usec)	250	3' Amplified Amplitude X 5		0 150							
Gamma Ray				0 (mV) 20		Sector Amplitude Maximum					
0 (GAPI) 150				1 Bond Index 0		0 150					
Temp (degF)				Sector Amplitude Minimum							
				0 150							





Calibration Report

Database File wp-d 0 11-2 rbl.db
 Dataset Pathname pass5
 Dataset Creation Thu Aug 04 15:29:47 2016

Gamma Ray Calibration Report

Serial Number: 111211
 Tool Model: 275 Probe GR-CCL Dig
 Performed: Thu Aug 04 14:55:28 2016

Calibrator Value: 320.0 GAPI

Background Reading: 0.1 cps
 Calibrator Reading: 0.9 cps

Sensitivity:

0.8500

GAPI/cps

Segmented Cement Bond Log Calibration Report

Serial Number: 141167
 Tool Model: 275 Probe w Temp New Mod

Calibration Casing Diameter: 7.000 in
 Calibration Depth: 2178.708 ft

Master Calibration, performed Thu Aug 04 15:12:32 2016:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.007	1.005	0.100	62.165	62.167	-0.309
CAL	0.007	1.536				
5'	0.010	1.016	0.100	62.165	61.687	-0.491
SUM						
S1	0.059	1.007	0.000	100.000	105.552	-6.252
S2	0.009	1.086	0.000	100.000	92.821	-0.798
S3	0.006	1.075	0.000	100.000	93.555	-0.545
S4	0.007	1.007	0.000	100.000	100.029	-0.739
S5	0.003	0.955	0.000	100.000	105.082	-0.362
S6	0.005	0.912	0.000	100.000	110.336	-0.593
S7	0.007	0.923	0.000	100.000	109.103	-0.750
S8	0.009	0.975	0.000	100.000	103.585	-0.951

Temperature Calibration Report

Serial Number: 141167
 Tool Model: 275 Probe w Temp New Mod
 Performed: Wed Jul 13 12:33:32 2016

	Reference	Reading
Low Reference:	35.00 degF	0.09 degF
High Reference:	212.00 degF	1.22 degF
Gain:	0.78	
Offset:	10.00	
Delta Spacing	1	



Company EAST CHEYENNE GAS STORAGE, LLC.
 Well ECGS 6-18 WP-D011-2
 Field WEST PEETZ
 County LOGAN
 State CO