



# PIONEER

Pioneer Energy Services

## RADIAL BOND LOG WITH GAMMA RAY

Comp. ANADARKO PETROLEUM CORP.  
Well BARRON FEDERAL 24-18  
Field WATTENBERG  
Co. WELD  
State COLORADO

Company **ANADARKO PETROLEUM CORP.**  
Well **BARRON FEDERAL 24-18**  
Field **WATTENBERG**  
County **WELD** State **COLORADO**

Location: API # : 05-123-30844  
SHL: 2047' FSL & 1741' FEL  
LAT: 40.22300/LONG: -104.81700  
SEC 18 TWP 3N RGE 66W  
Permanent Datum GL Elevation 4827'  
Log Measured From KB 14' Above Perm. Datum  
Drilling Measured From KB  
Elevation 4841'  
K.B. N/A  
D.F. N/A  
G.L. 4827'

Date of Service	16 OCTOBER 2019		
Run Number	ONE		
Depth Driller or PBTD	7120'		
Depth Logger	7122'		
Bottom Log Interval	7122'		
Top Log Interval	SURFACE		
Open Hole Size	7.875		
Type Fluid	WATER		
Fluid Level	FULL		
Fluid Density	N/A		
Max. Recorded Temperature	220 degF		
Max. Wellhead Pressure	ZERO		
Wellhead Connection	TUBING HANGER		
Estimated Cement Top	N/A		
Unit Number	P-81		
Wireline Size	9/32		
Location	FORT MORGAN		
Recorded By	SCHOENROGGE		
Witnessed By	MR. MONTELONGO		
	Size	Wt/Ft	Top
Tubing Record			Bottom
Surface Casing	8.625	23	0
Production Casing	4.5	11.6	0
Liner Record	3.5"	9.2	0

<<< 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.  
NO FRRE PIPE PASS  
TANK CALIBRATION VERIFIED ON 15 OCT 2019  
SOME INTERFERENCE FROM 4.5" STRING ON SECTOR CURVES

THANK YOU FOR USING PIONEER ENERGY SERVICES!

Your Pioneer Energy Services Crew

Engineer: SCHOENROGGE  
Operator: JAMES TRAHAN  
Operator: MICK  
Operator:

Tool Data - Services

SEE DIAGRAM

Serial Number

## Log Variables

Dataset field/well/run1/pass11/\_vars\_

### Top - Bottom

BHTEMP_Src	BOREID	BOTTEMP	CASEOD	CASETHCK	CASEWGHT	MAXAMPL
TEMP	in	degF	in	in	lb/ft	mV
	7.875	220	3.5	0	9.2	94.5
MINAMPL	MINATTN	PERFS	PPT	SRFTEMP	TDEPTH	
mV	db/ft		usec	degF	ft	
1	0.8	0	0	50	7200	

### Variable Description

BHTEMP\_Src : BHTEMP Input Source Selector

BOREID : Borehole I.D.

BOTTEMP : Bottom Hole Temperature

CASEOD : Casing O.D.

CASETHCK : Casing Thickness

CASEWGHT : Casing Weight

MAXAMPL : Maximum Amplitude

MINAMPL : Minimum Amplitude

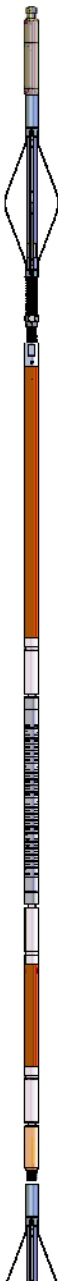
MINATTN : Minimum Attenuation

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_169 1 11/16" Titan Cable Head	1.03	1.69	2.00
			Centralizer-169 Titan ADJ Titan 1 11/16"" Adjustable Centralizer	2.88	1.69	22.00
TEMP	14.80					
WVFCAL	14.13					
WVFS6	13.38			TekCo-SCBL-169-169 TekCo w Temp (IEH19.752) 1 11/16" RIB w/ Temp 400 Deg. F	1.69	63.00
WVFS5	13.38					
WVFS4	13.38					
WVFS3	13.38					
WVFS2	13.38					
WVFS1	13.38					
WVF3FT	12.63					
WVF5FT	11.63					
WVFTEMP	8.30					

			Centralizer-169 TekCo 1 11/16" TekCo Adjustable Centralizer	2.88	1.69	10.00
CCL	4.70		CCL_Logging-169 TekCo (TekCo-169) TekCo 1 11/16" Rare Earth	1.33	1.69	5.00
GR	1.27		GR-169 TekCo (TekCo-169) TEKCO 1 11/16" 400 Deg. F Logging Gamma Ray	3.82	1.68	40.00
			Bullnose-Titan GO Pin Pressure Cap	0.27	1.38	1.00
Dataset: anadarko_barron federal 24-18_0512330844_20191016_scbl.db: field/well/run1/pass11 Total length: 21.96 ft Total weight: 143.00 lb O.D.: 1.69 in						

  
**PIONEER**

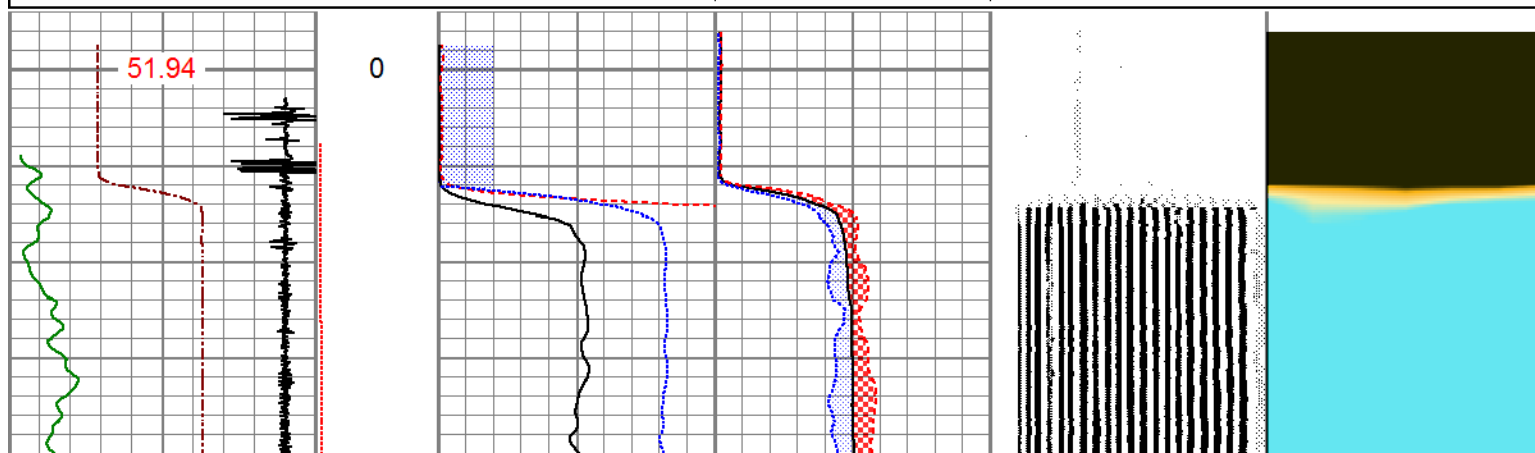
Pioneer Energy Services

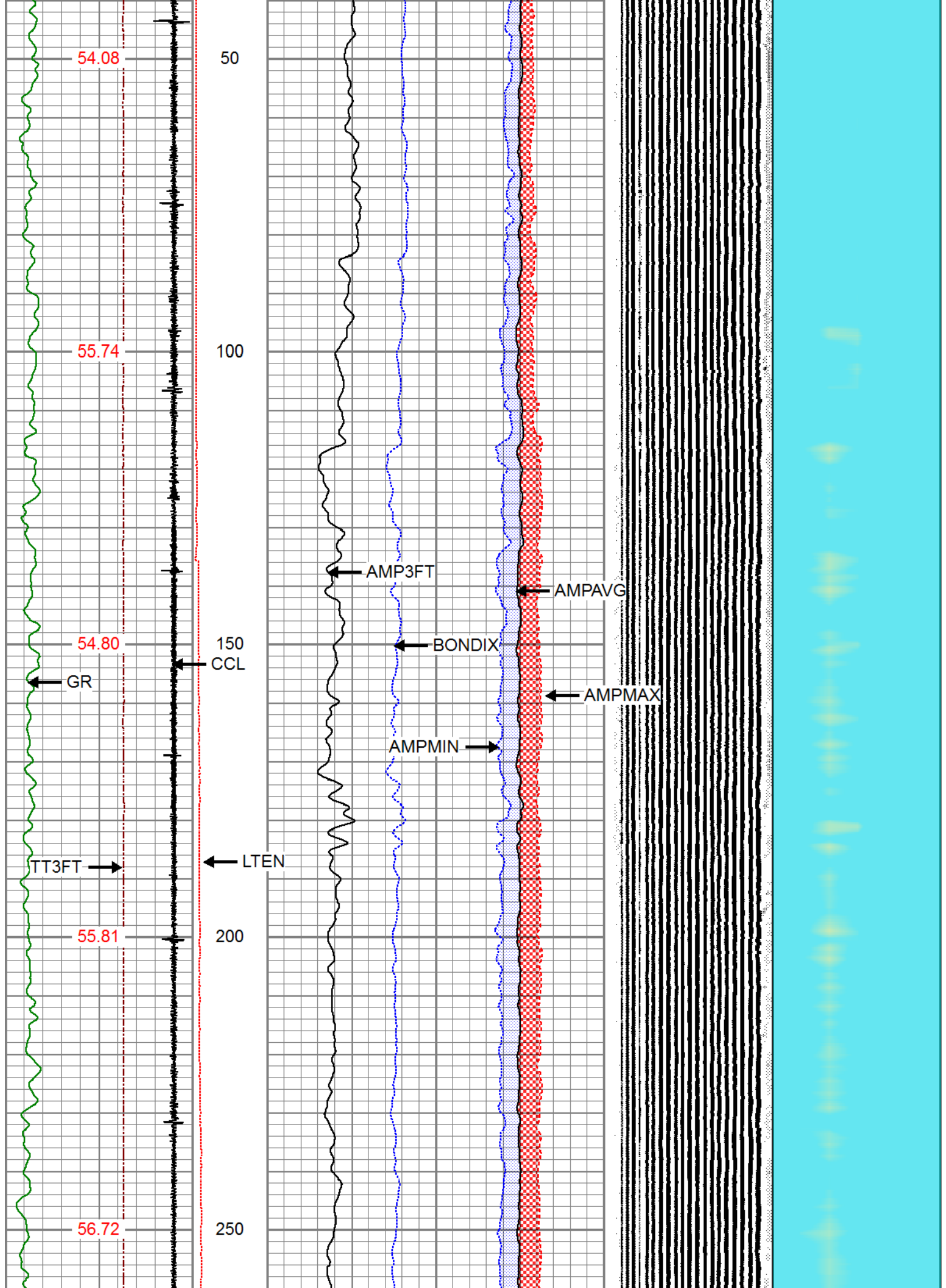
MAIN LOG

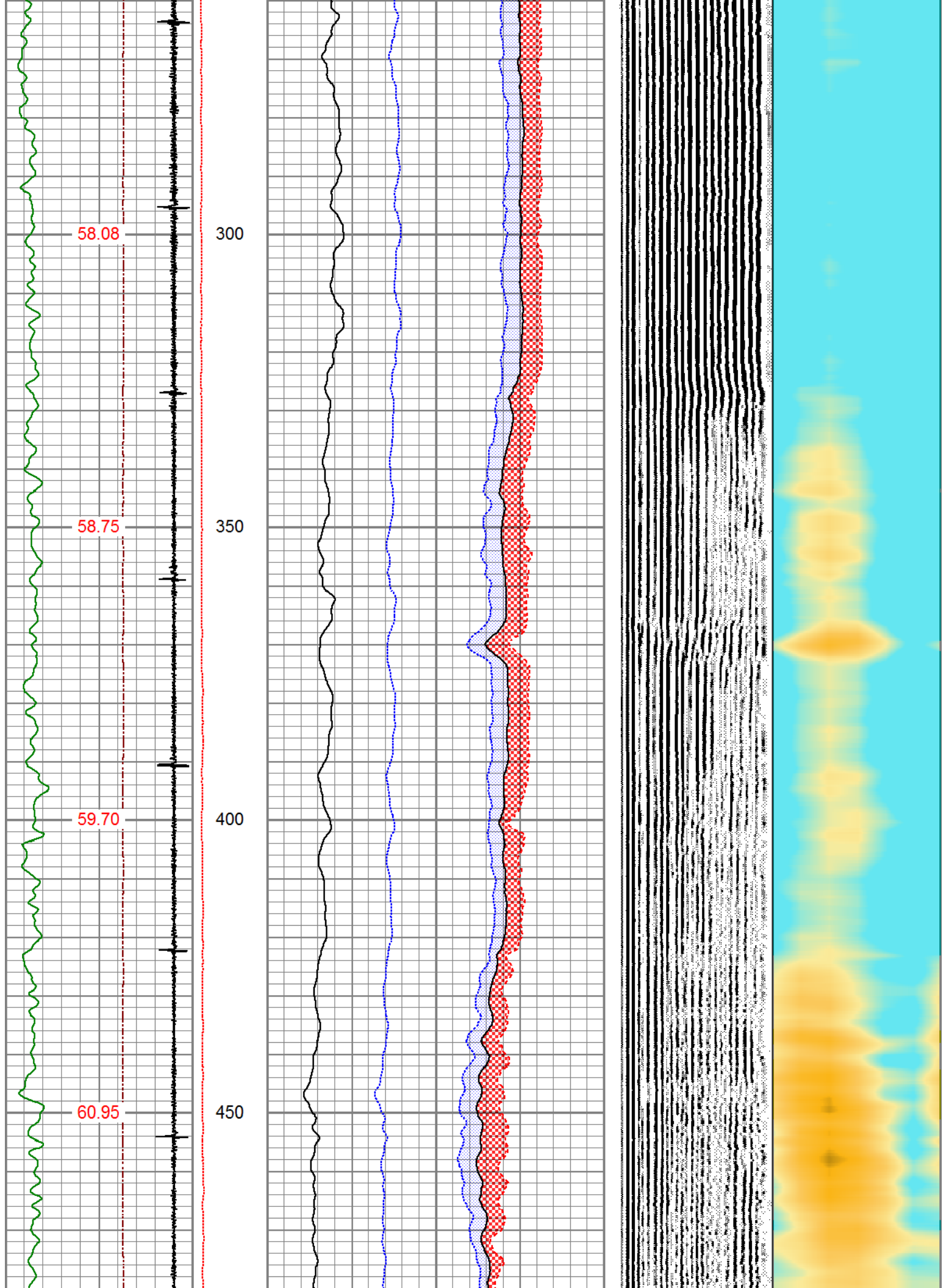
500 PSI APPLIED AT SURFACE

Database File      anadarko\_barron federal 24-18\_0512330844\_20191016\_scbl.db  
Dataset Pathname    pass11  
Presentation Format   pinr\_scbl  
Dataset Creation    Wed Oct 16 08:34:31 2019  
Charted by          Depth in Feet scaled 1:240

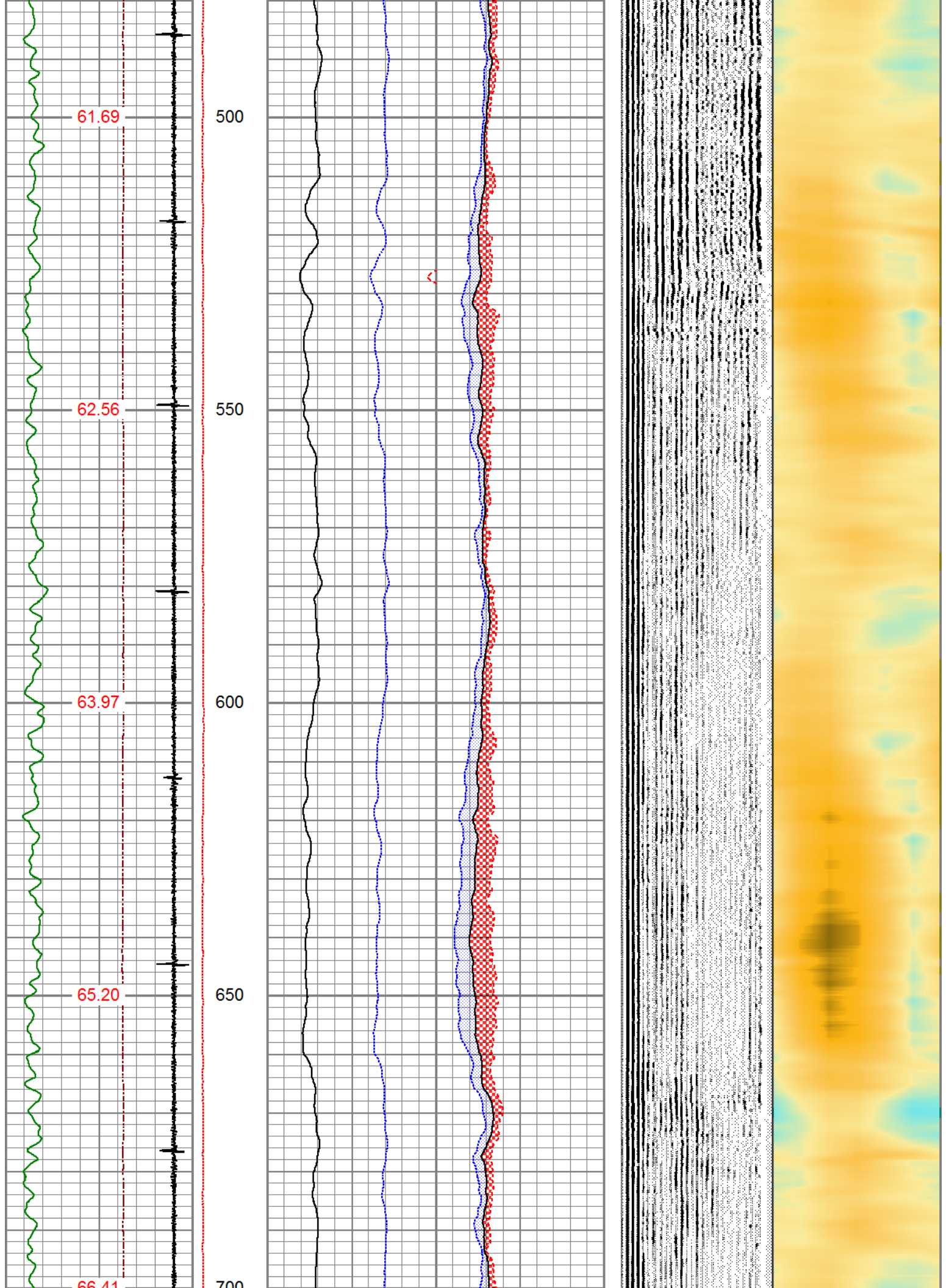
3Ft Travel Time	LTEN	3' Amplitude	Sector	VDL	1	Sector Map	6
500 (usec) 0	(lb) 0 2000	(mV) 0 100	Amplitude Average	200 (usec) 1200			
-9 Collar Locator 1		3' Amplified Amplitude X 5	0 150				
Gamma Ray		(mV) 0 20	Sector Amplitude Maximum				
0 (cps) 200		1 Bond Index 0	0 150				
TEMP			Sector Amplitude Minimum				
(degF)			0 150				

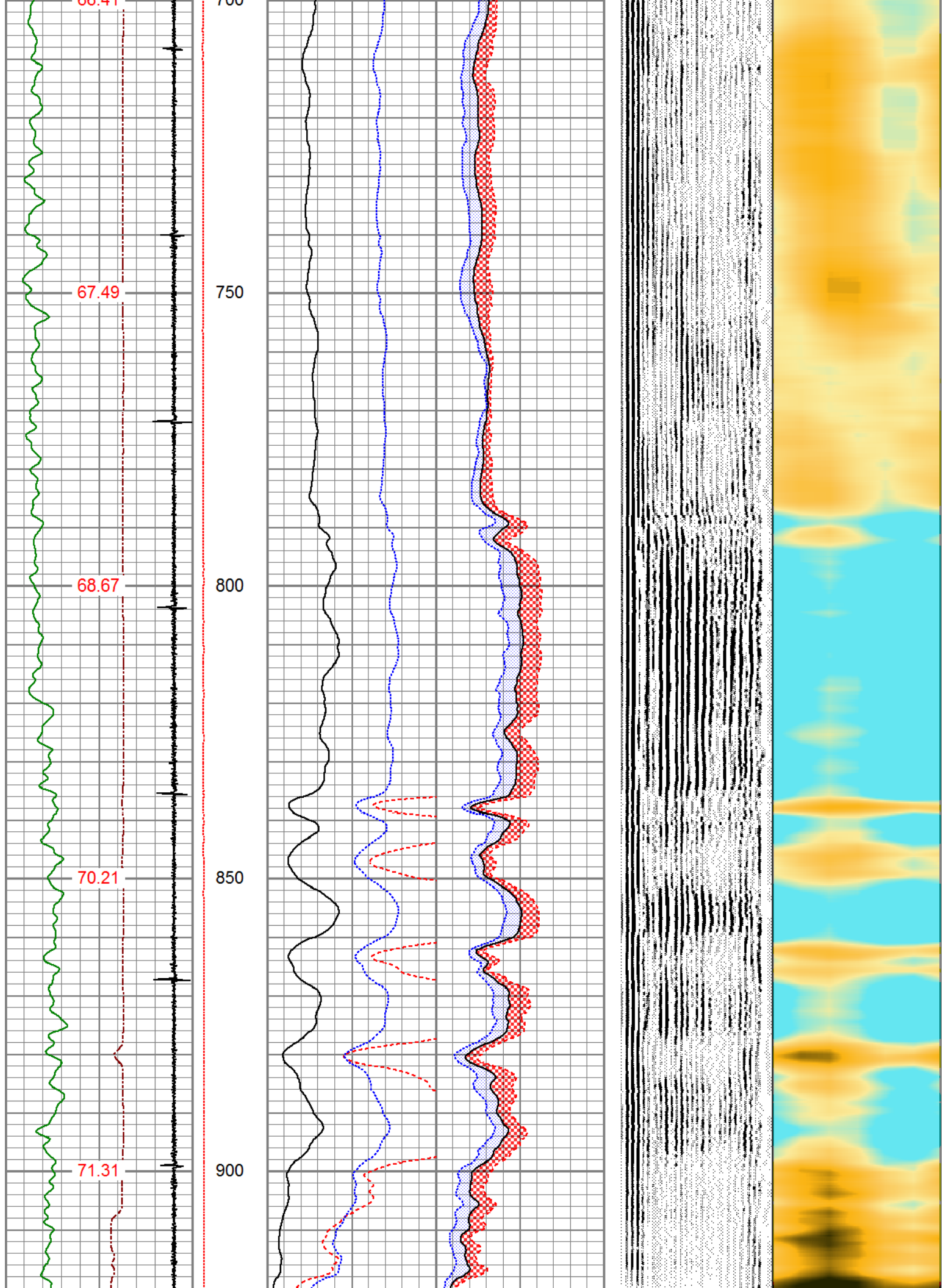


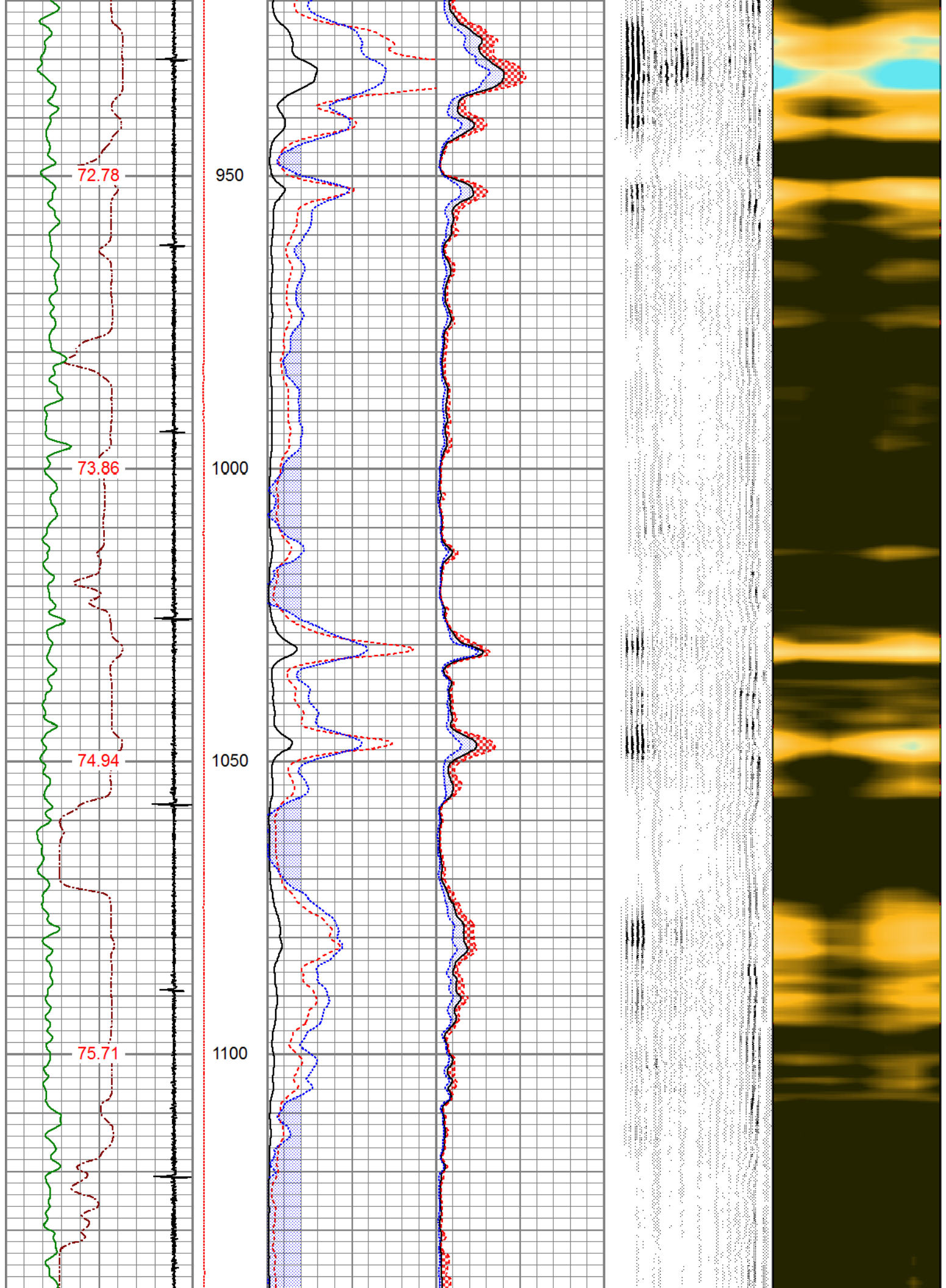




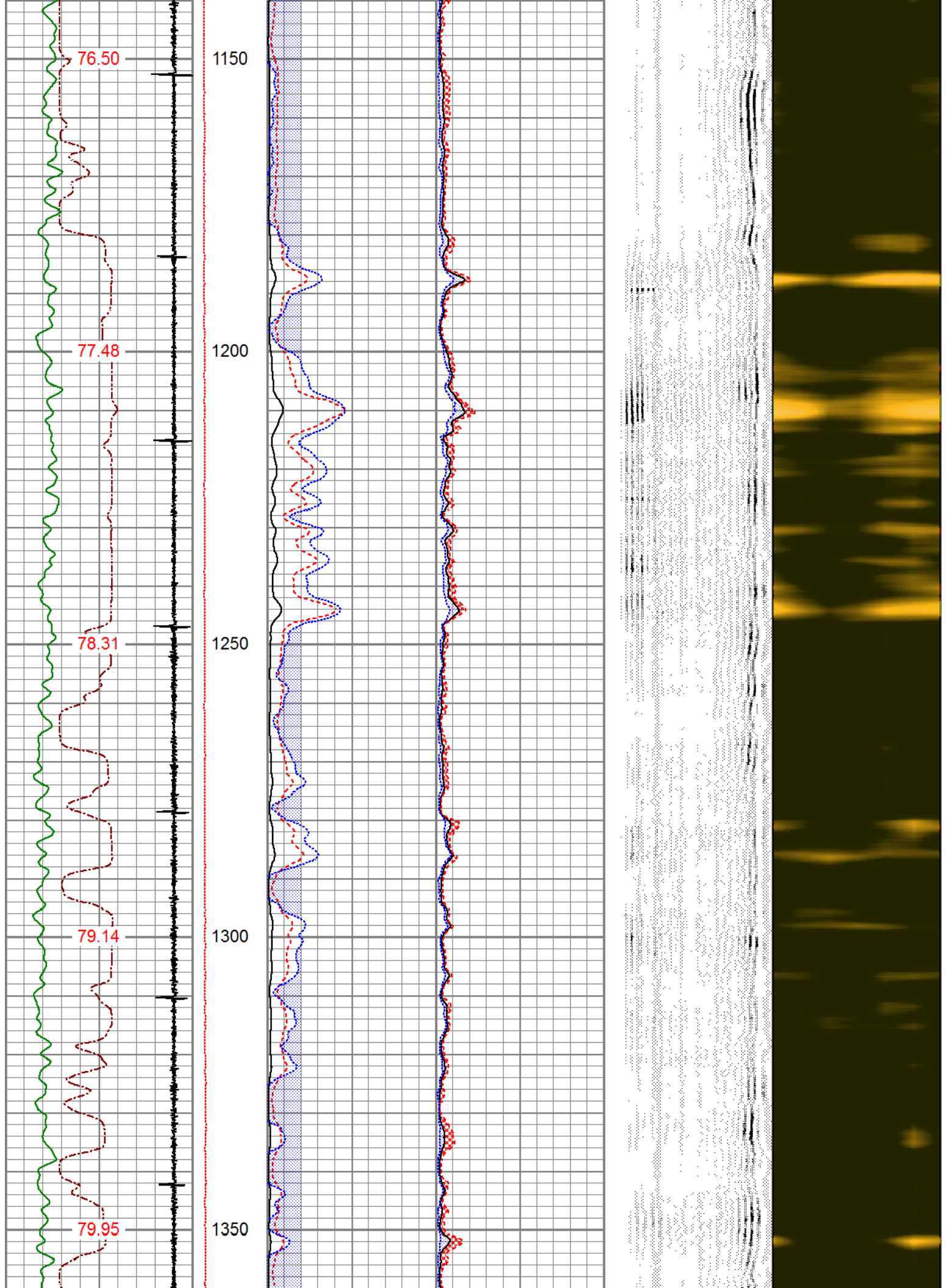


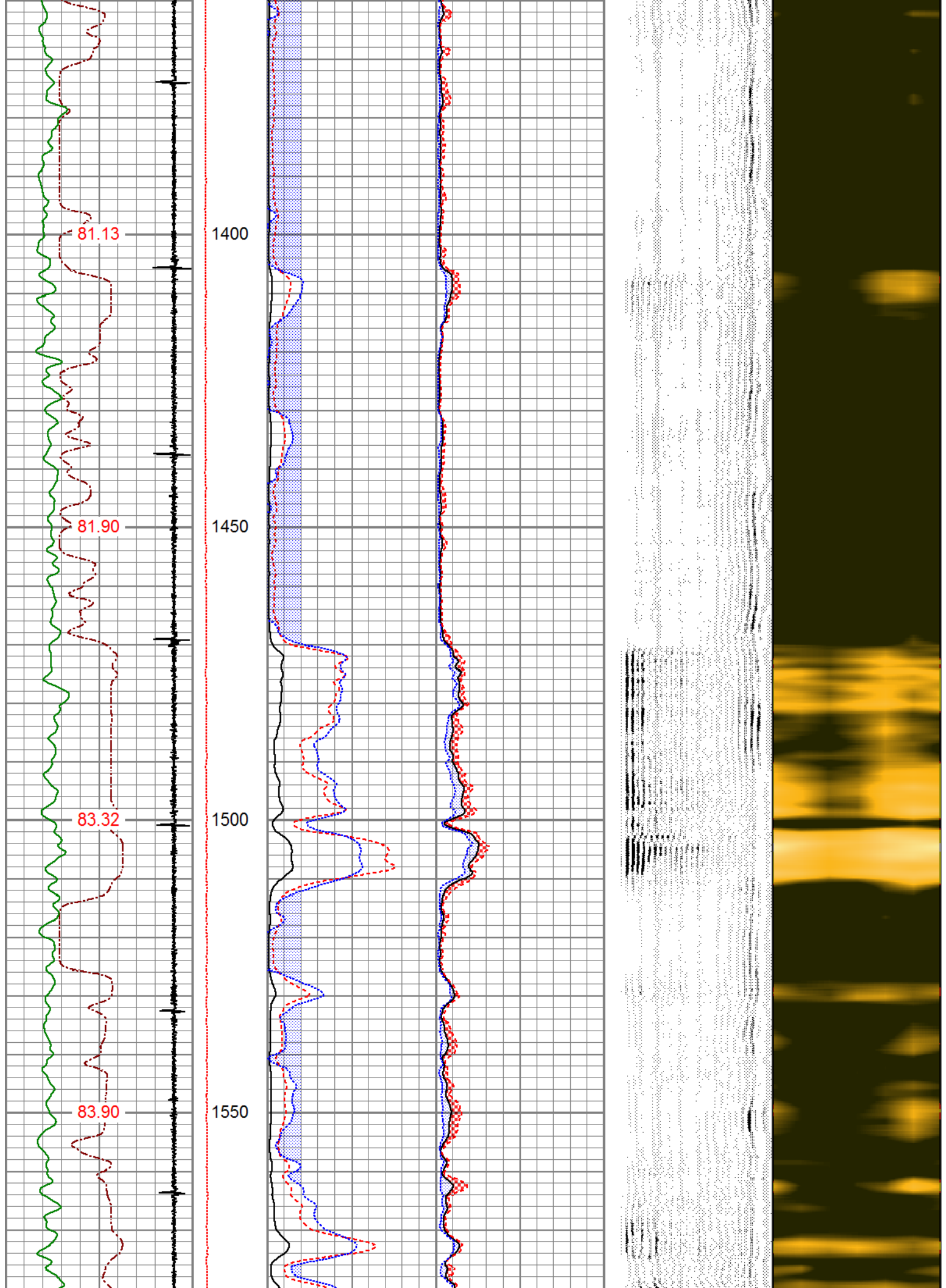


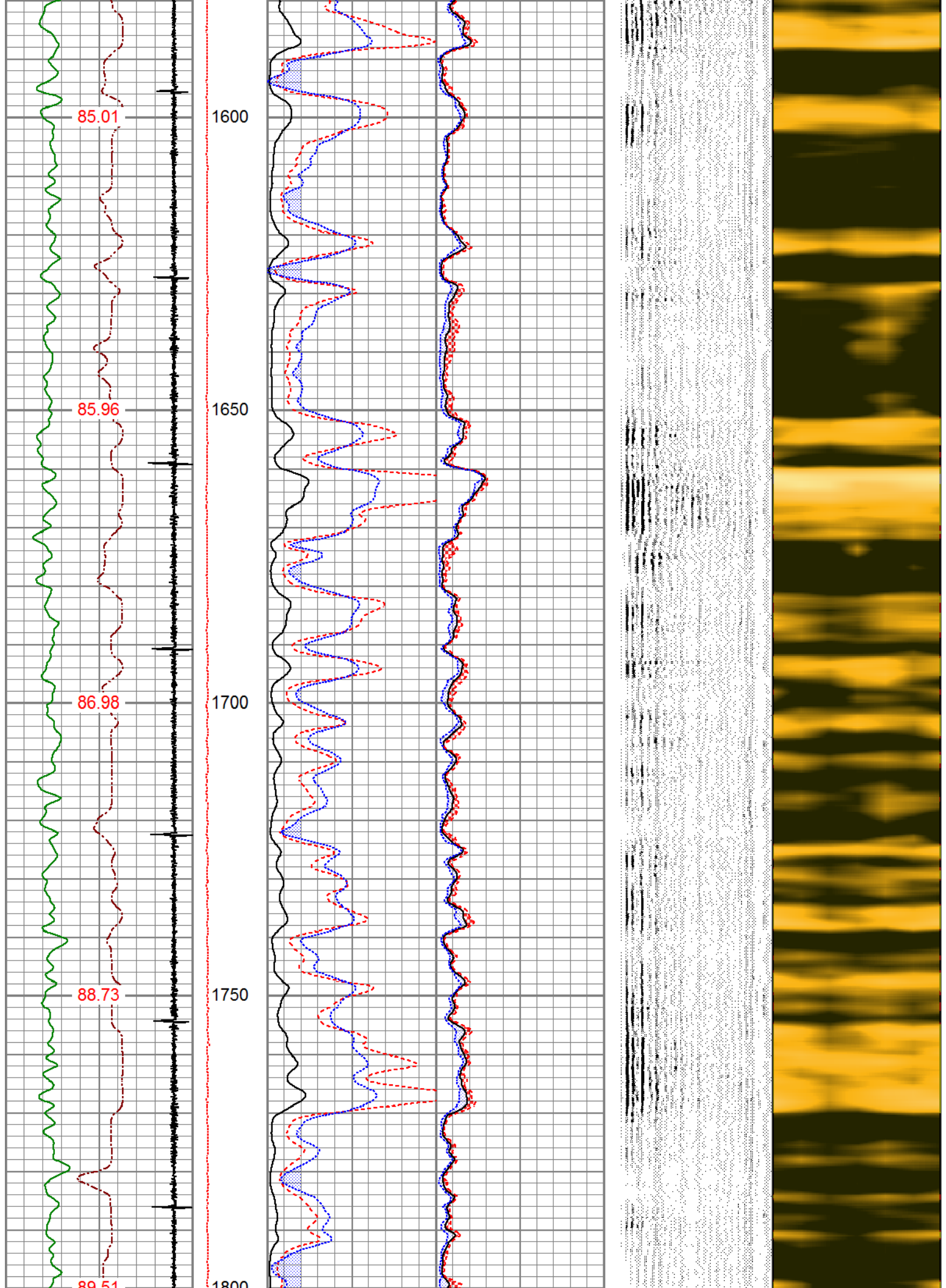




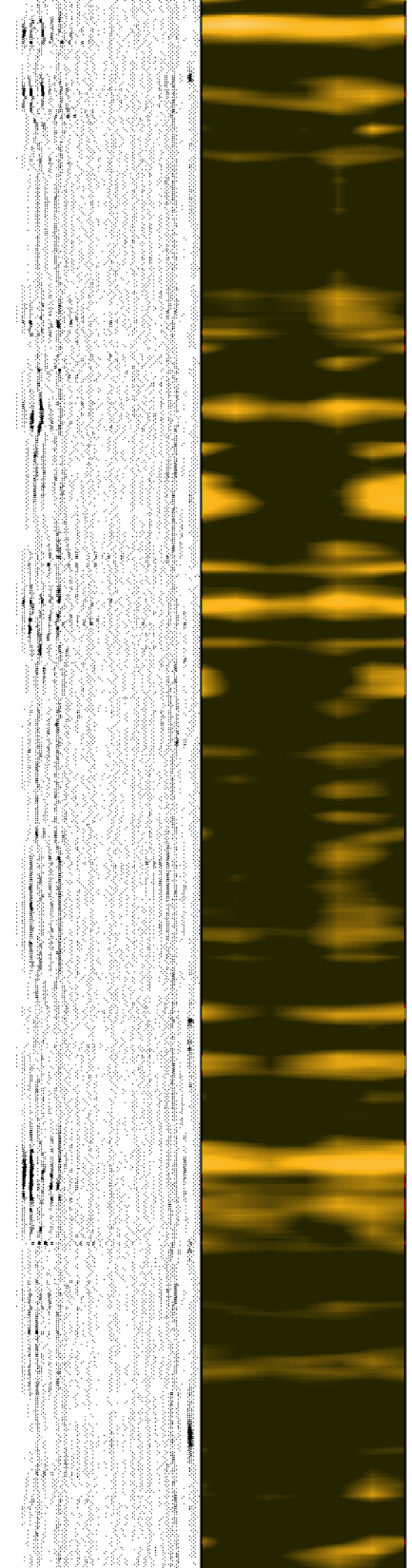
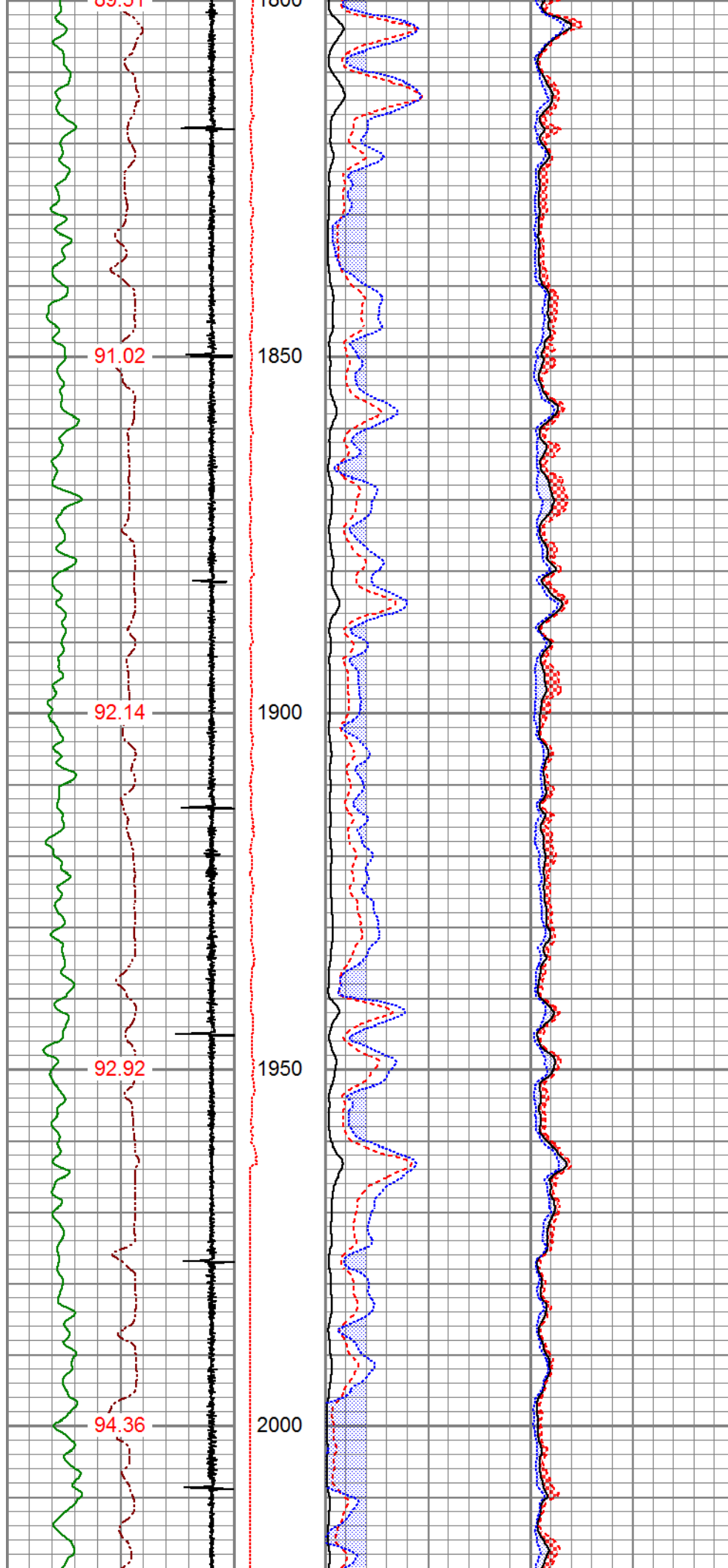




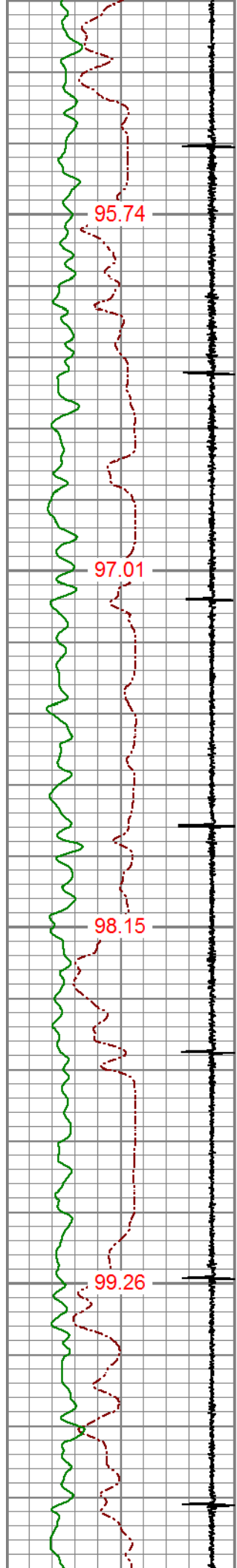










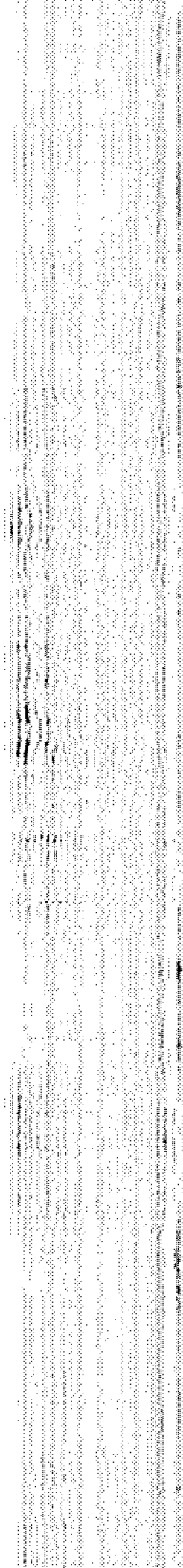
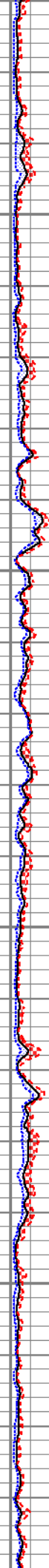
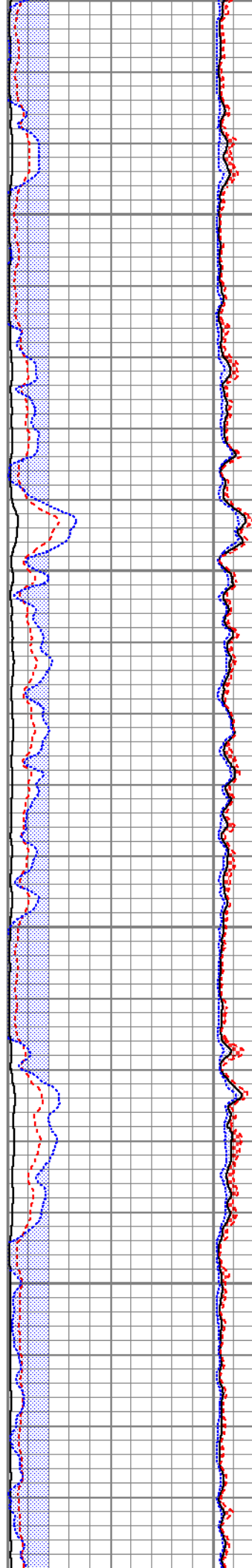


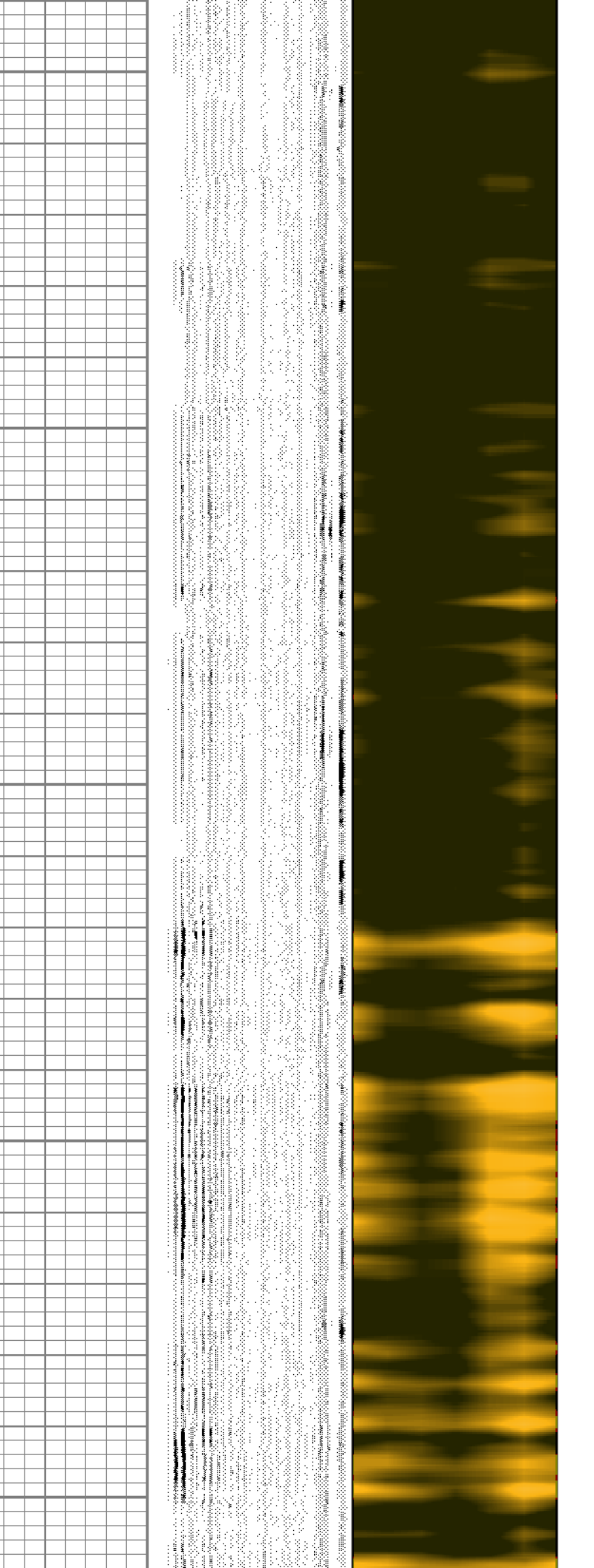
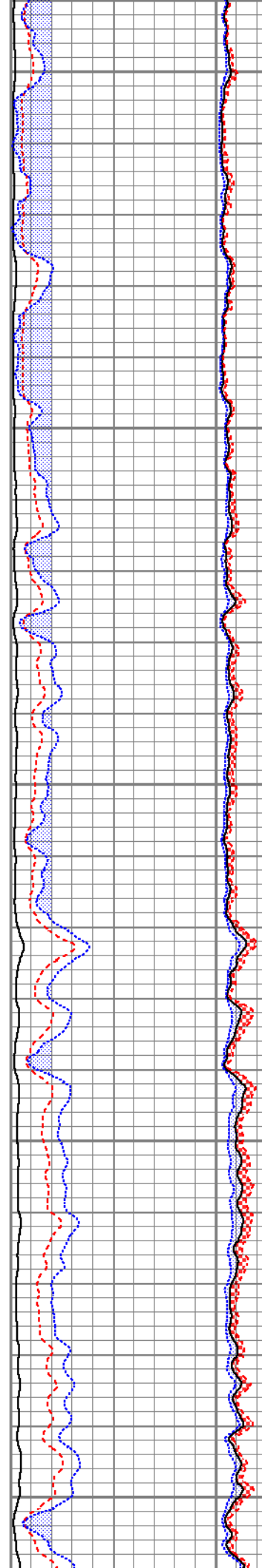
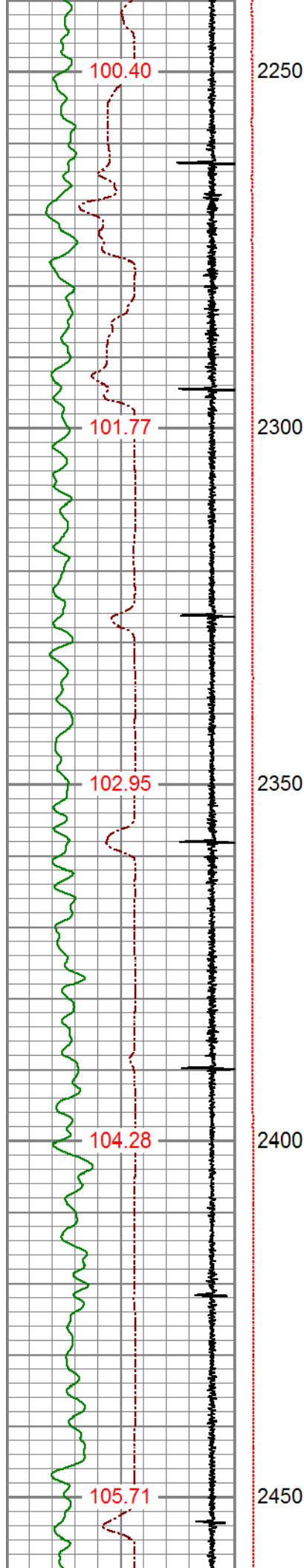
2050

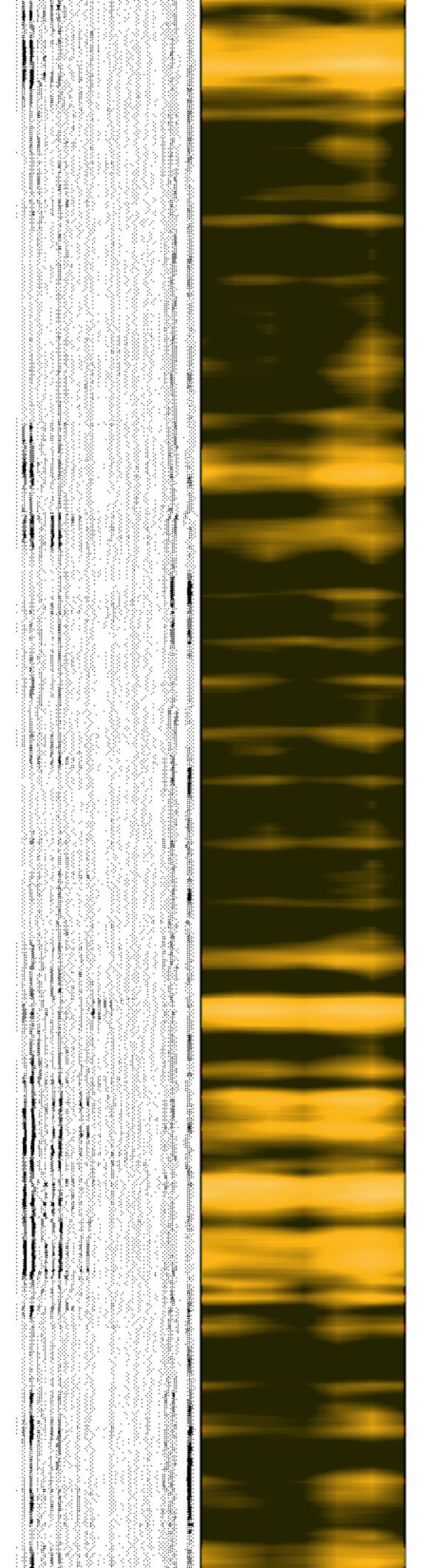
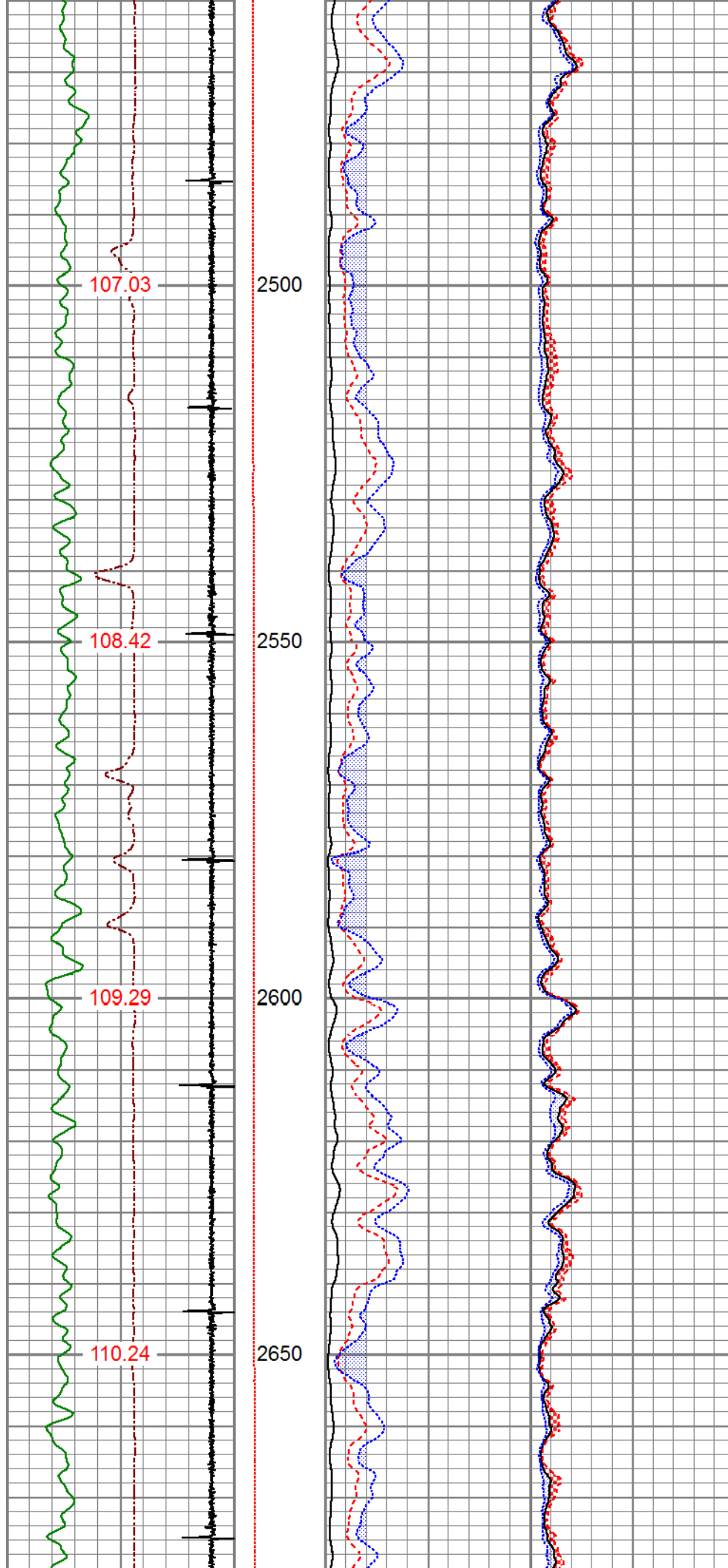
2100

2150

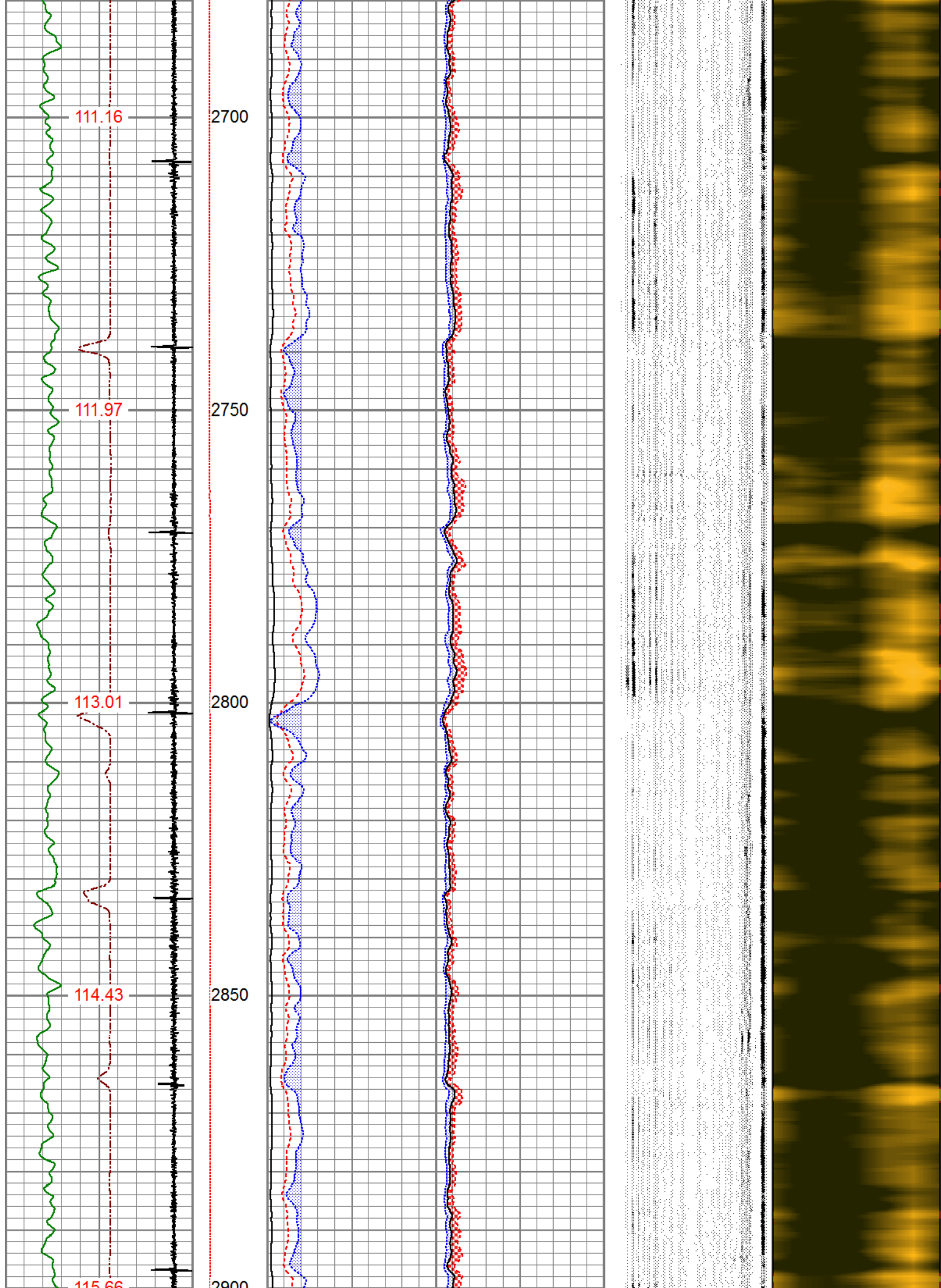
2200



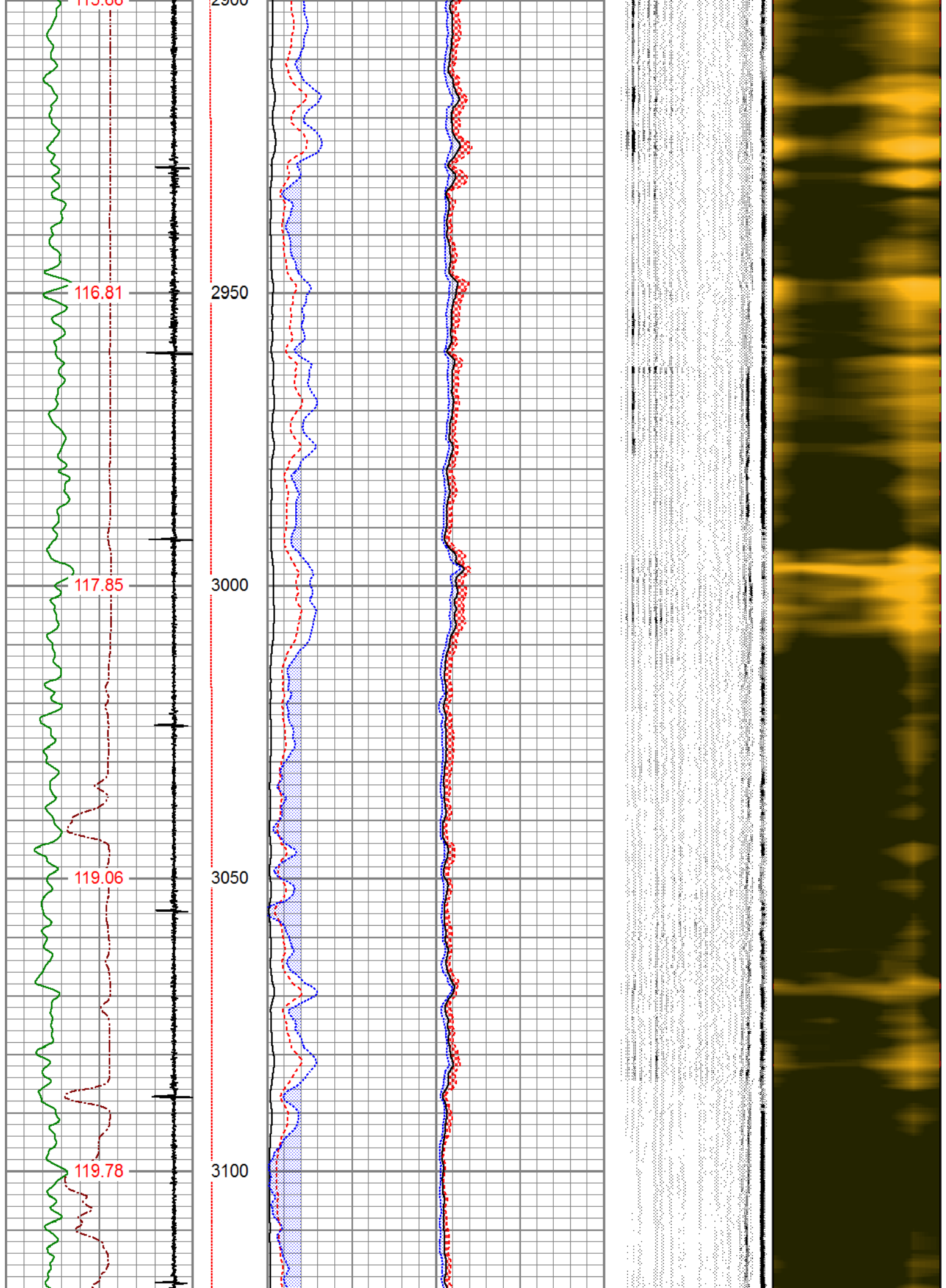


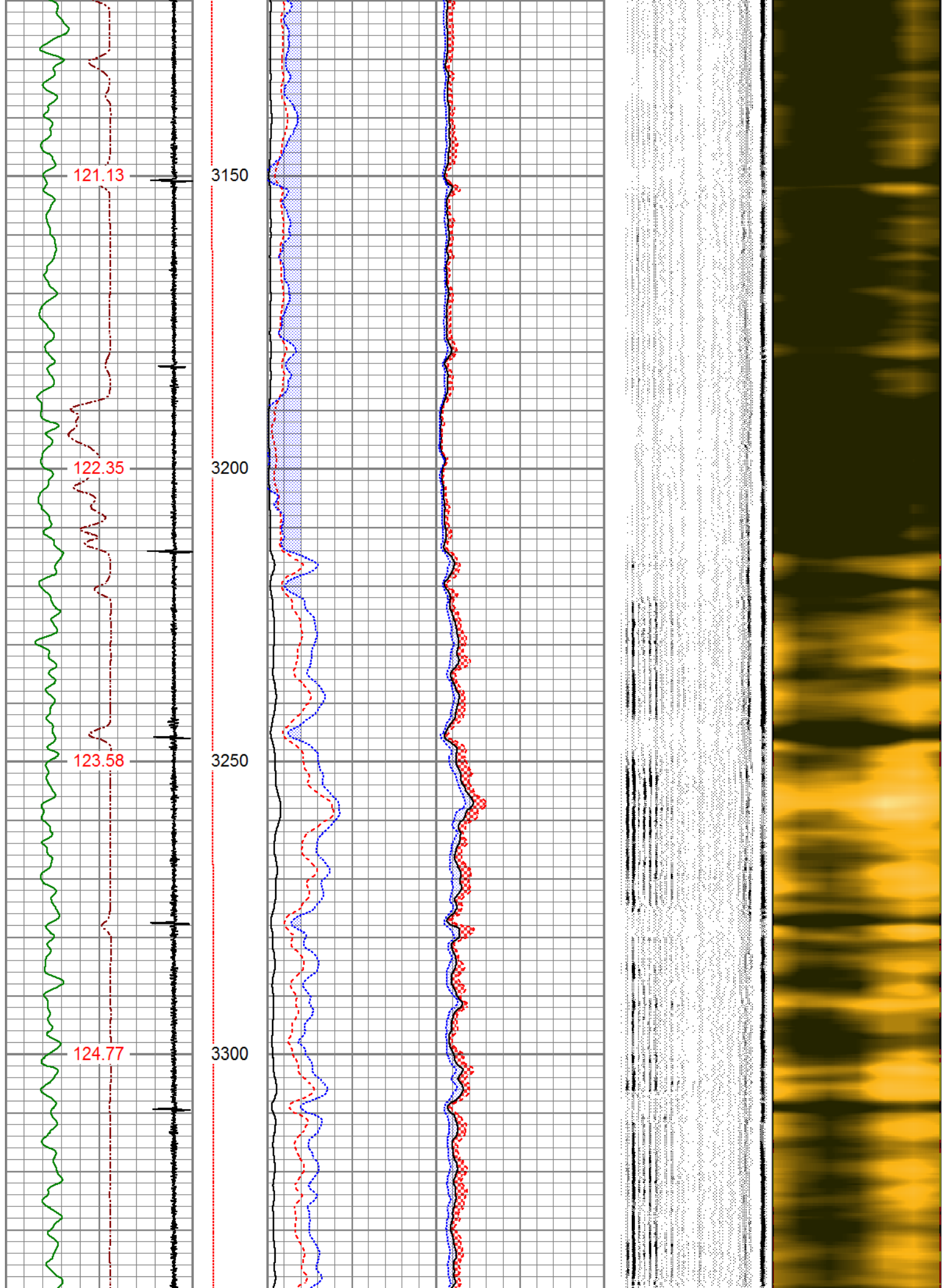


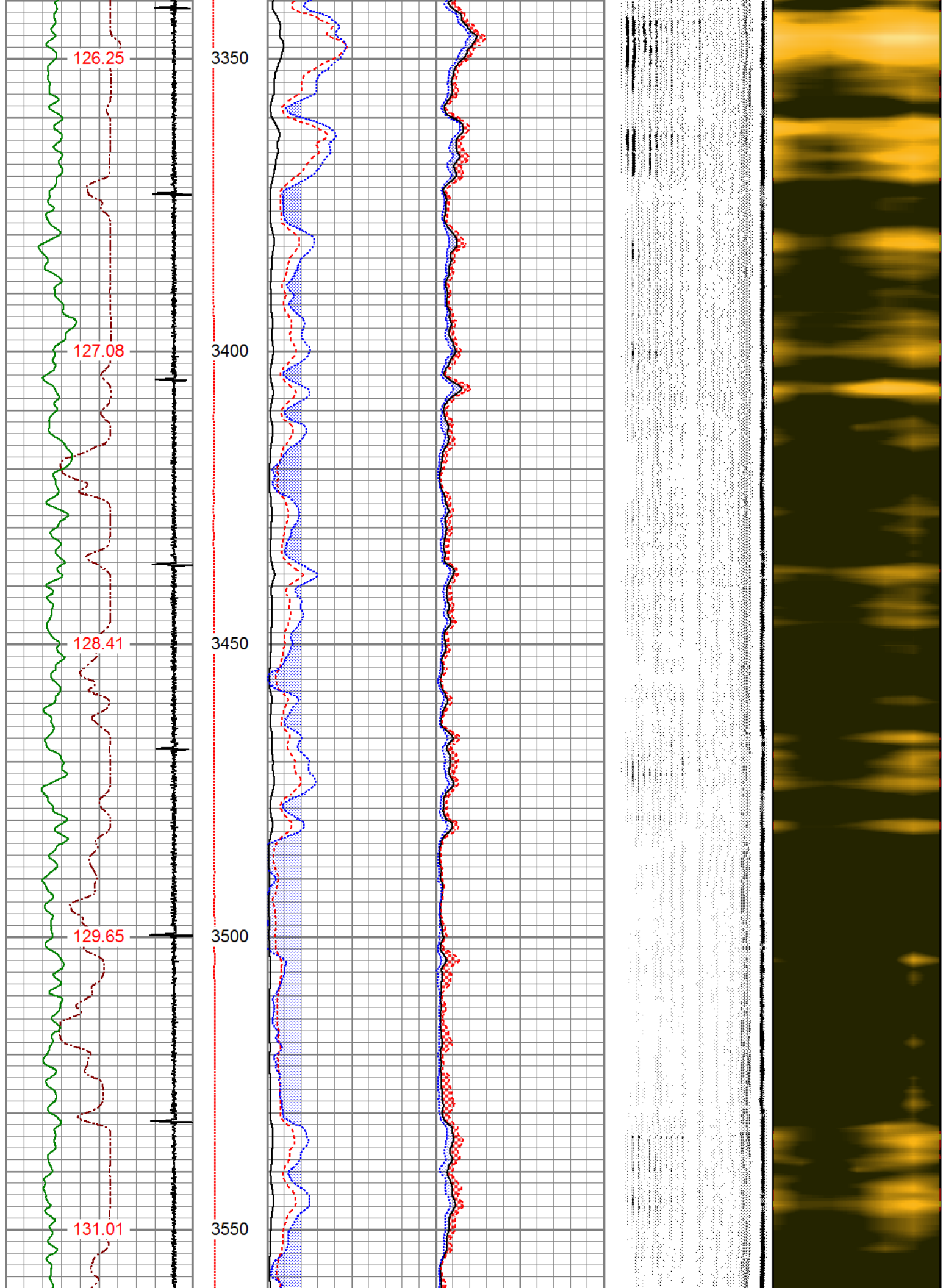




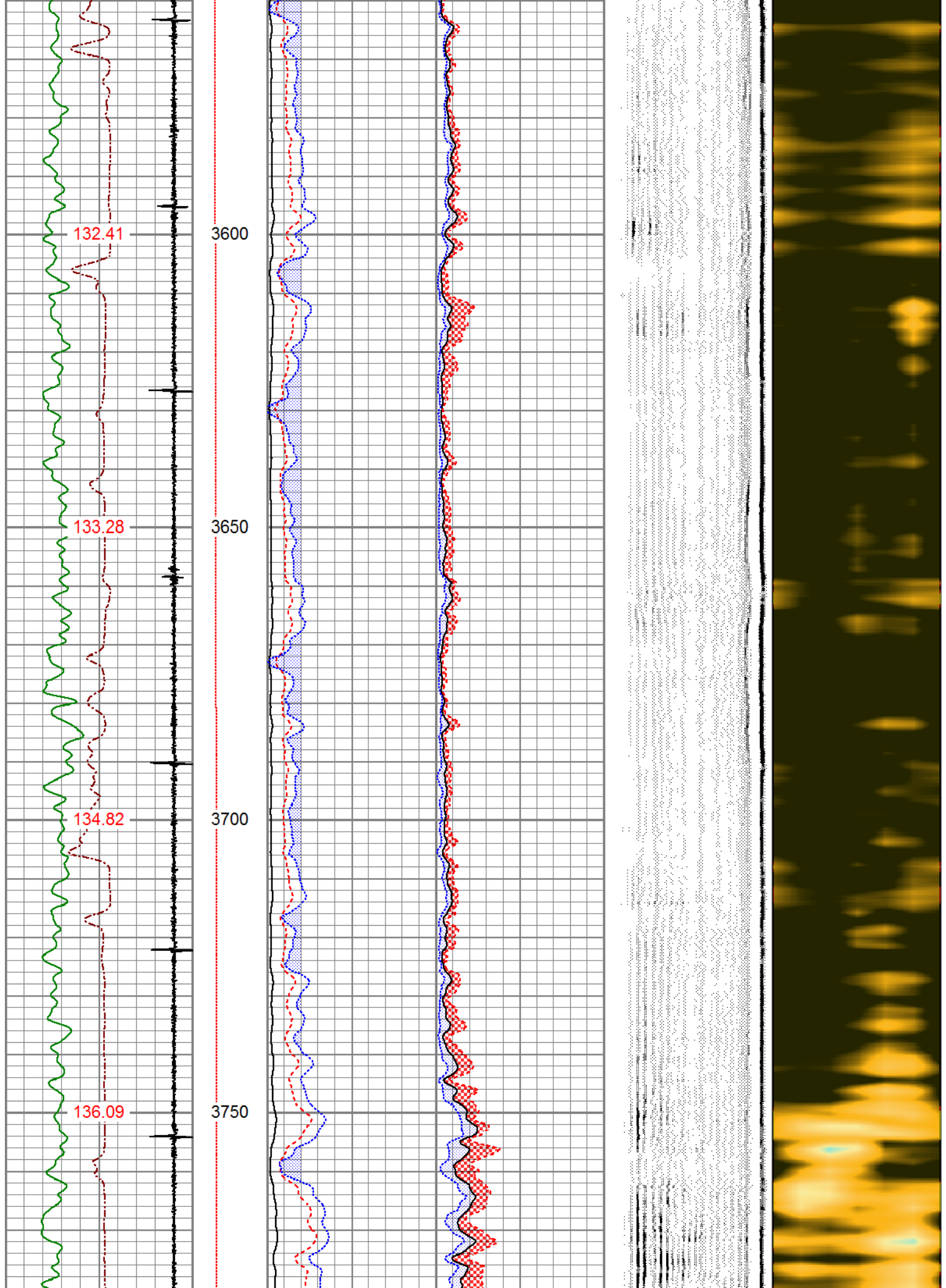




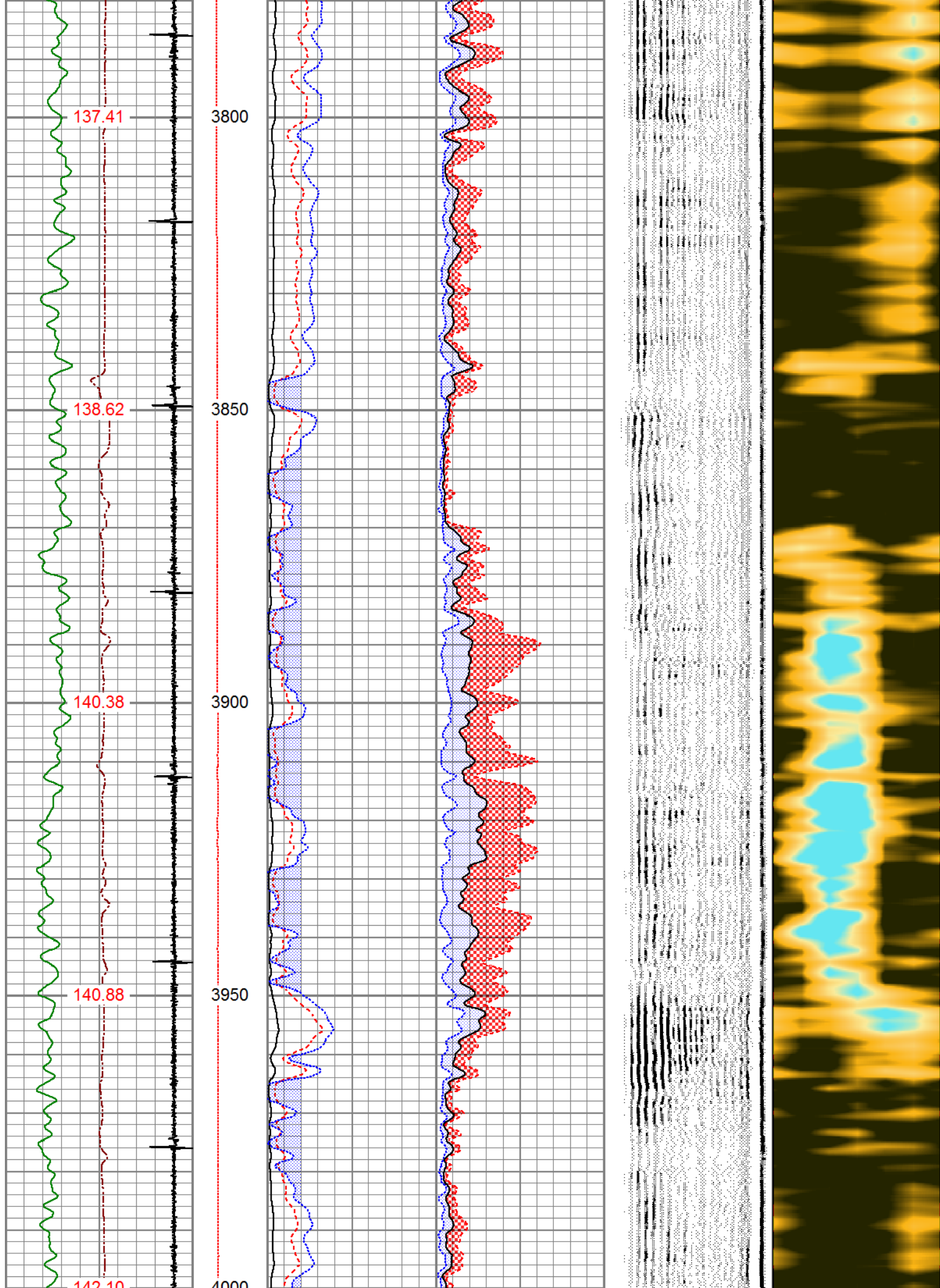


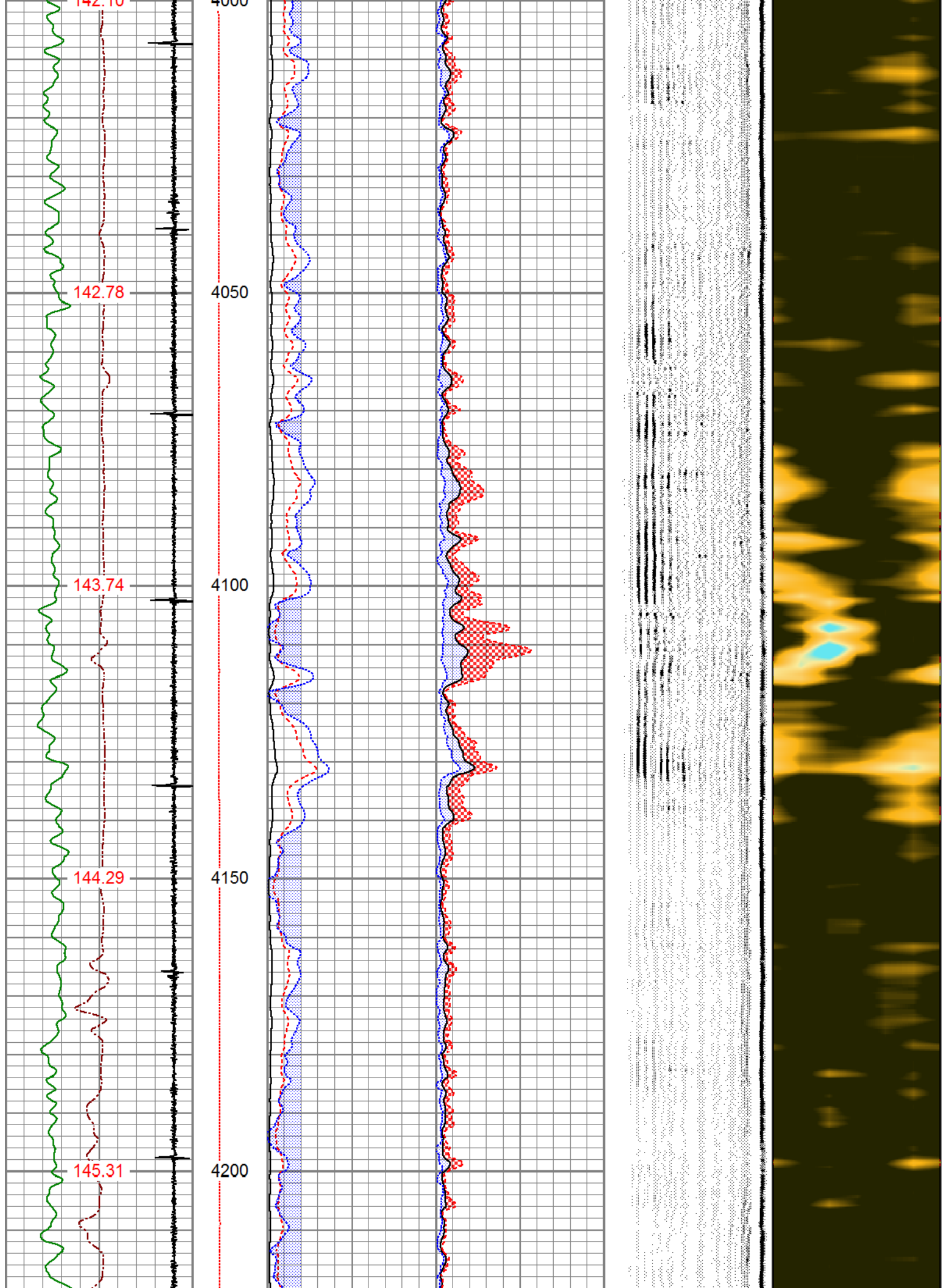


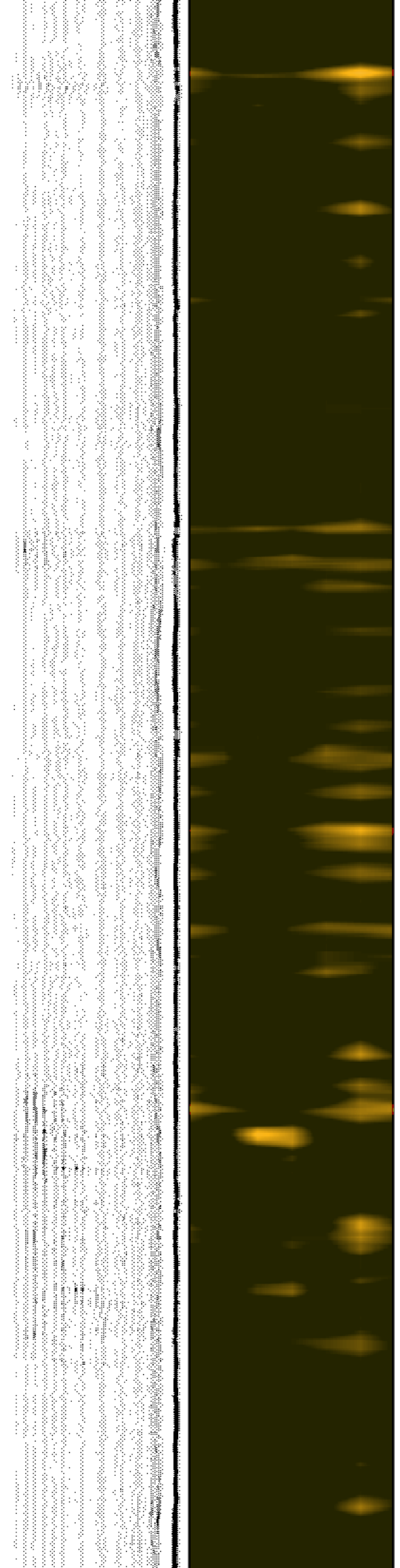
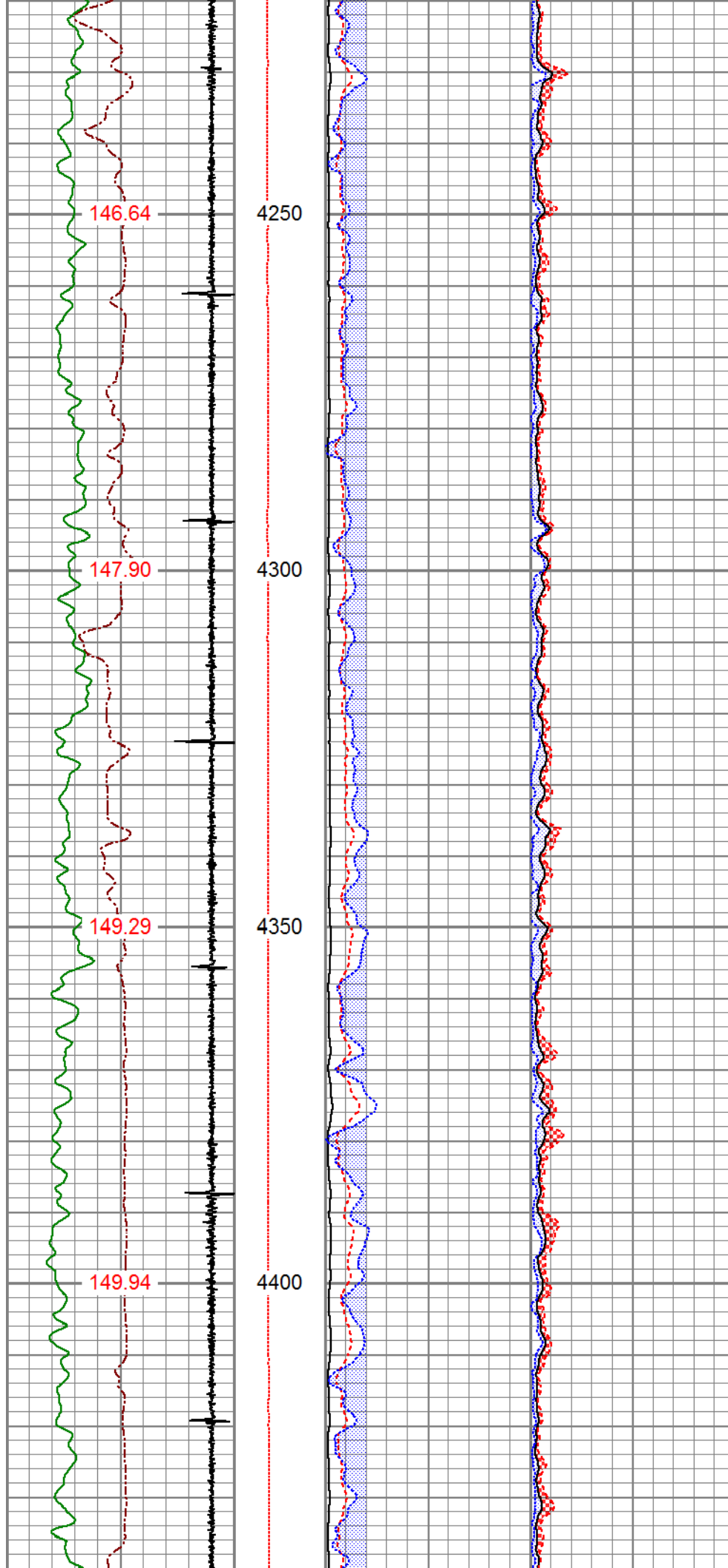




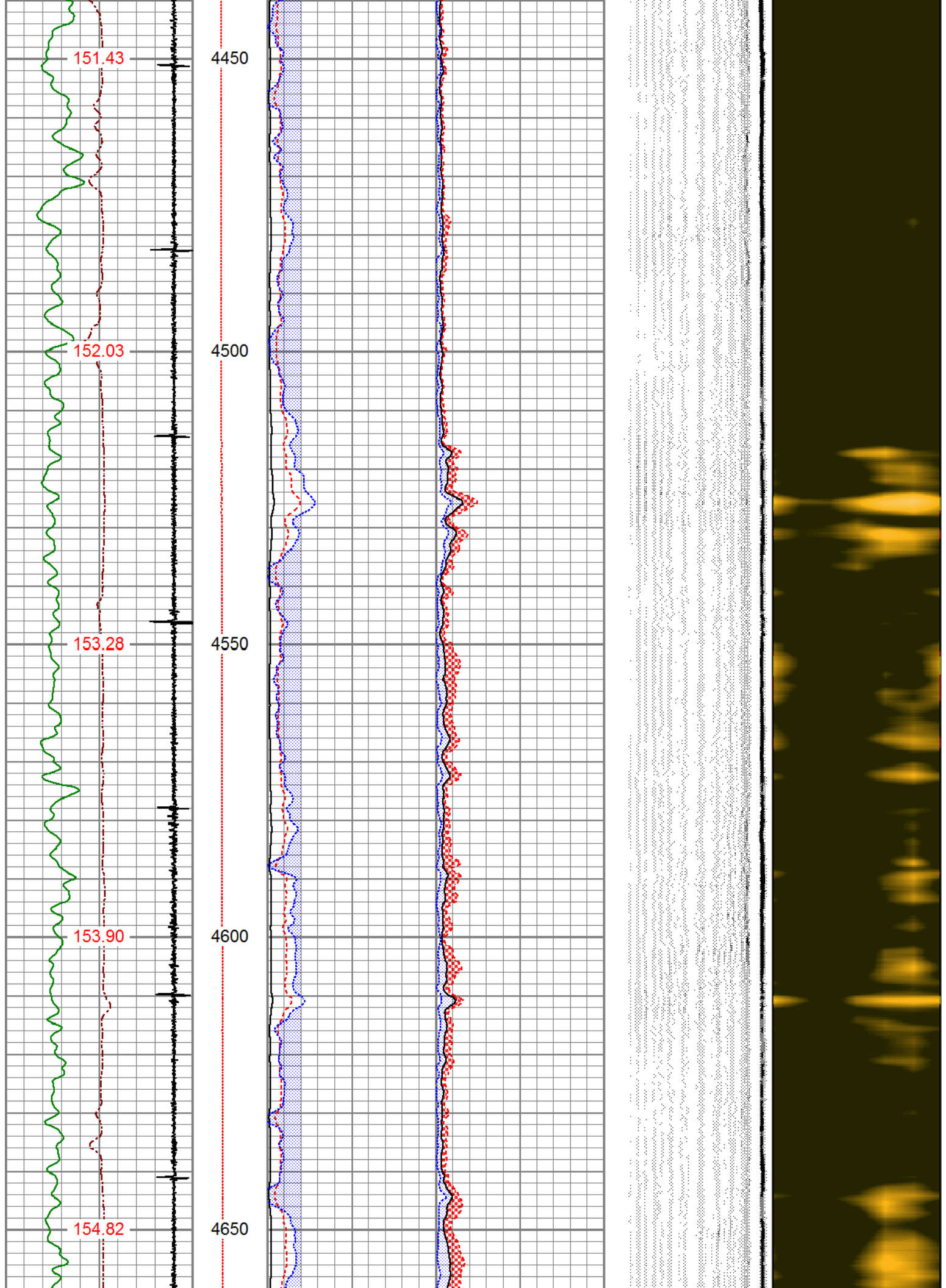




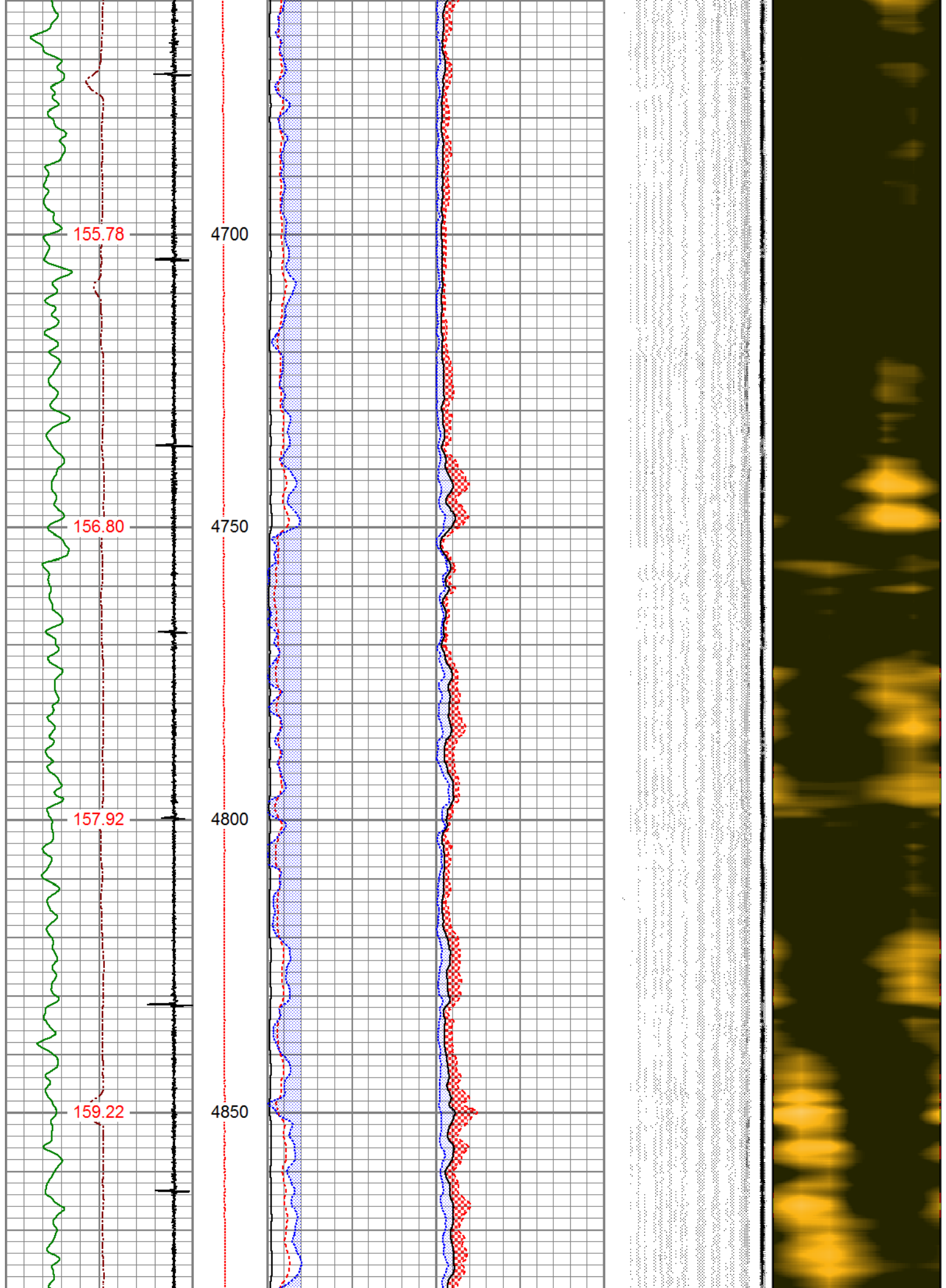


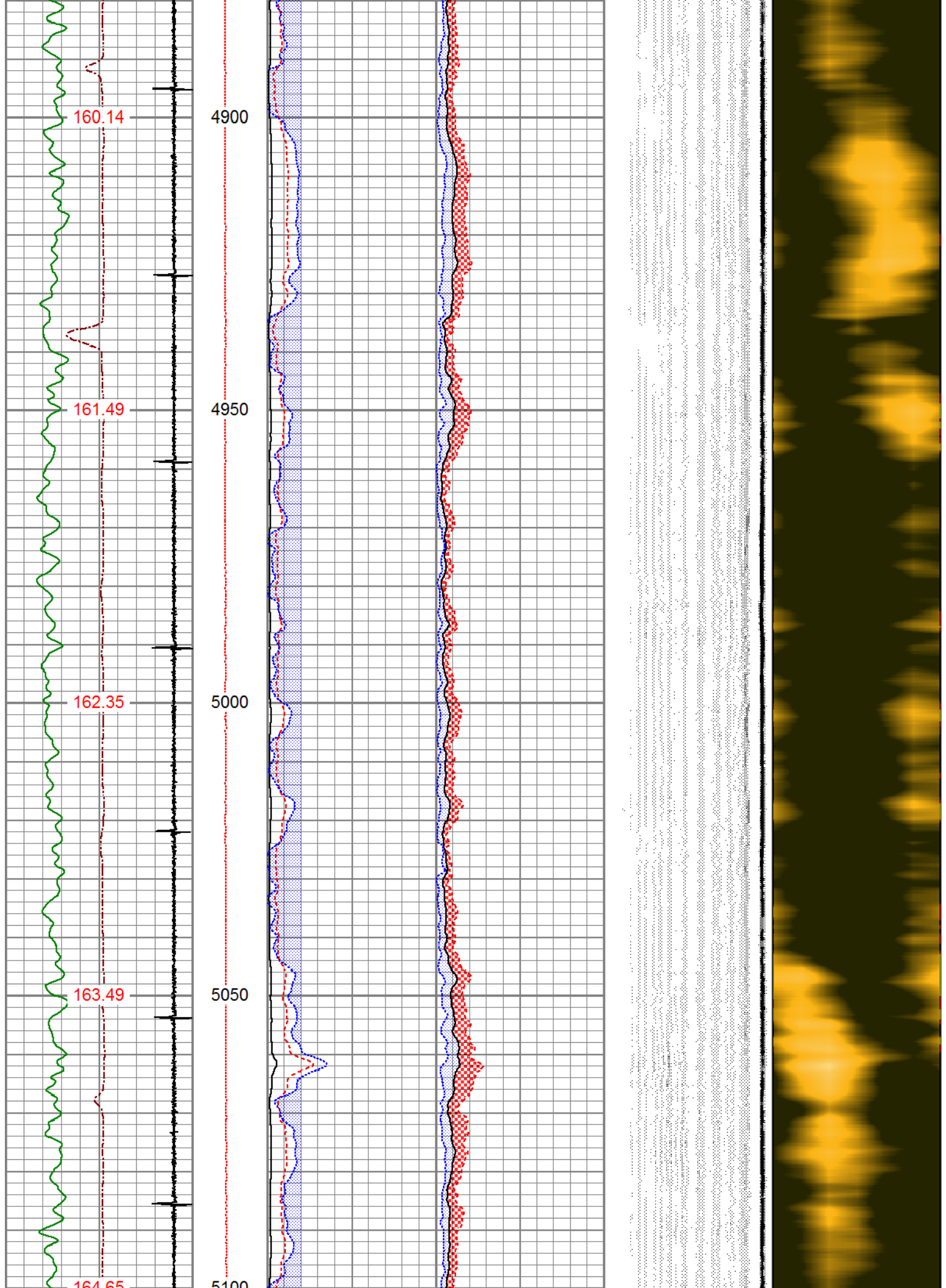


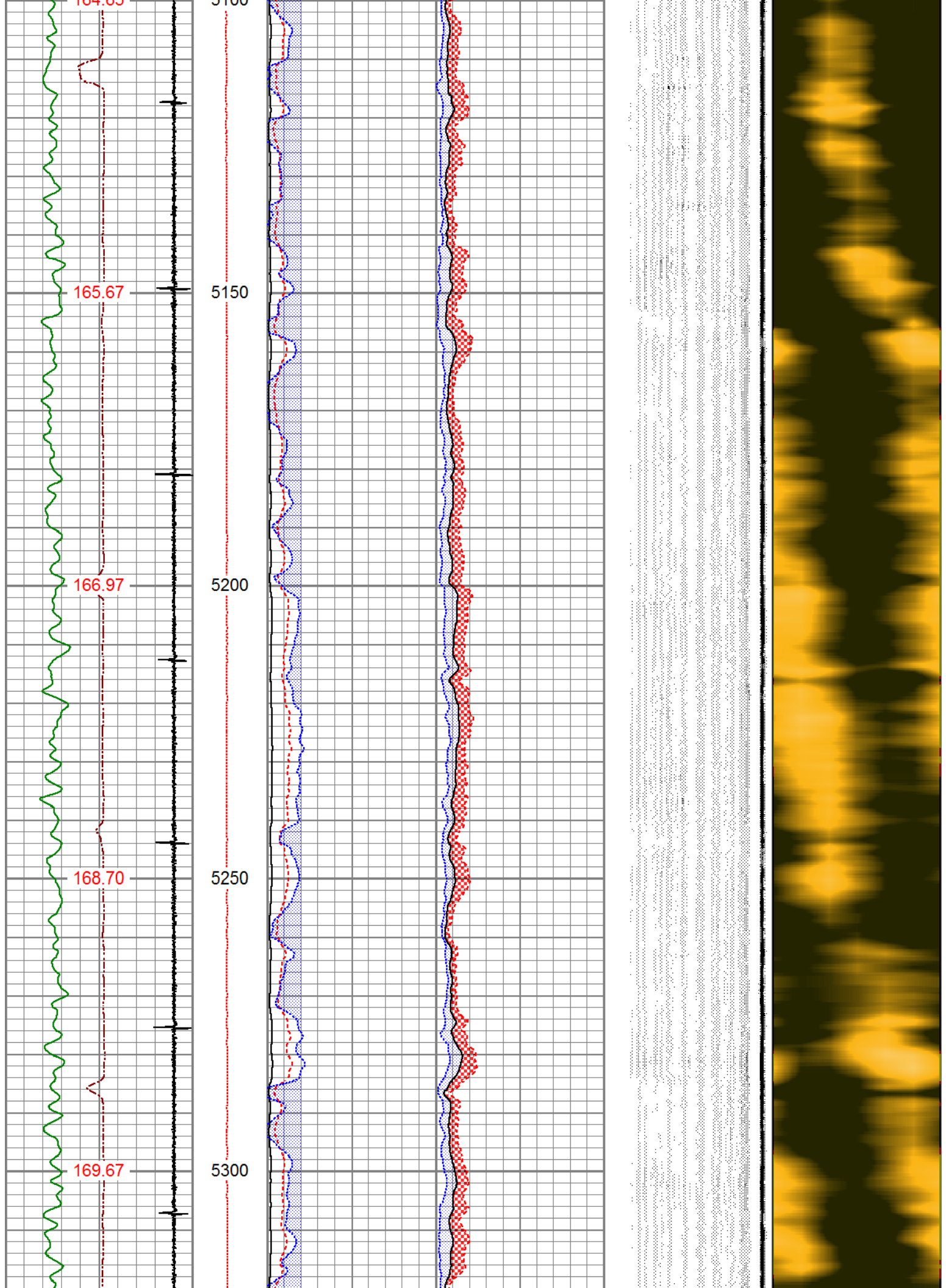




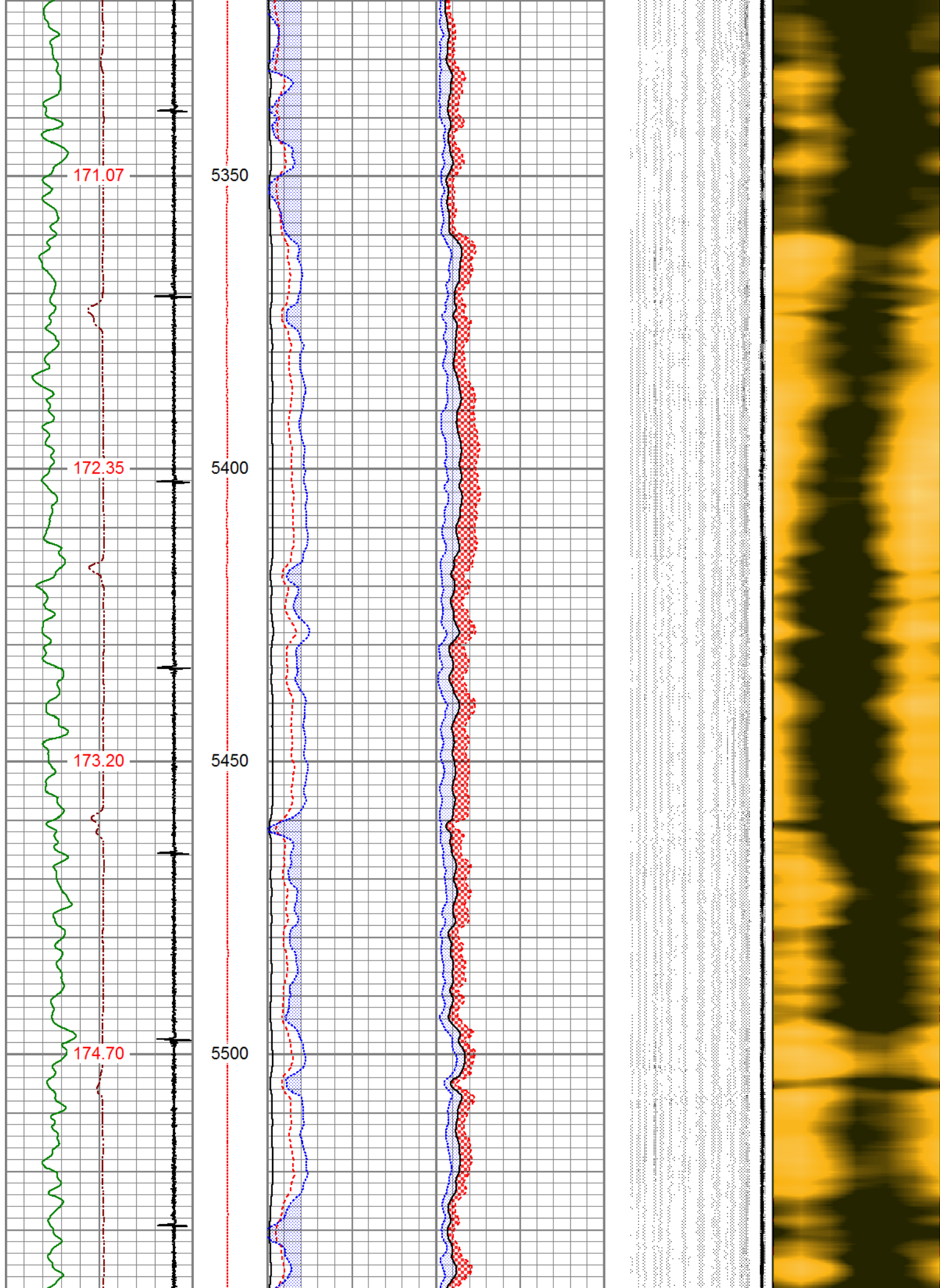




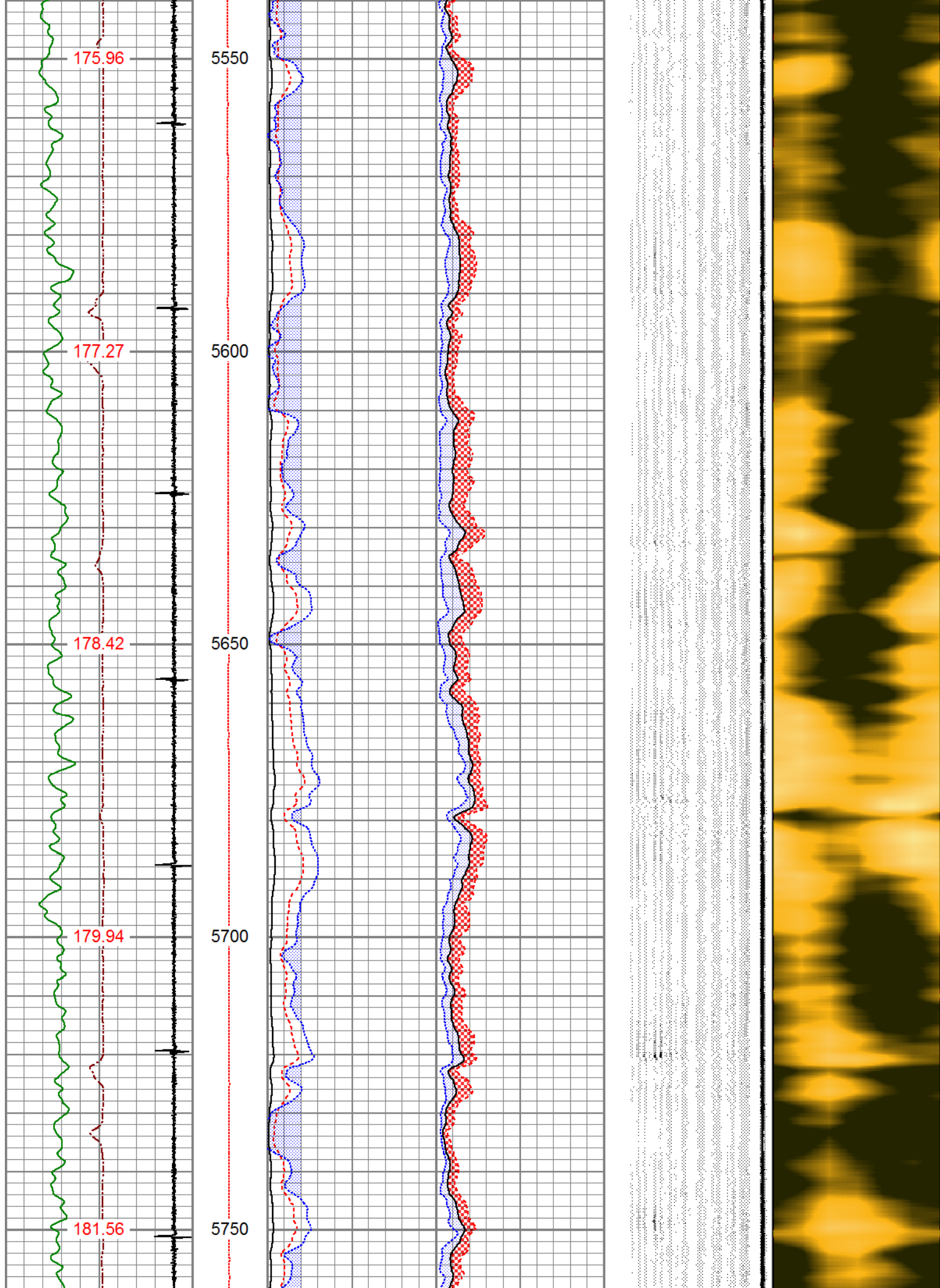


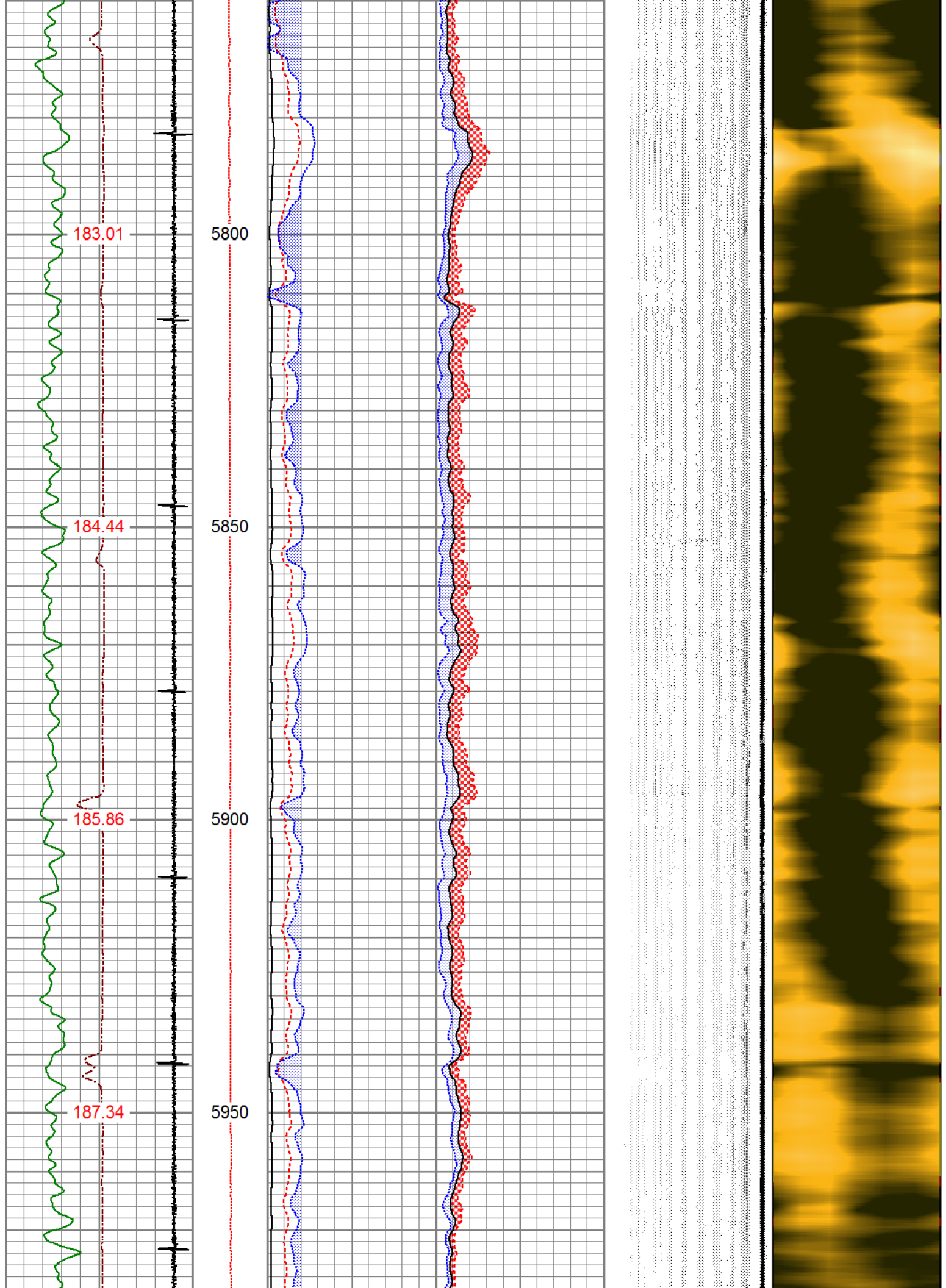


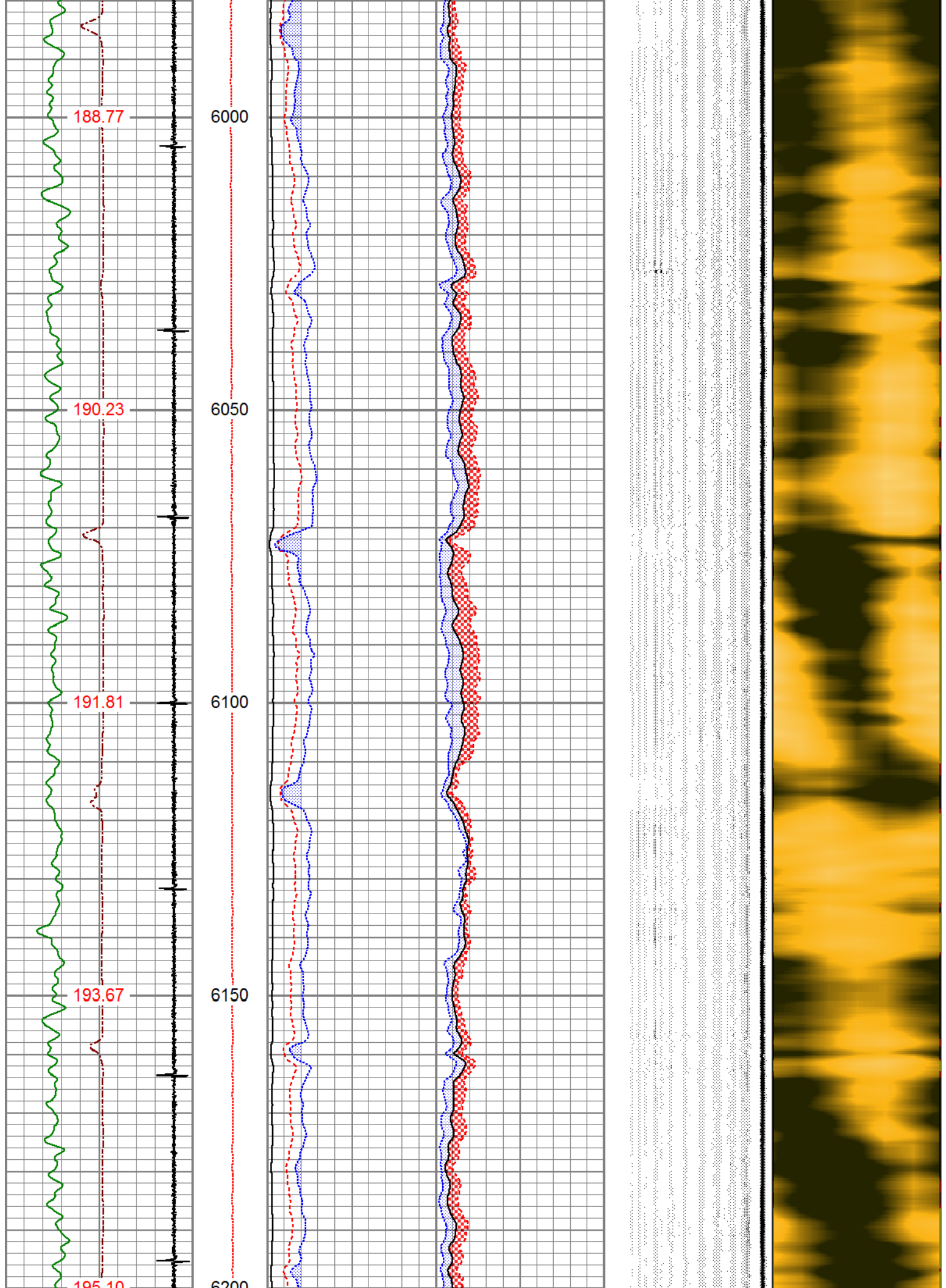




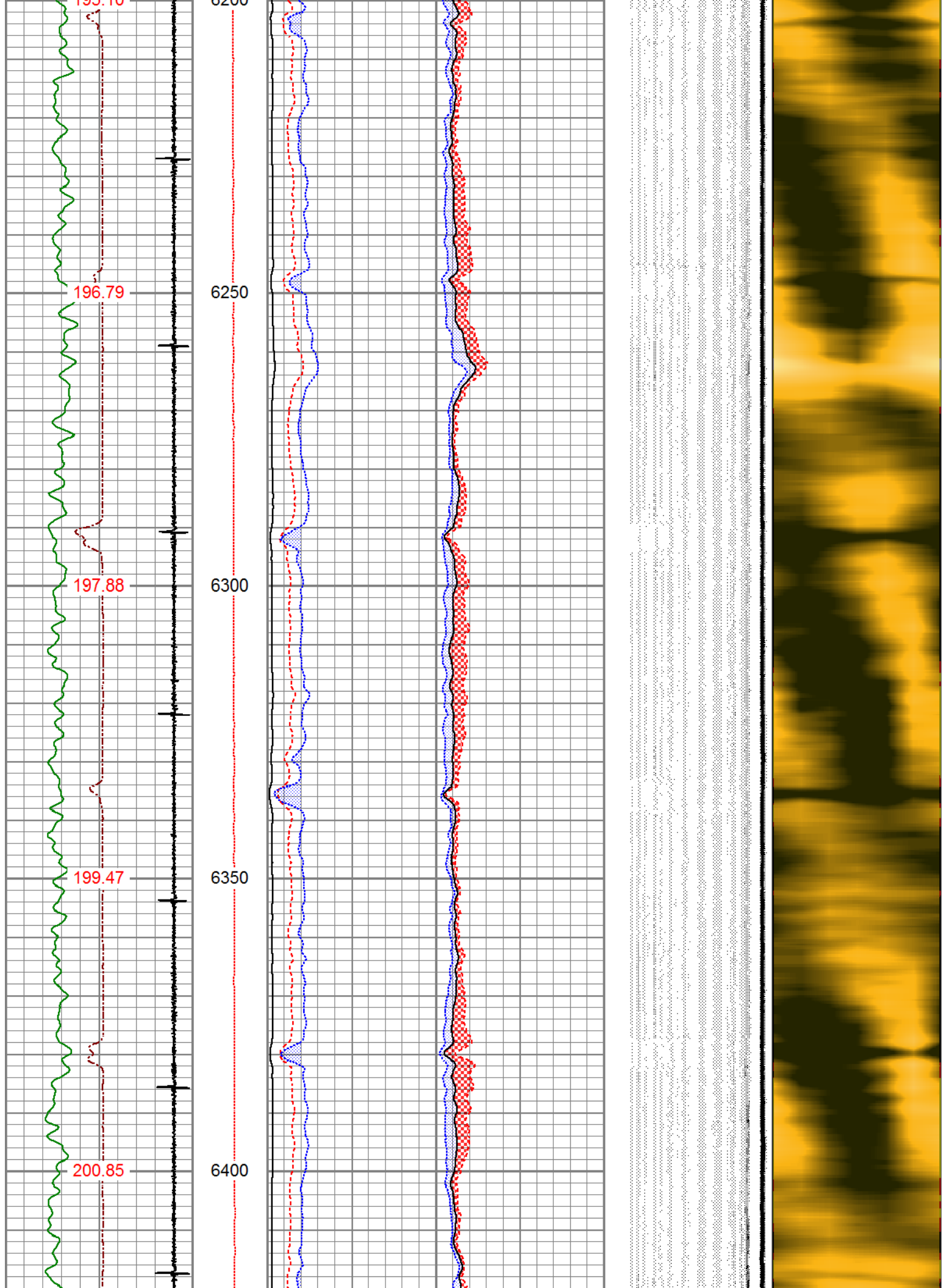




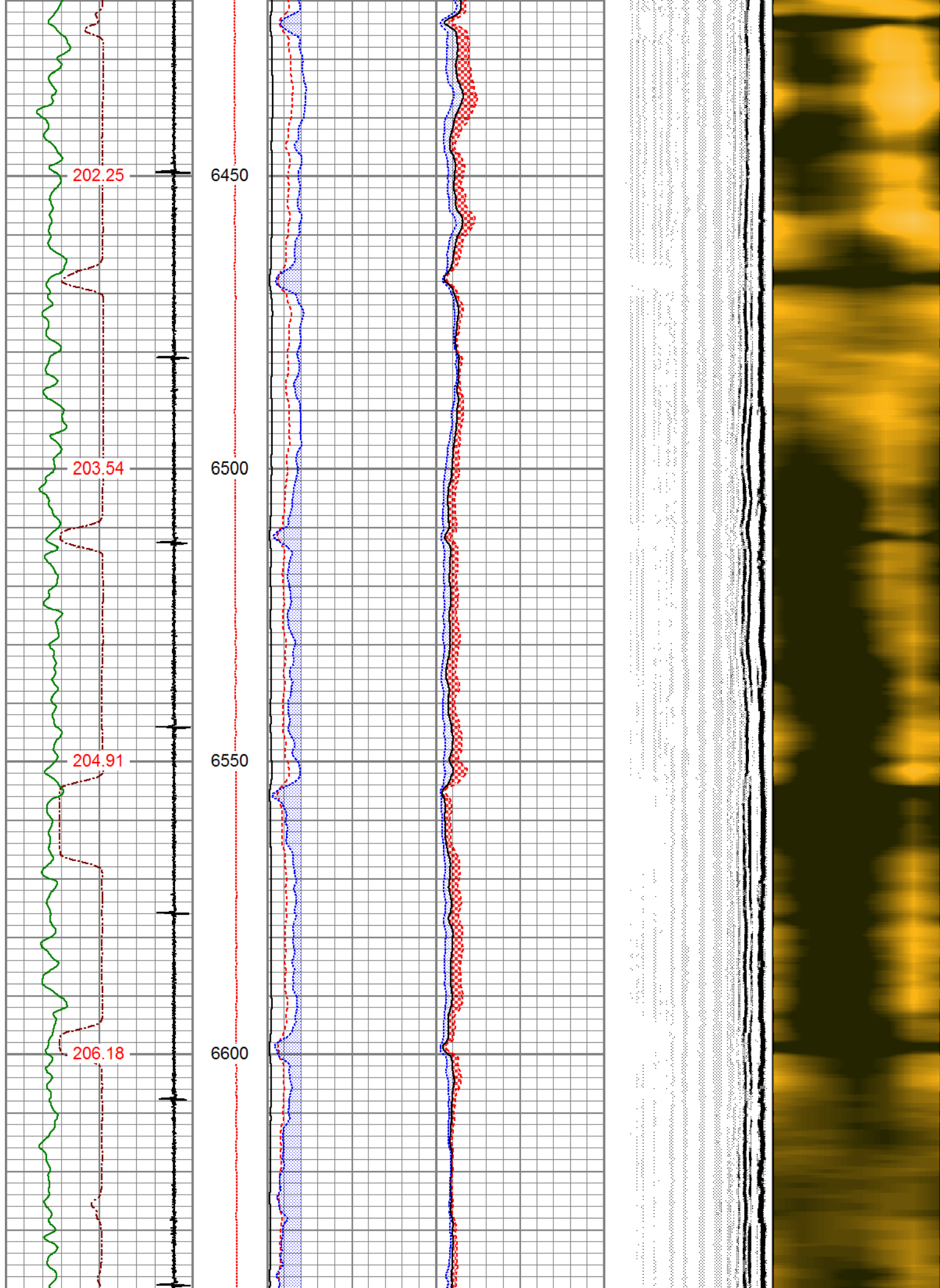


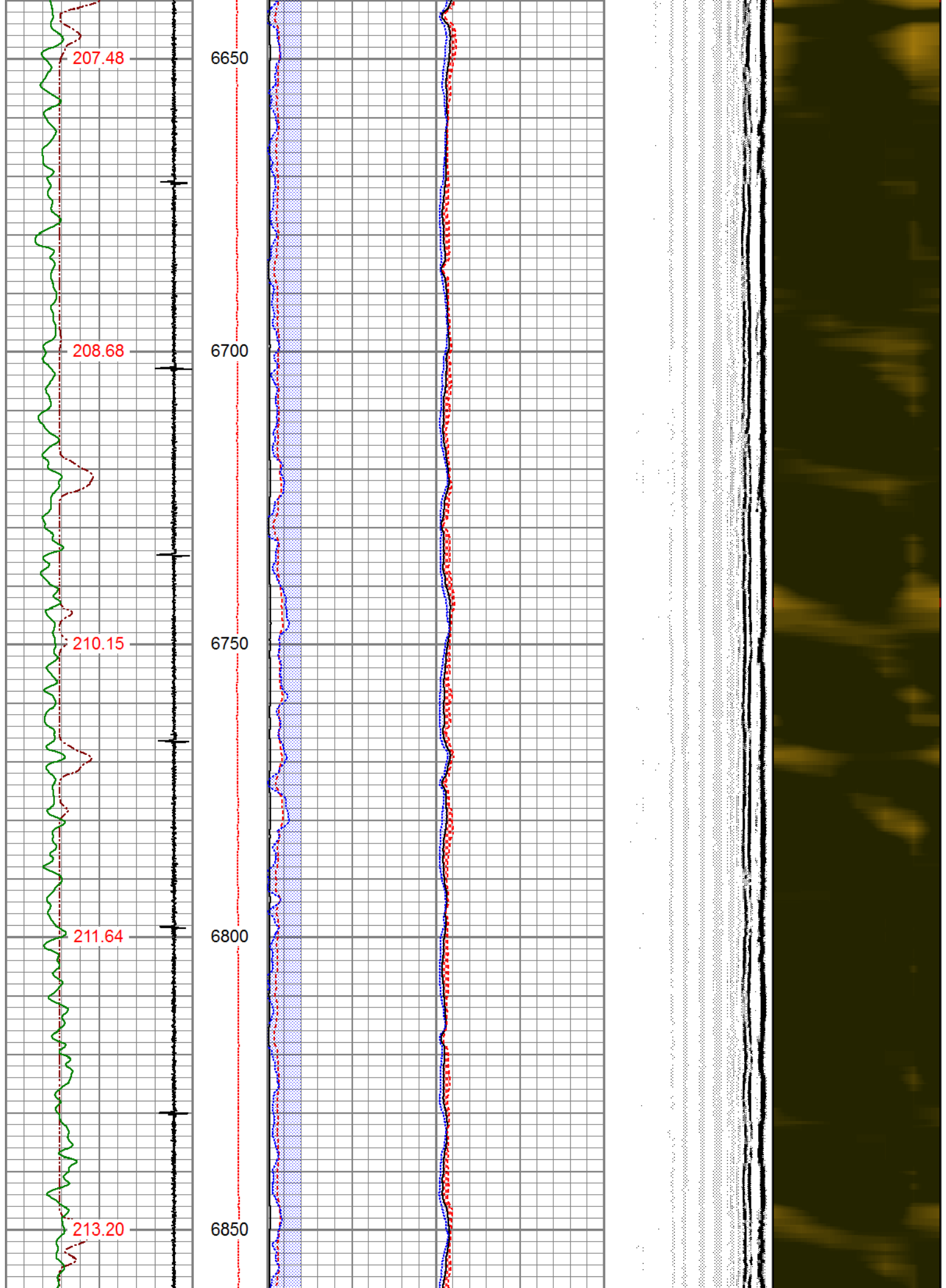


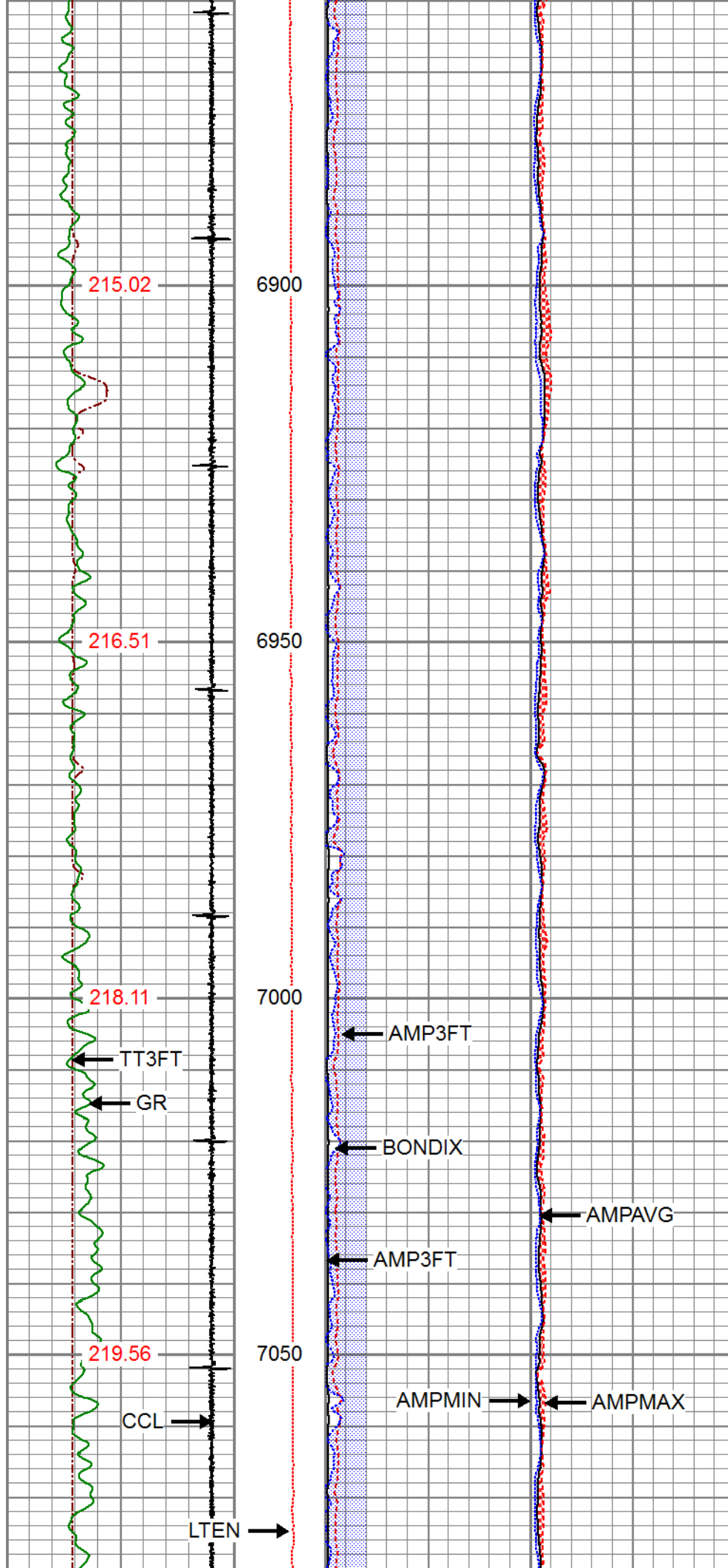


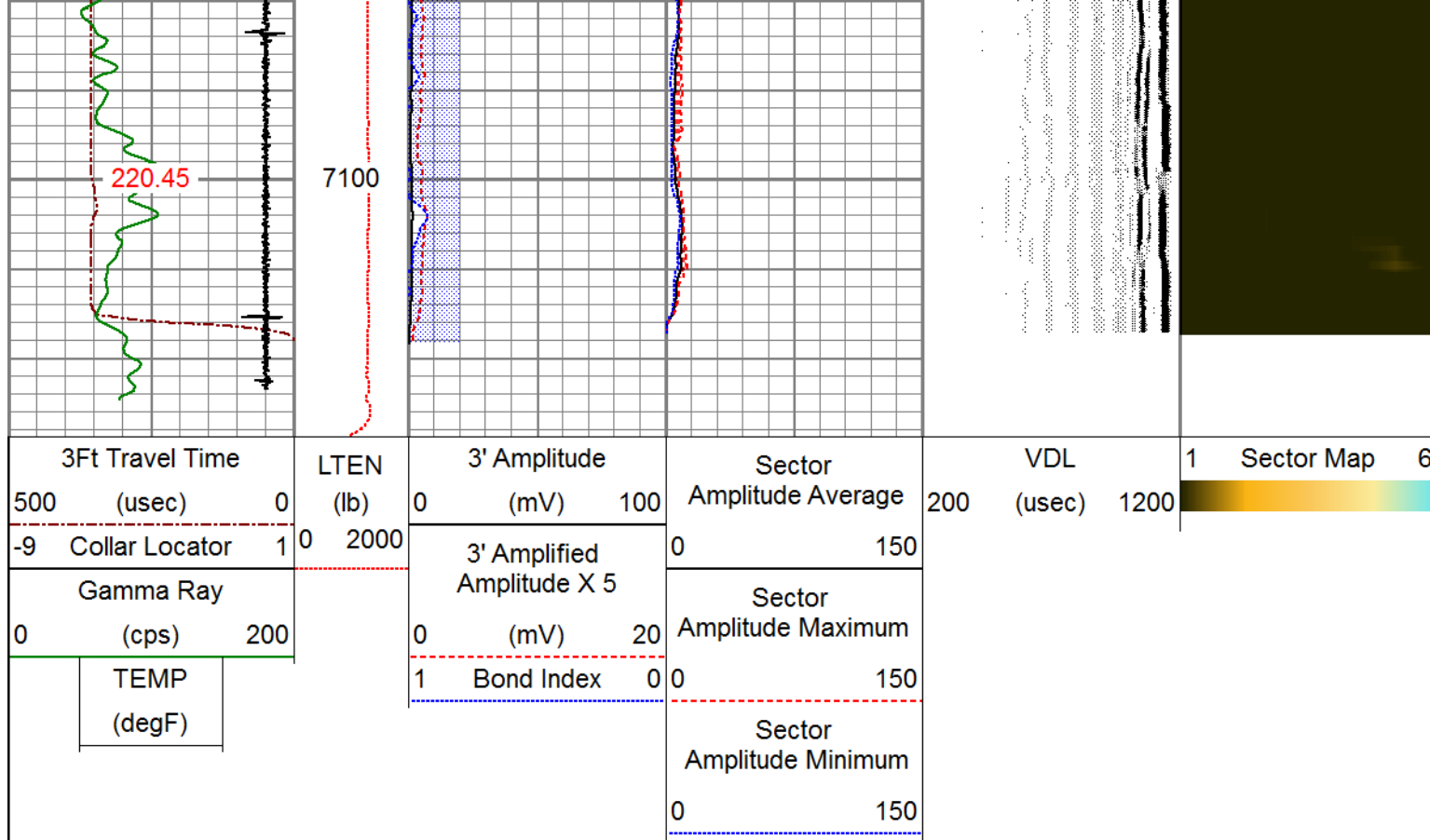
















## MAIN LOG

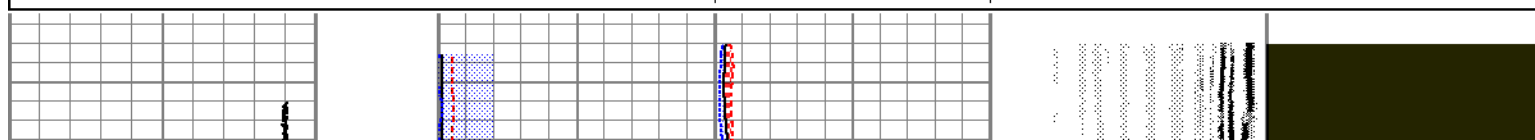
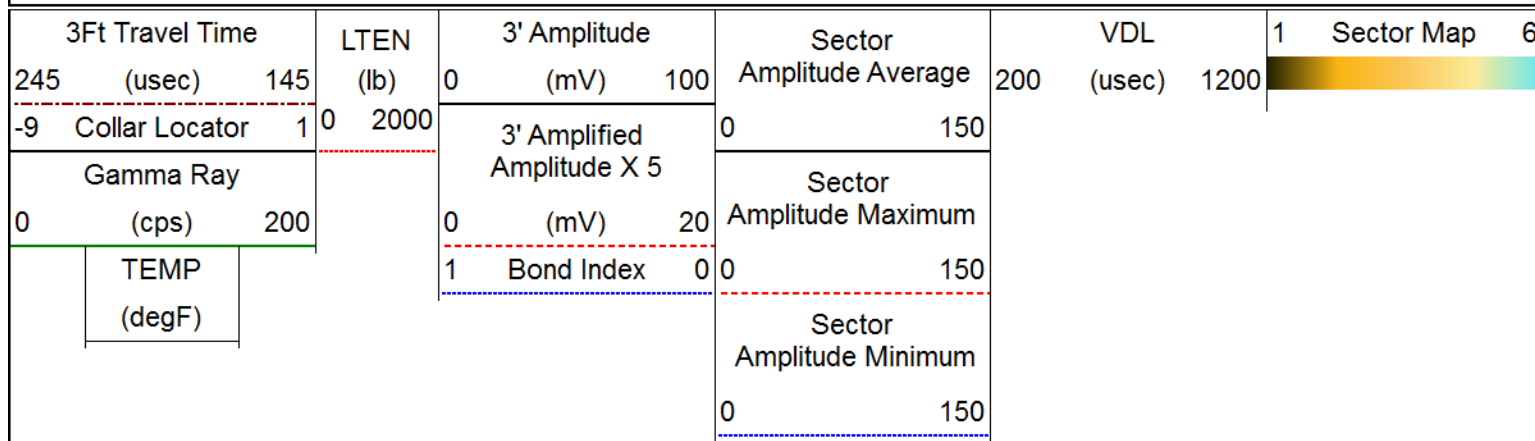
500 PSI APPLIED AT SURFACE



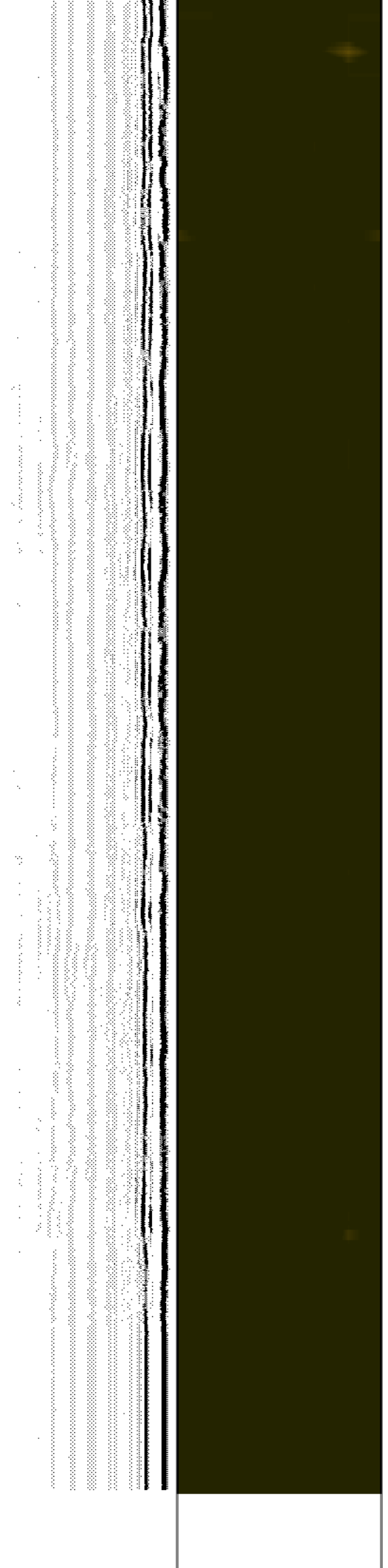
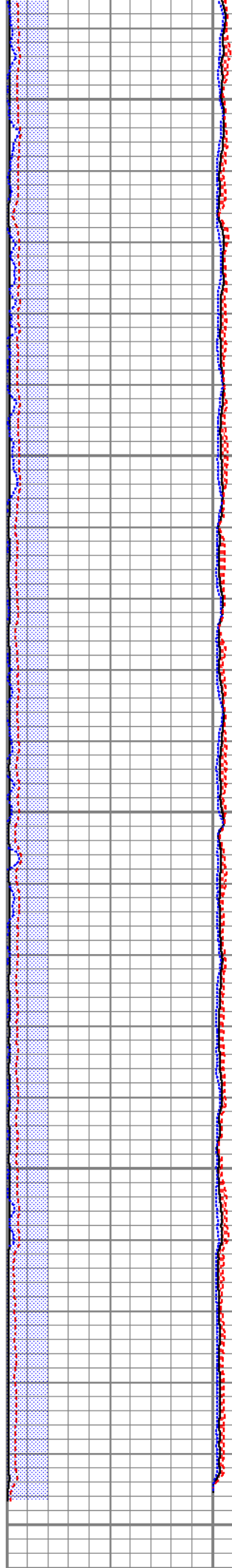
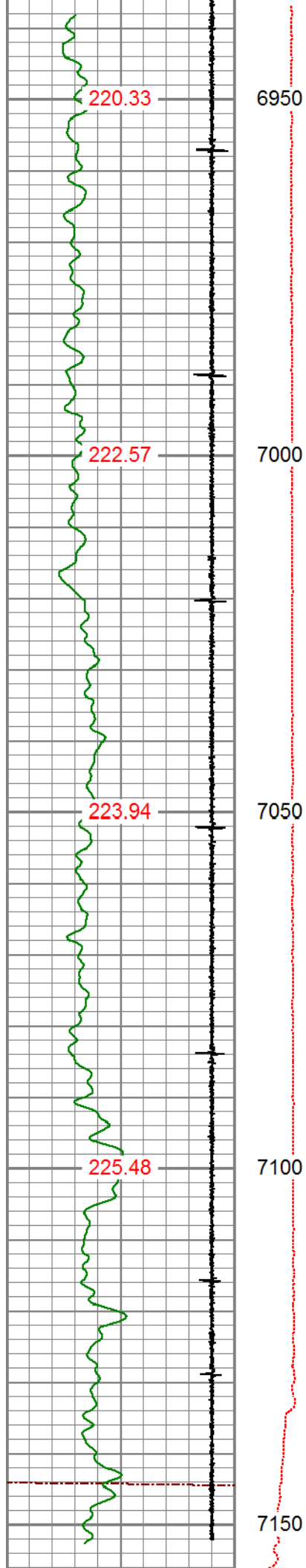
## REPEAT SECTION


ZERO PSI APPLIED AT SURFACE

Database File	anadarko_barron federal 24-18_0512330844_20191016_scbl.db
Dataset Pathname	pass10
Presentation Format	pinr_scbl
Dataset Creation	Wed Oct 16 08:22:56 2019
Charted by	Depth in Feet scaled 1:240








3Ft Travel Time			LTEN		3' Amplitude		Sector		VDL		1		Sector Map		6	
245	(usec)	145			0	(mV)	100	Amplitude Average		200	(usec)	1200				
-9 Collar Locator			1		0		2000		0		150					
Gamma Ray					3' Amplified		Sector									
0					Amplitude X 5		Amplitude Maximum									
(cps)			200		0		(mV)		20							
					1		Bond Index		0		0					
TEMP							Sector									
(degF)							Amplitude Minimum									
							0				150					

Calibration Report						
Database File	anadarko_barron federal 24-18_0512330844_20191016_scbl.db					
Dataset Pathname	pass11					
Dataset Creation	Wed Oct 16 08:34:31 2019					
Gamma Ray Calibration Report						
Serial Number:	TekCo-169					
Tool Model:	169 TekCo					
Performed:	Wed Oct 16 07:09:07 2019					
Calibrator Value:	1.0	cps				
Background Reading:	0.0	cps				
Calibrator Reading:	1.0	cps				
Sensitivity:	0.6000	cps/cps				
Segmented Cement Bond Log Calibration Report						
Serial Number:	IEHN3-02					
Tool Model:	169 TekCo w Temp					
Calibration Casing Diameter:	5.500	in				
Calibration Depth:	0.000	ft				
Master Calibration, performed Thu Feb 07 14:10:00 2019:						
	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.012	2.046	0.700	71.921	35.013	0.295
CAL	-0.012	0.988				
5'	-0.013	2.445	0.700	71.921	28.982	1.065
SUM						
S1	-0.009	2.001	0.000	100.000	49.753	0.435
S2	-0.008	2.024	0.000	100.000	49.216	0.408
S3	-0.008	1.959	0.000	100.000	50.831	0.429
S4	-0.008	2.000	0.000	100.000	49.800	0.419
S5	-0.009	1.971	0.000	100.000	50.518	0.432
S6	-0.009	2.007	0.000	100.000	49.622	0.427
S7						
S8						
Internal Reference Calibration, performed (Not Performed):						
	Raw (v)		Calibrated (v)		Results	

Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain      Offset
CAL	0.000	0.000	-0.012	0.988	1.000      0.000
Air Zero Calibration, performed (Not Performed):					
	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					
S8					
Temperature Calibration Report					
Serial Number:		IEHN3-02			
Tool Model:		169 TekCo w Temp			
Performed:		Thu Feb 01 13:04:11 2018			
		Reference		Reading	
Low Reference:	0.00	degF	0.00	usec	
High Reference:	1.00	degF	1.00	usec	
Gain:	0.33				
Offset:	0.00				
Delta Spacing	1				

	Company	ANADARKO PETROLEUM CORP.
	Well	BARRON FEDERAL 24-18
	Field	WATTENBERG
	County	WELD
	State	COLORADO