



**CEMENT BOND LOG  
WITH GAMMA RAY**

Pioneer Energy Services

Comp. ANADARKO PETROLEUM CORP.  
Well PIONEER 1-11  
Field WATTENBERG  
Co. WELD  
State COLORADO

Company **ANADARKO PETROLEUM CORP.**  
Well **PIONEER 1-11**  
Field **WATTENBERG**  
County **WELD** State **COLORADO**

Location: **SW NE** API #: 05-123-29644  
2168' FNL & 2191' FEL  
LAT: 40.15450 LONG: -104.62920  
SEC 11 TWP 2N RGE 65W  
Permanent Datum **GL** Elevation **4854'**  
Log Measured From **GL** 0 Above Perm. Datum  
Drilling Measured From **KB**

Other Services  
**CIBP  
BAILER  
SQZ**  
Elevation  
K.B. 4874'  
D.F.  
G.L. 4854'

Date of Service	2019/05/16			
Run Number	ONE			
Depth Driller or P8TD	8158'			
Depth Logger	4480'			
Bottom Log Interval	4480'			
Top Log Interval	SURFACE			
Open Hole Size	7-7/8"			
Type Fluid	WATER			
Fluid Level	SURFACE			
Fluid Density	8.4			
Max. Recorded Temperature	N/A			
Max. Wellhead Pressure	500 PSI MAIN PASS			
Wellhead Connection	PACK OFF			
Estimated Cement Top				
Unit Number	P-133			
Wireline Size	9/32"			
Location	FORT MORGAN CO.			
Recorded By	P LOPEZ			
Witnessed By	MR. MIKE EDGAR			
Tubing Record	Size	WVft	Top	Bottom
Surface Casing	8.63	24	SURFACE	822'
Production Casing	4.50	11.6	SURFACE	8174'
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.  
ALL WIRELINE DEPTH  
TOOL ZEROED AT GROUND LEVEL  
RBT TANKED CALIBRATED ON 4/13/2019

THANK YOU FOR USING PIONEER ENERGY SERVICES!

<p>Your Pioneer Energy Services Crew</p> <p>Engineer: P LOPEZ Operator: D. MARSHALL Operator: G. SOTO Operator:</p>	<p>Tool Data - Services</p> <p>RBL-DC 140141 GR CCL 110246</p>	<p>Serial Number</p>
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# Log Variables

DatabaseC:\ProgramData\Warrion\Data\anadarko\_pioneer 1-11\_0512329644\_20190516\_scb1  
 Dataset field/well/run1/pass15/\_vars\_

## Top - Bottom

BOREID in 7.875	BOTTEMP degF 150	CASEOD in 4.5	CASETHCK in 0.25	CASEWGHT lb/ft 11.6	MAXAMPL mV 81.2	MINAMPL mV 0.7
MINATTN db/ft 0.8	PERFS 0	PPT usec 249	SRFTEMP degF 50	TDEPTH ft 4500		


## 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	14.75						
WVFS7	14.75						
WVFS6	14.75						
WVFS5	14.75						
WVFS4	14.75						
WVFS3	14.75						
WVFS2	14.75						
WVFS1	14.75						
WVFCAL	14.75						
WVF3FT	14.75						
WVF5FT	13.75						
HEADVOLT	10.57						
			Centralizer-275 Probe 2 3/4" Probe Adjustable Spring Centralizer	2.88	2.75	15.00	

CCL	6.78		PROBE-GR/CCL-ANALOG-GR/CCL-A (1104.54 2 3/4" Gamma with CCL-Analog)	2.75	60.00
GR	4.05		Centralizer-275 Probe 2 3/4" Probe Adjustable Spring Centralizer	2.88	15.00
			Bullnose-Titan GO Pin Pressure Cap	0.27	1.00
Dataset: anadarko_pioneer 1-11_0512329644_20190516_scbl.db: field/well/run1/pass15 Total length: 23.22 ft Total weight: 208.00 lb O.D.: 2.75 in					



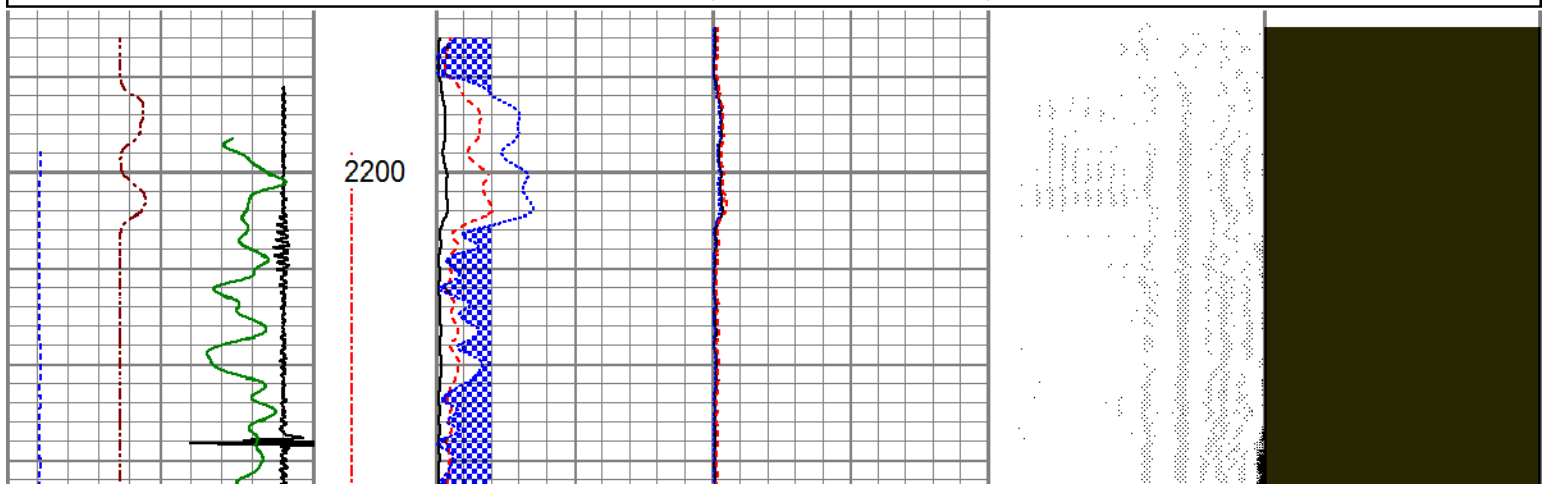
**PIONEER**  
Pioneer Energy Services

## FREE PIPE SECTION

### ZERO PSI APPLIED AT SURFACE

Database File	anadarko_pioneer 1-11_0512329644_20190516_scbl.db
Dataset Pathname	pass11
Presentation Format	pinr_scbl
Dataset Creation	Thu May 16 14:41:58 2019
Charted by	Depth in Feet scaled 1:240

3Ft Travel Time 500 (usec)	ineTensio (lb)	3' Amplitude (mV)	Sector Amplitude Average	VDL (usec)	1 Sector Map 8
0	0	0	0	1200	
-9 Collar Locator	1	3' Amplified Amplitude X 5	0		
0	0	0	150		
Gamma Ray (GAPI)	150	0	Sector Amplitude Maximum		
-100 LSPD (ft/min)	100	1	0		
		Bond Index	0		
			Sector Amplitude Minimum		
			0		
			150		





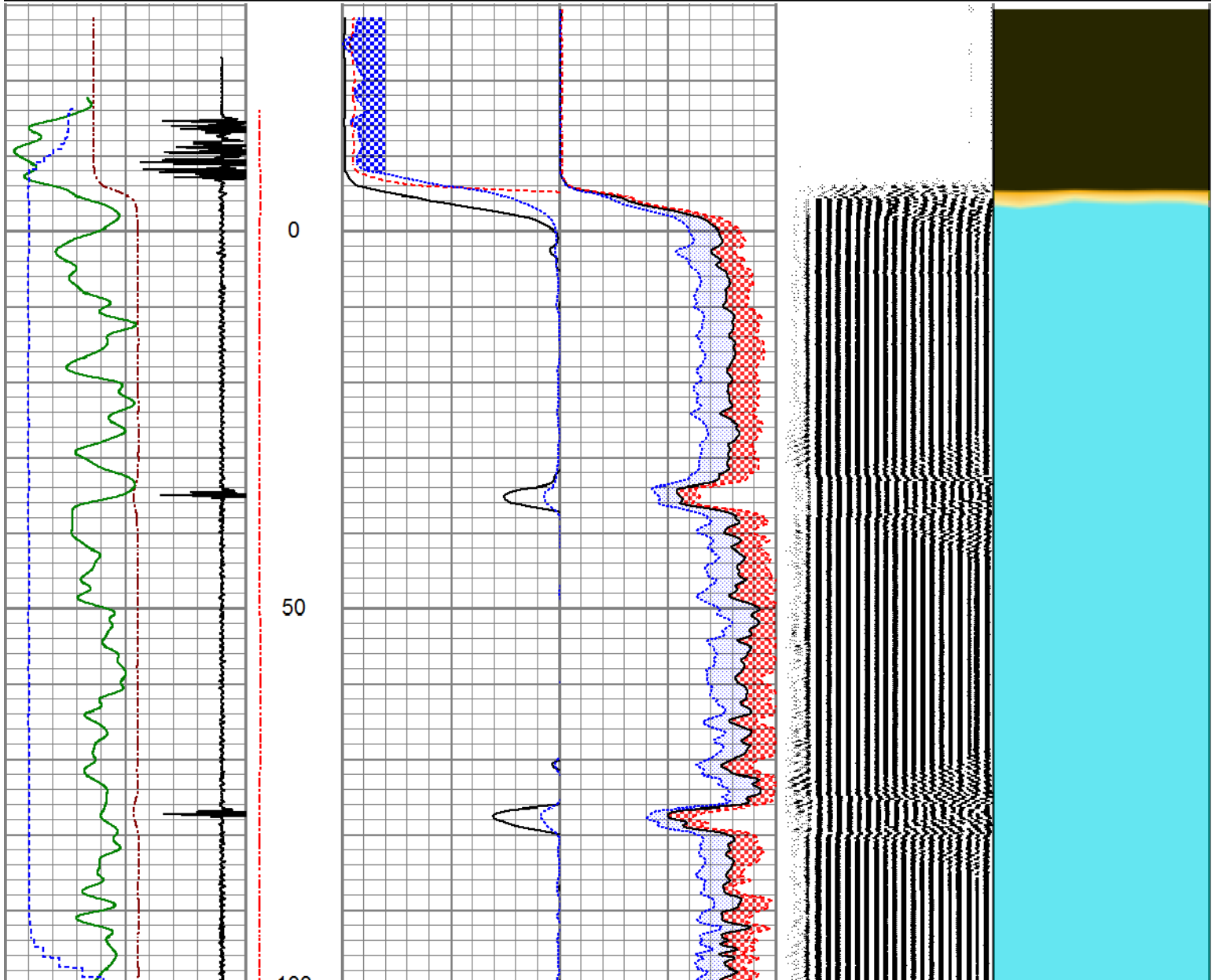


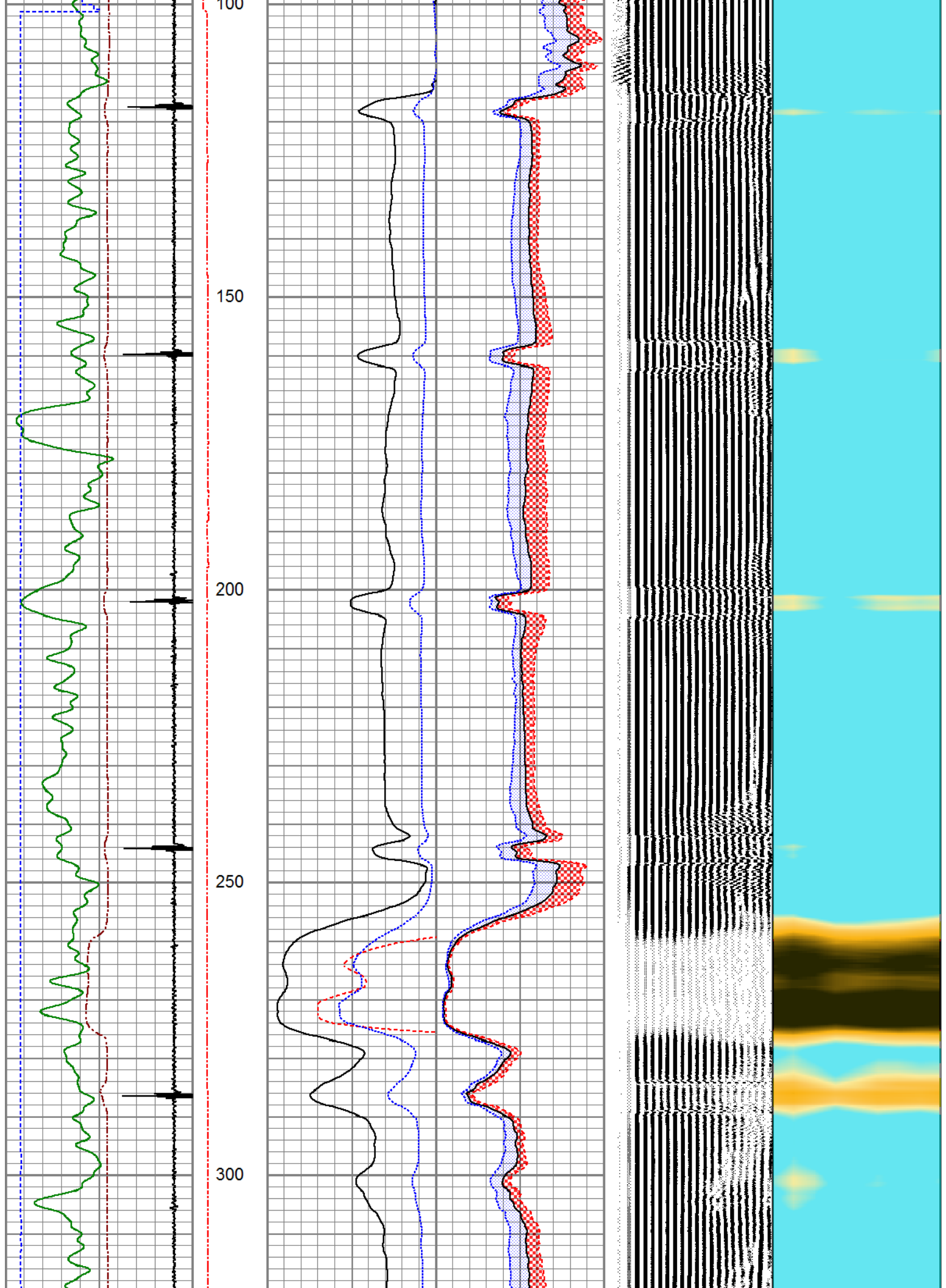
# MAIN LOG

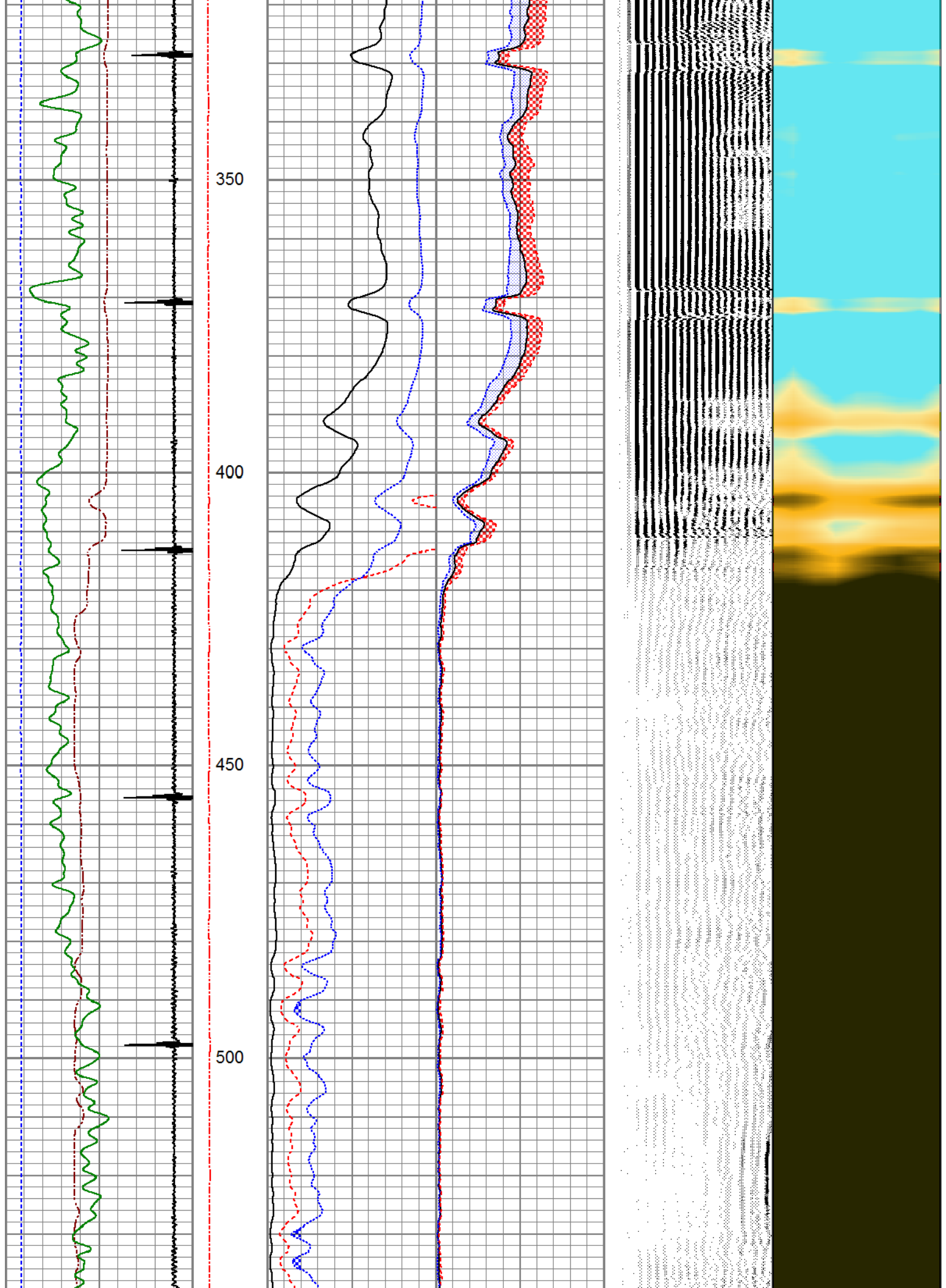
500 PSI APPLIED AT SURFACE

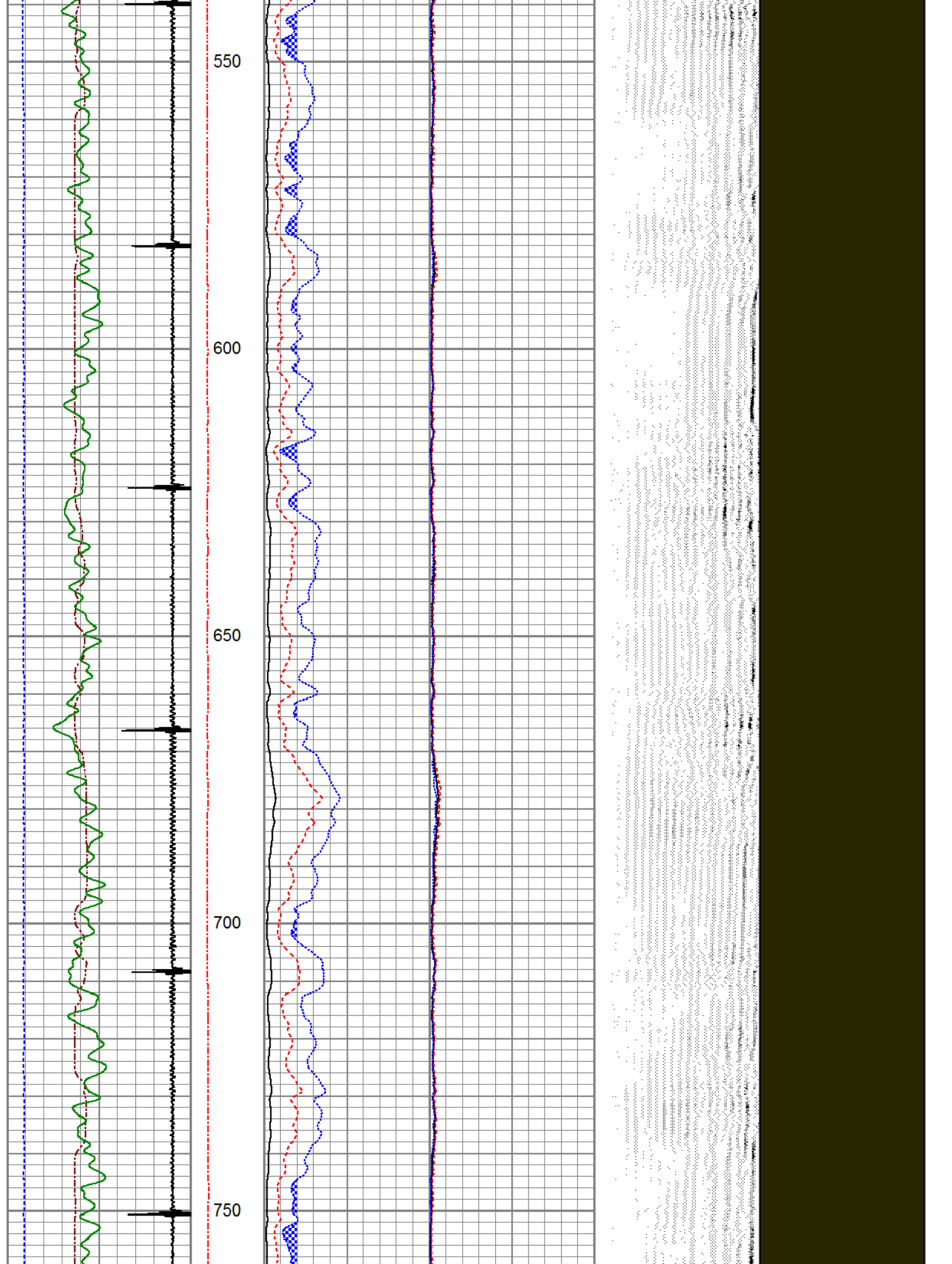
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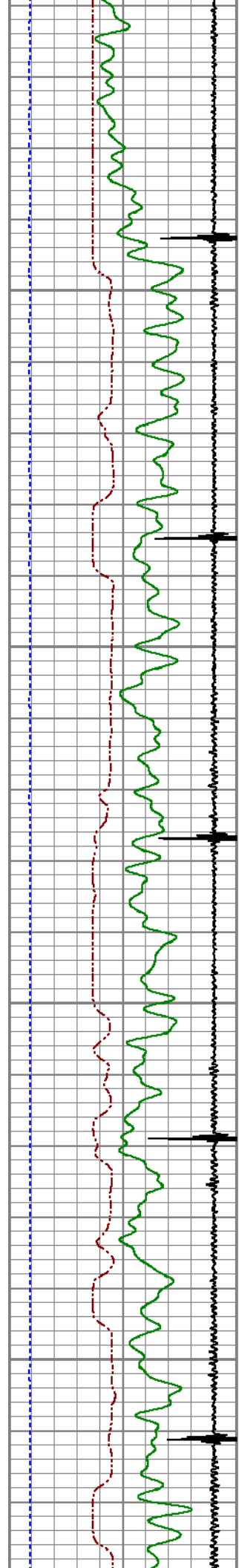
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0	0	0	0	1200	
-9 Collar Locator	1	3' Amplified Amplitude X 5	0		
Gamma Ray 0 (GAPI)	180	0 (mV)	20		
-100 LSPD (ft/min)	100	1 Bond Index	0		
			0		
			150		
			0		
			150		









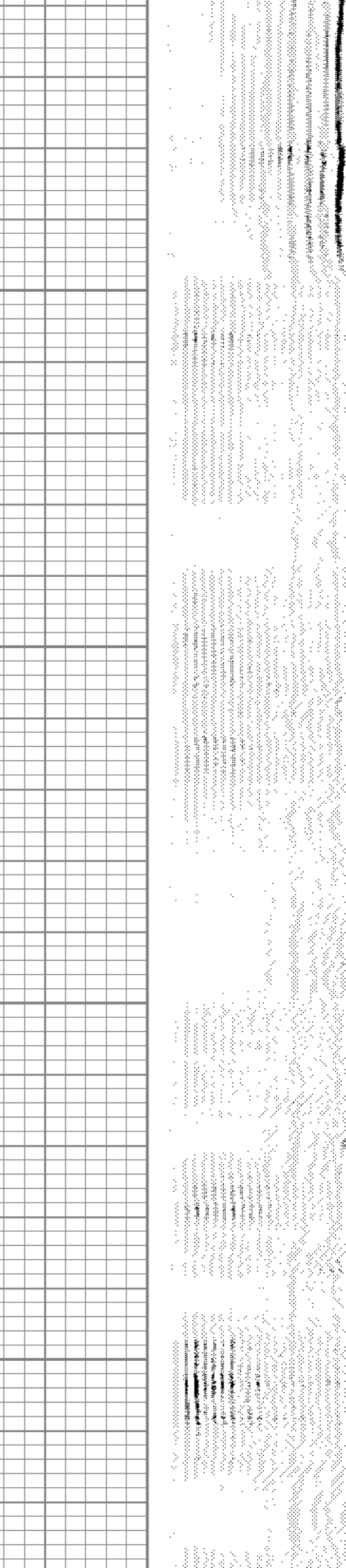
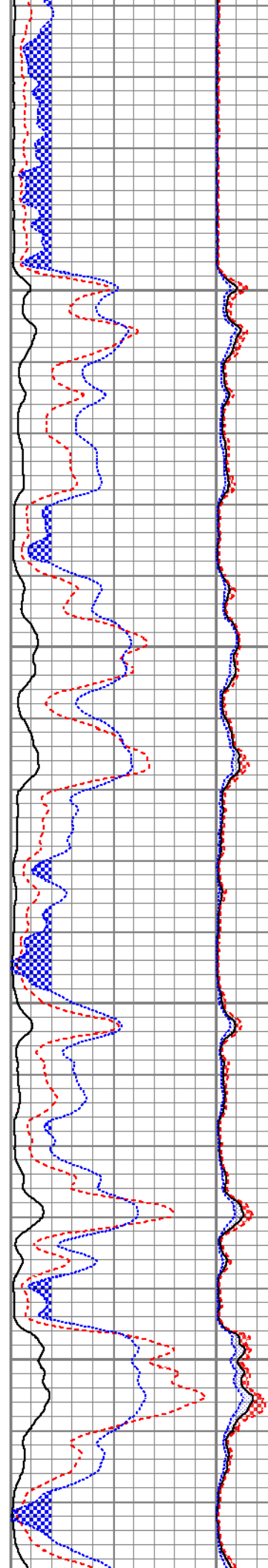


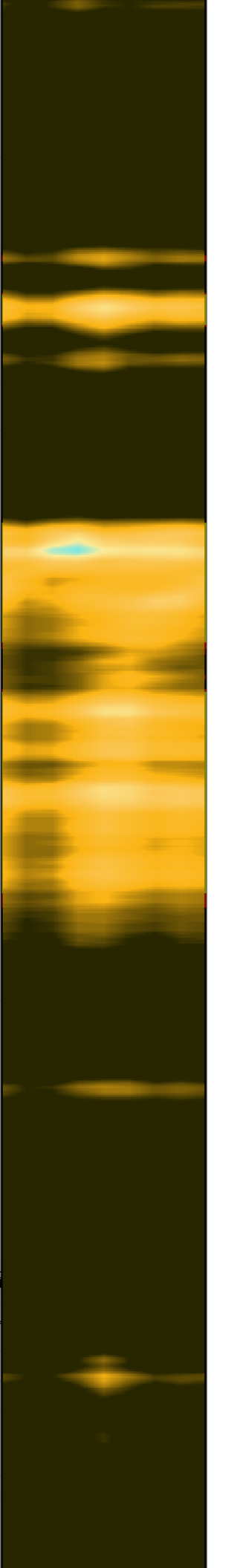
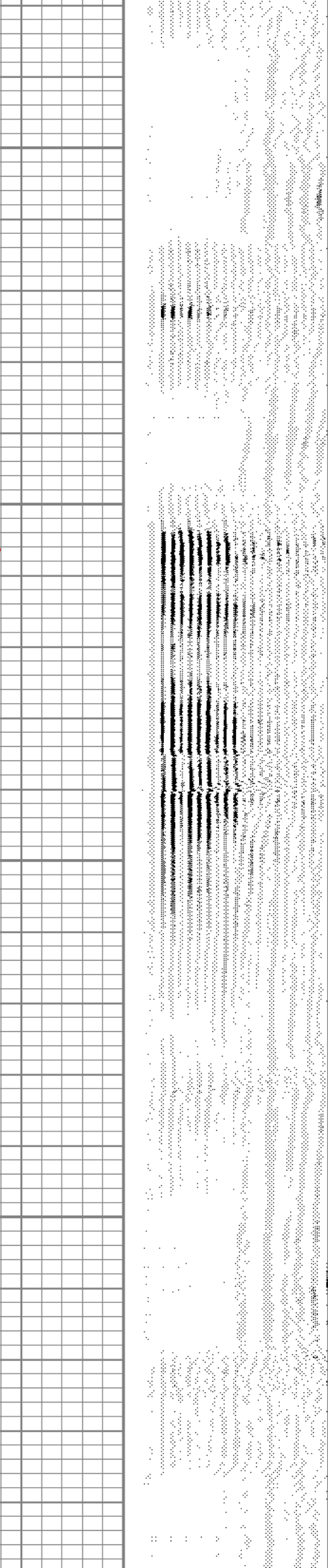
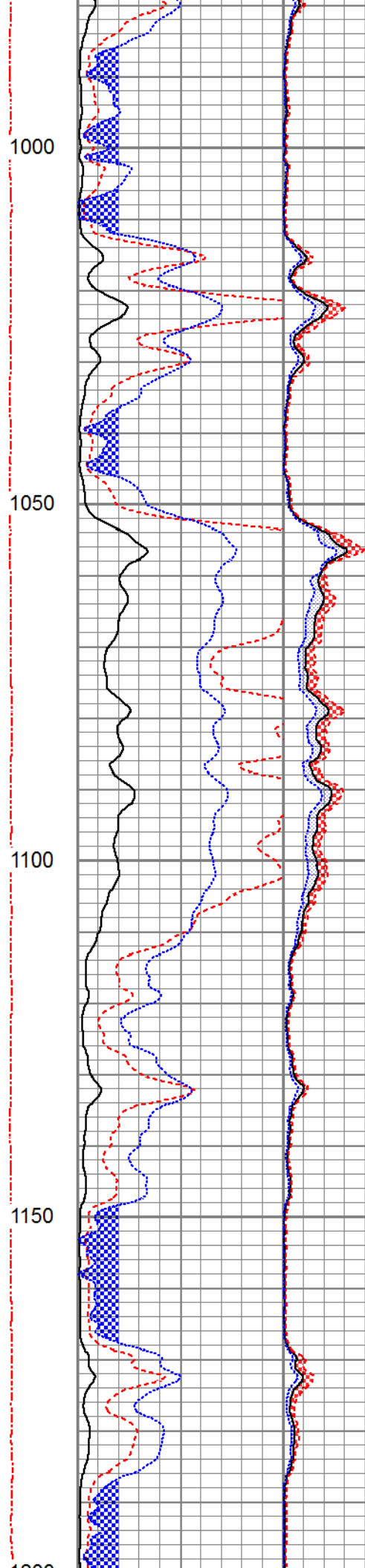
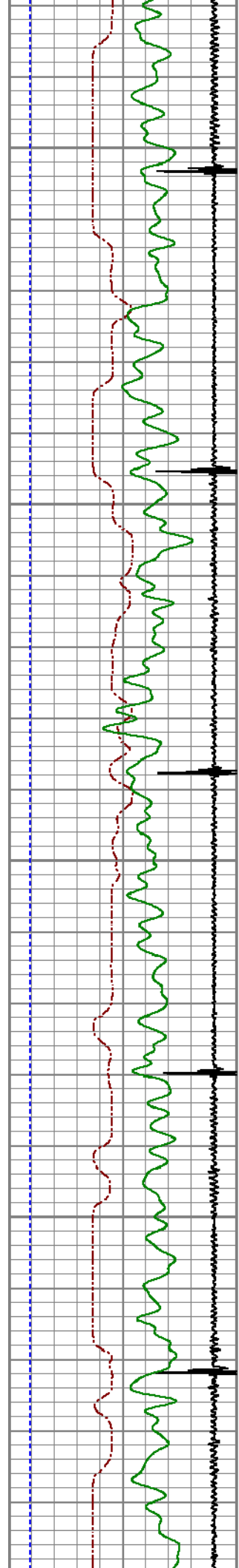
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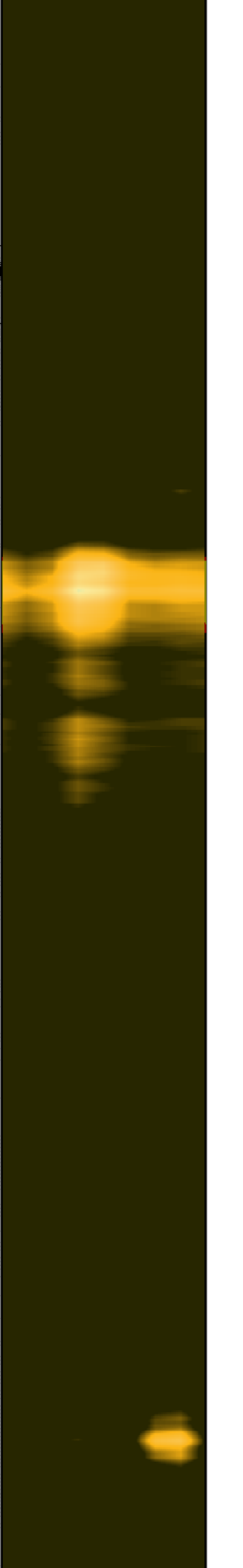
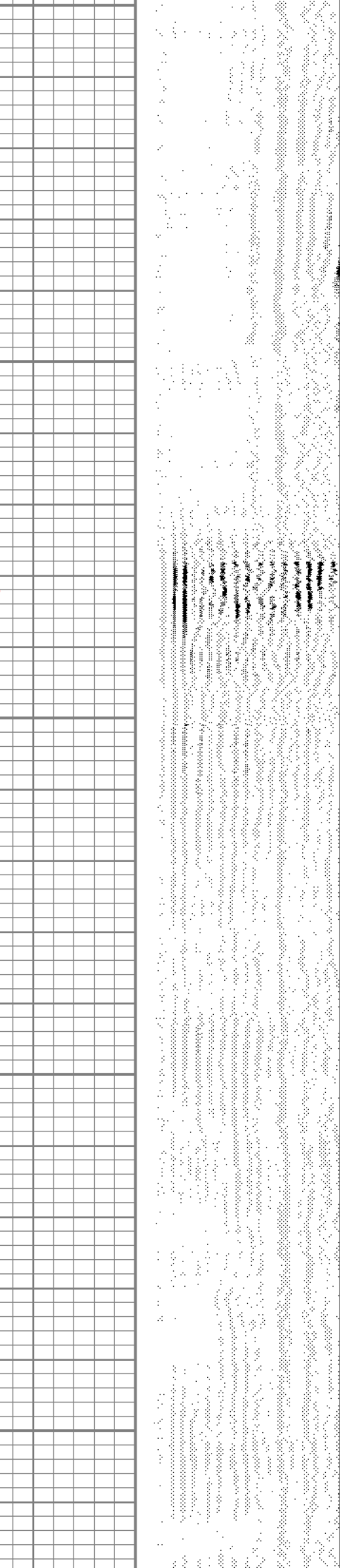
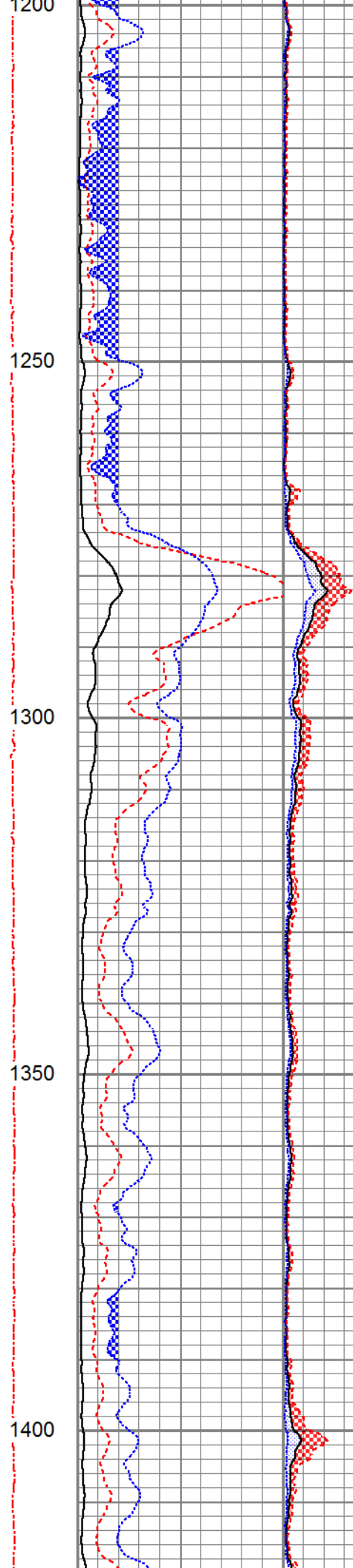
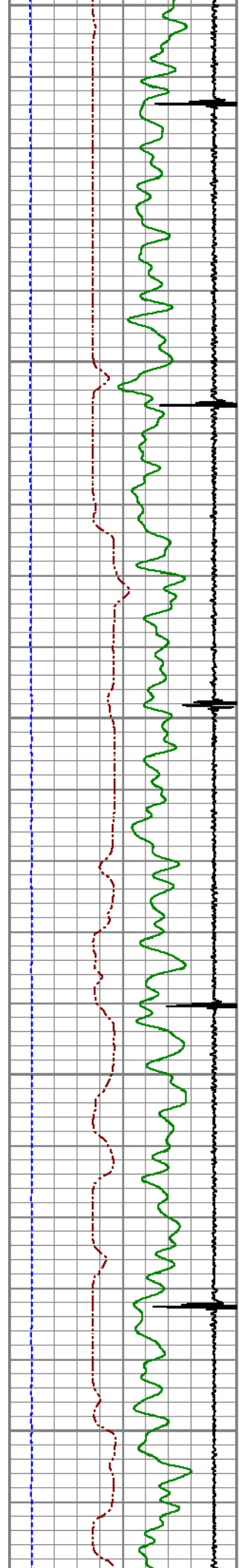
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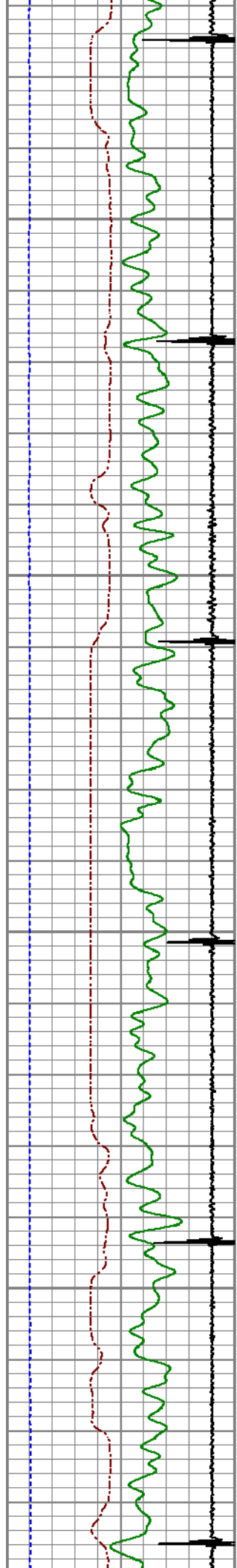
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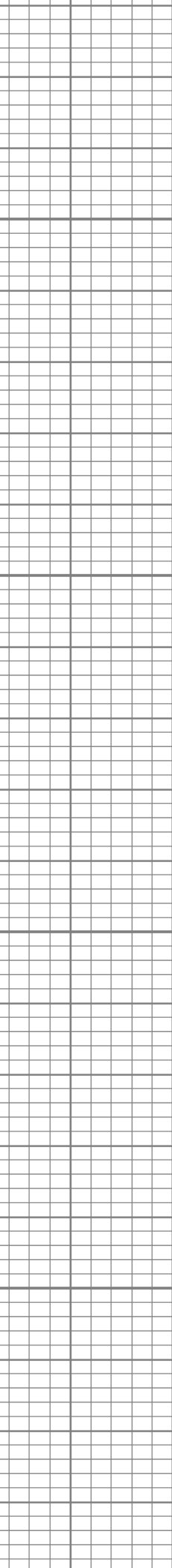
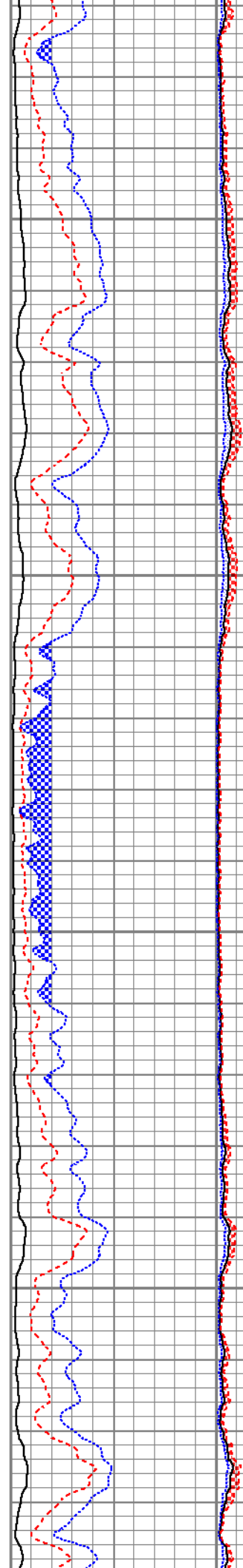


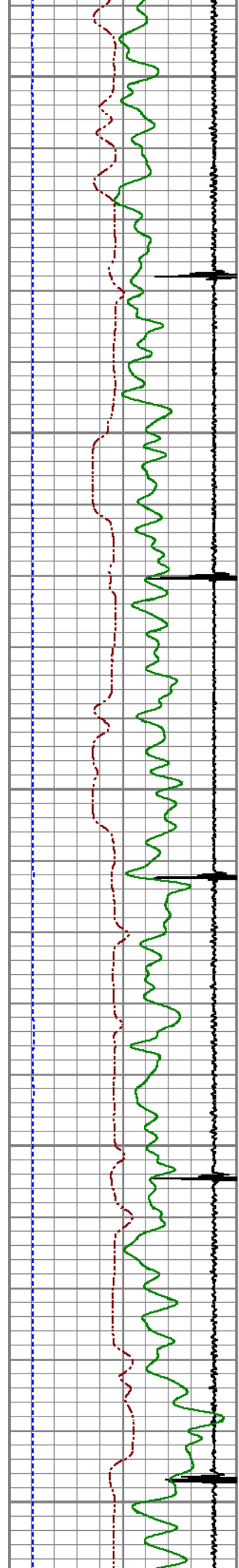




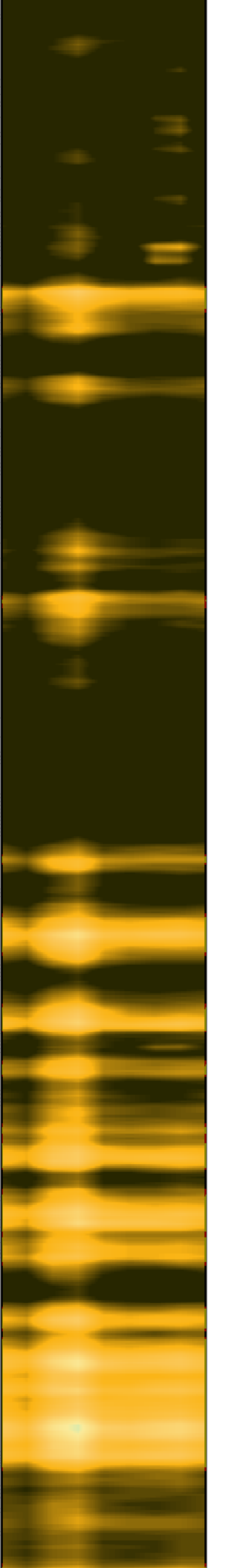
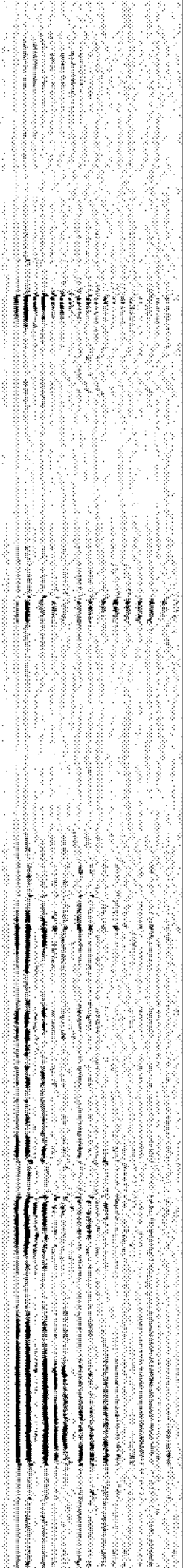
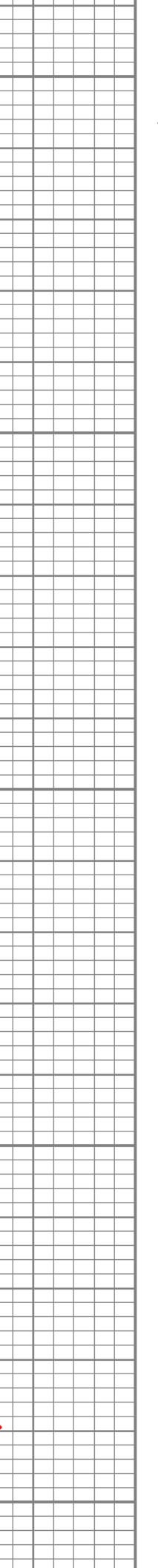
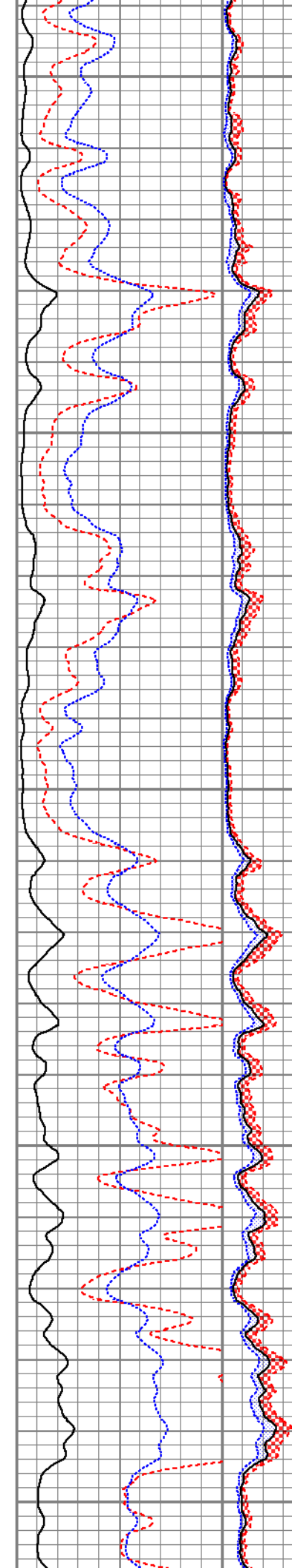


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1550  
1600





1650  
1700  
1750  
1800  
1850

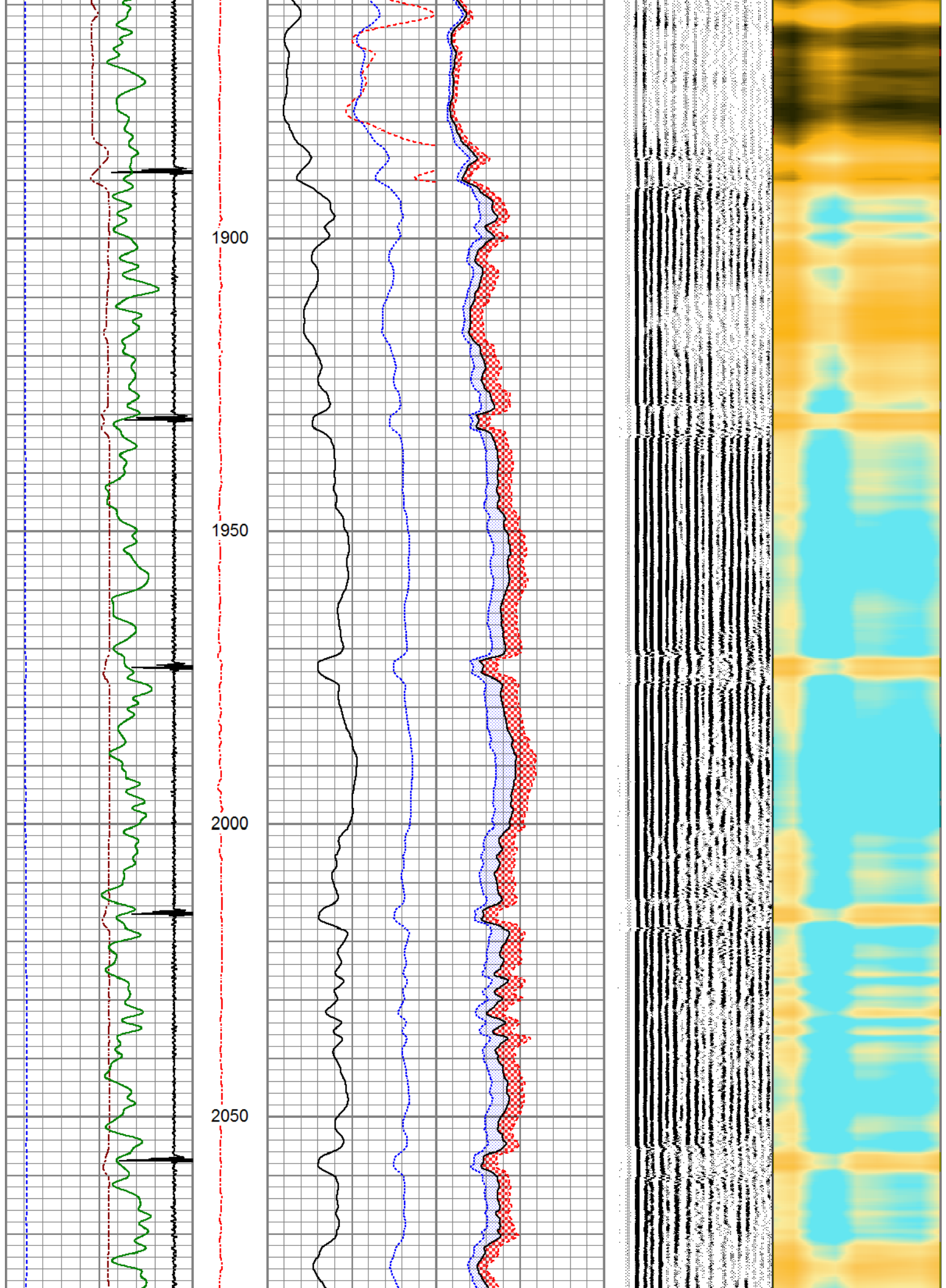


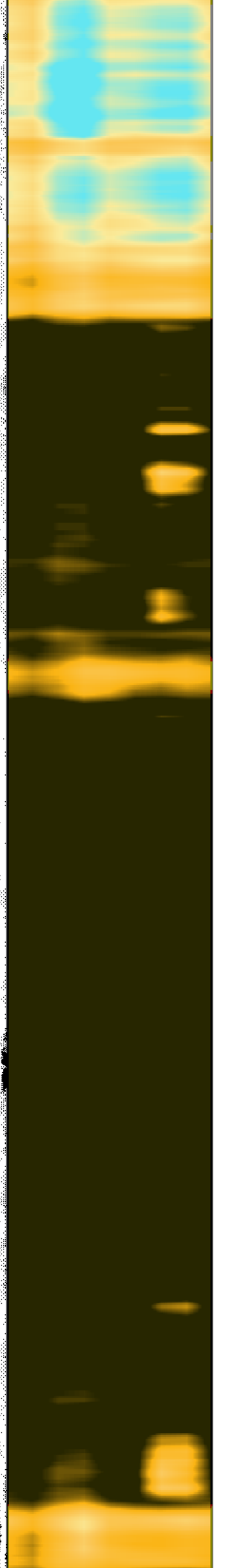
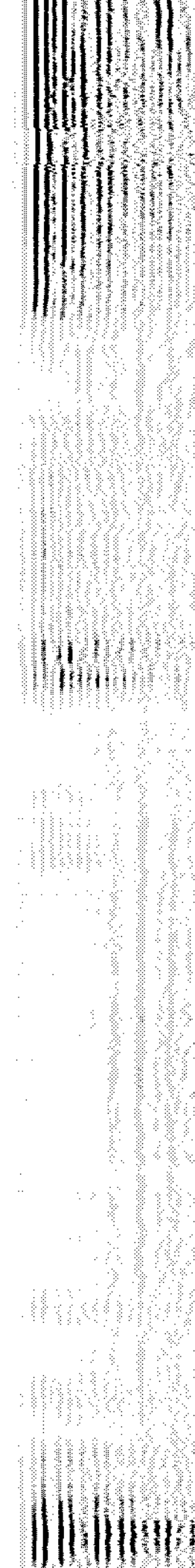
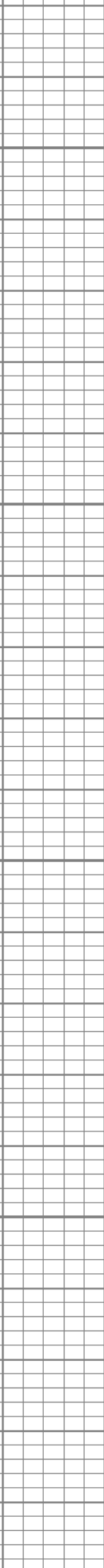
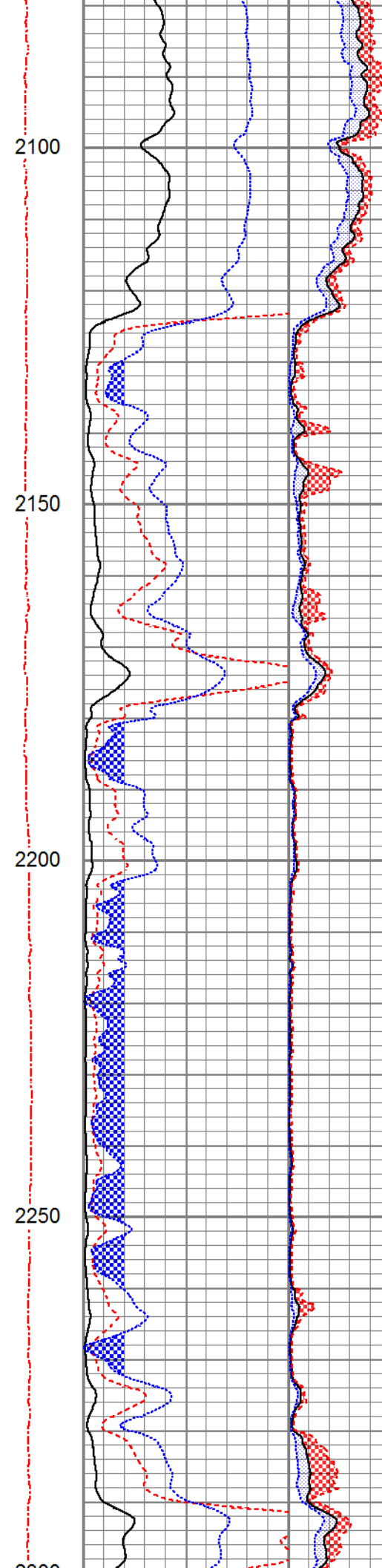
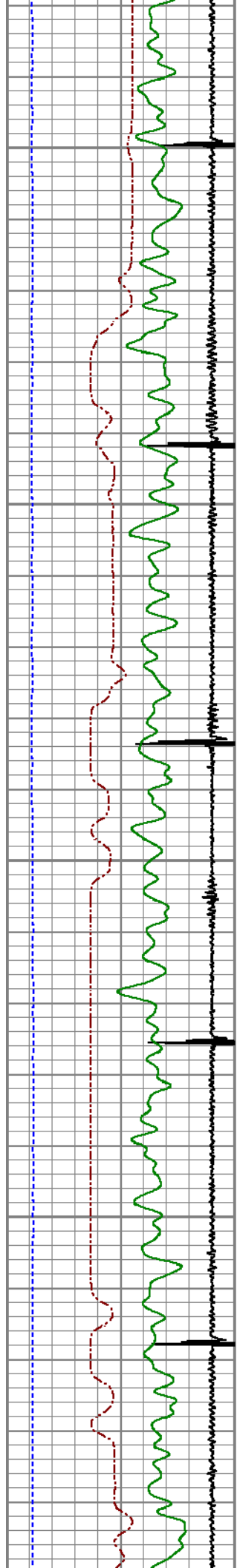
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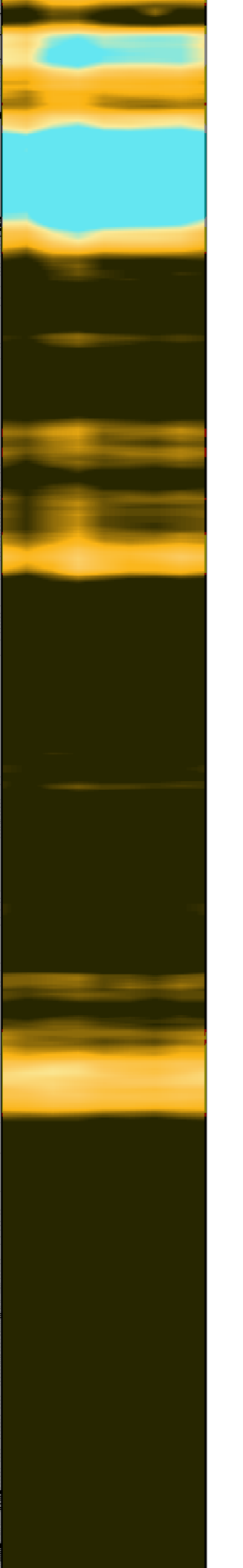
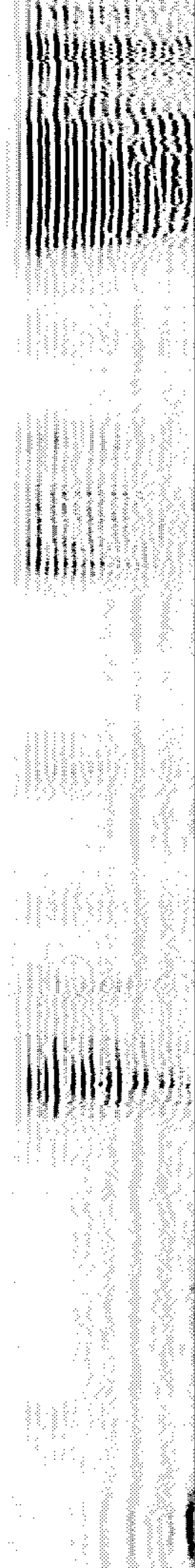
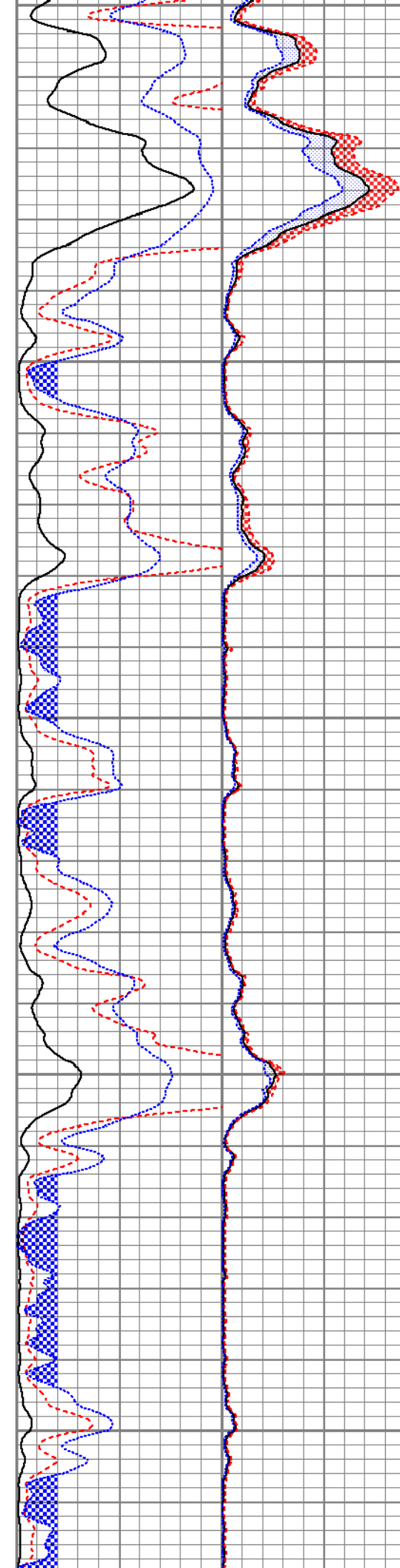
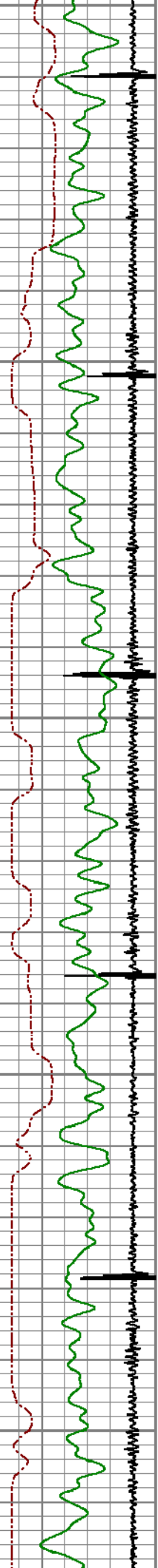
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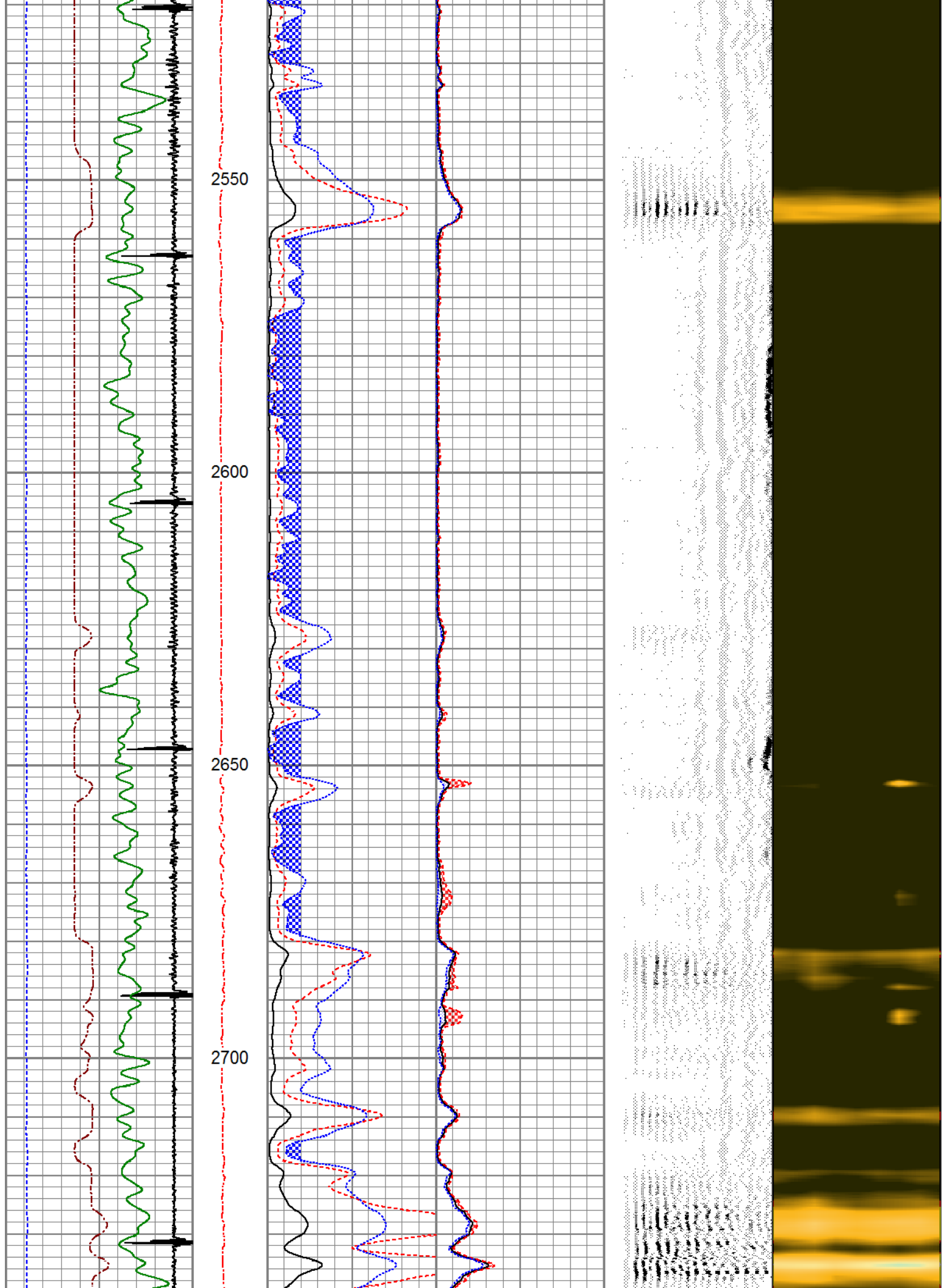
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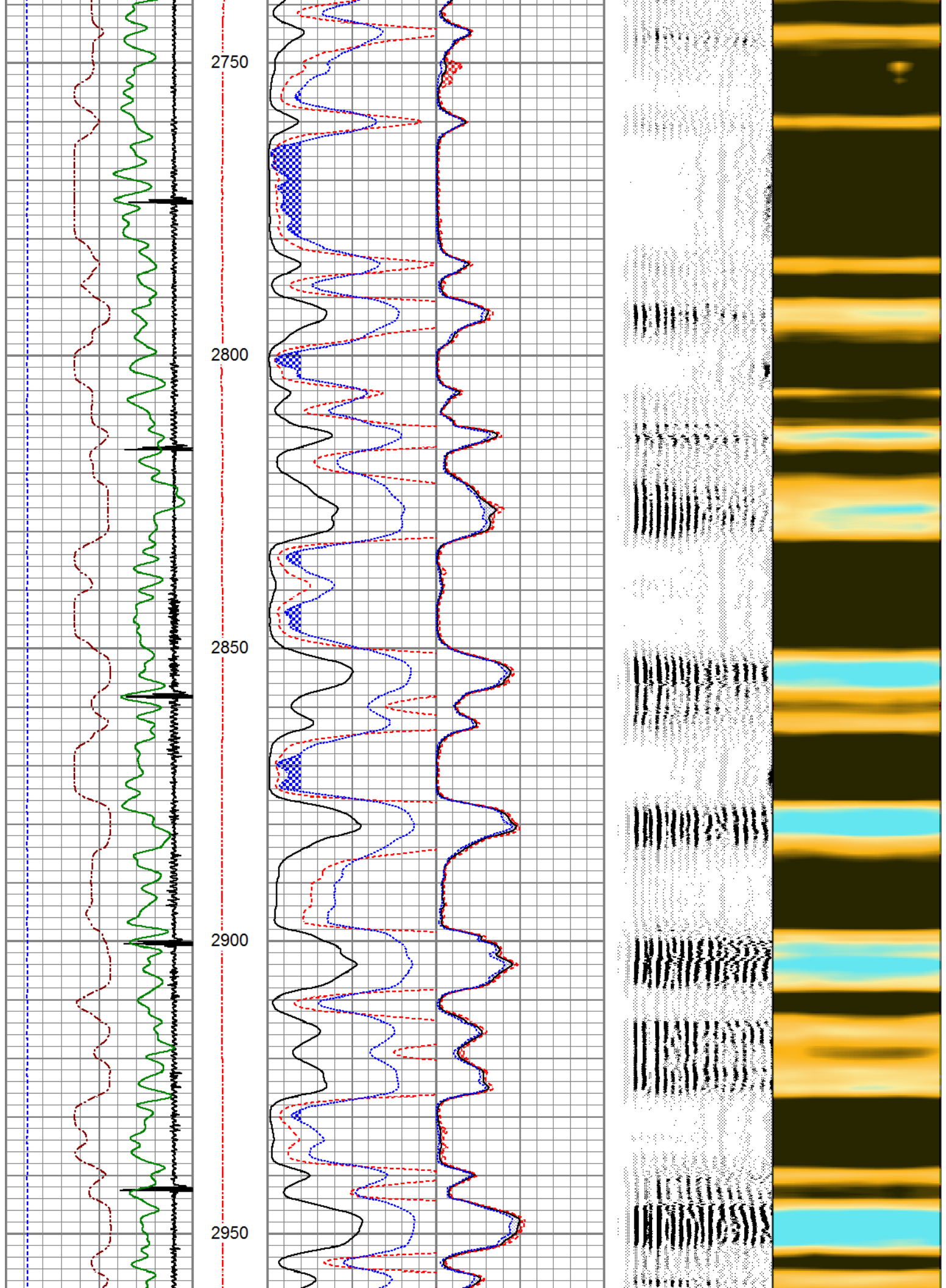


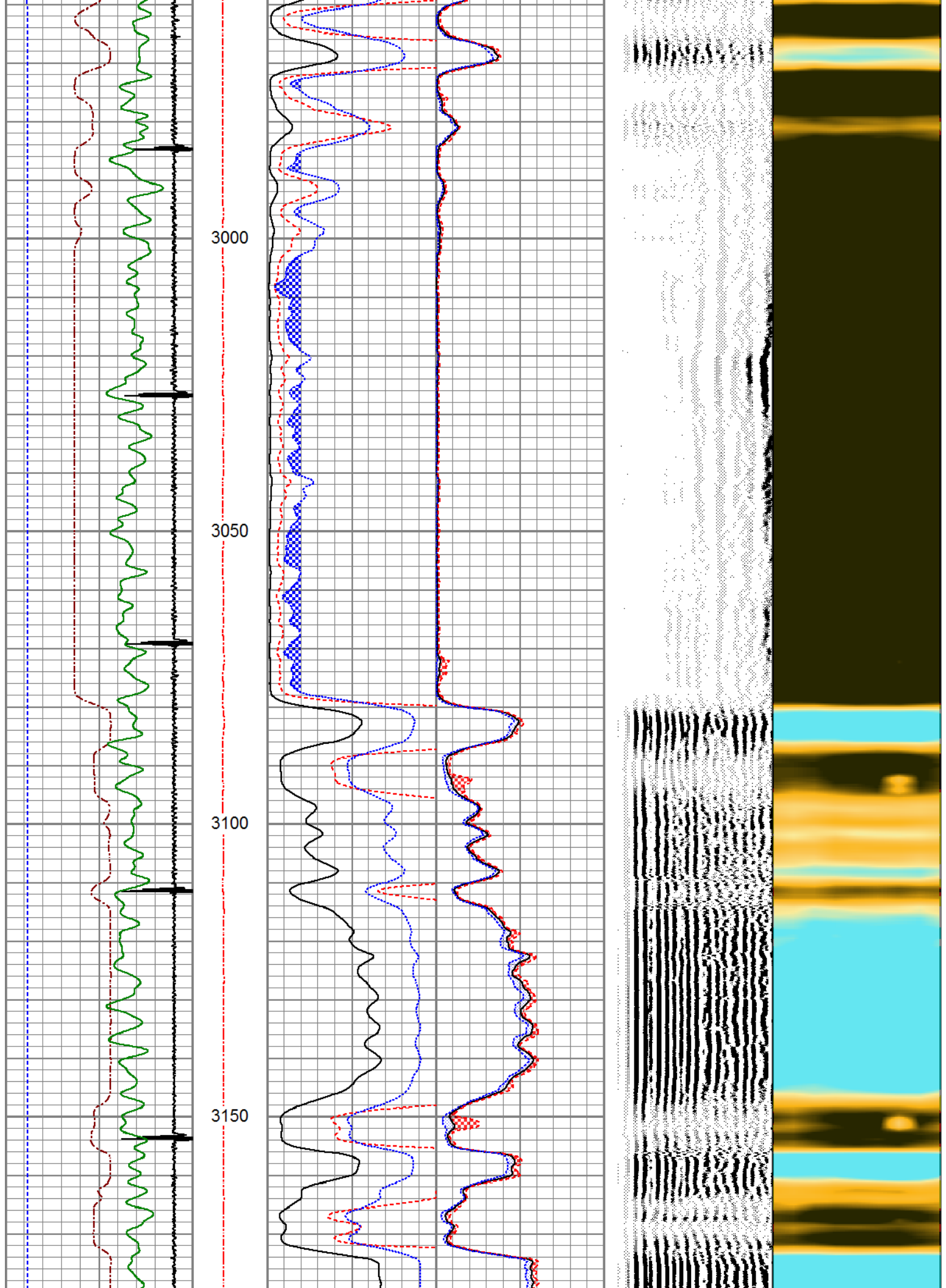


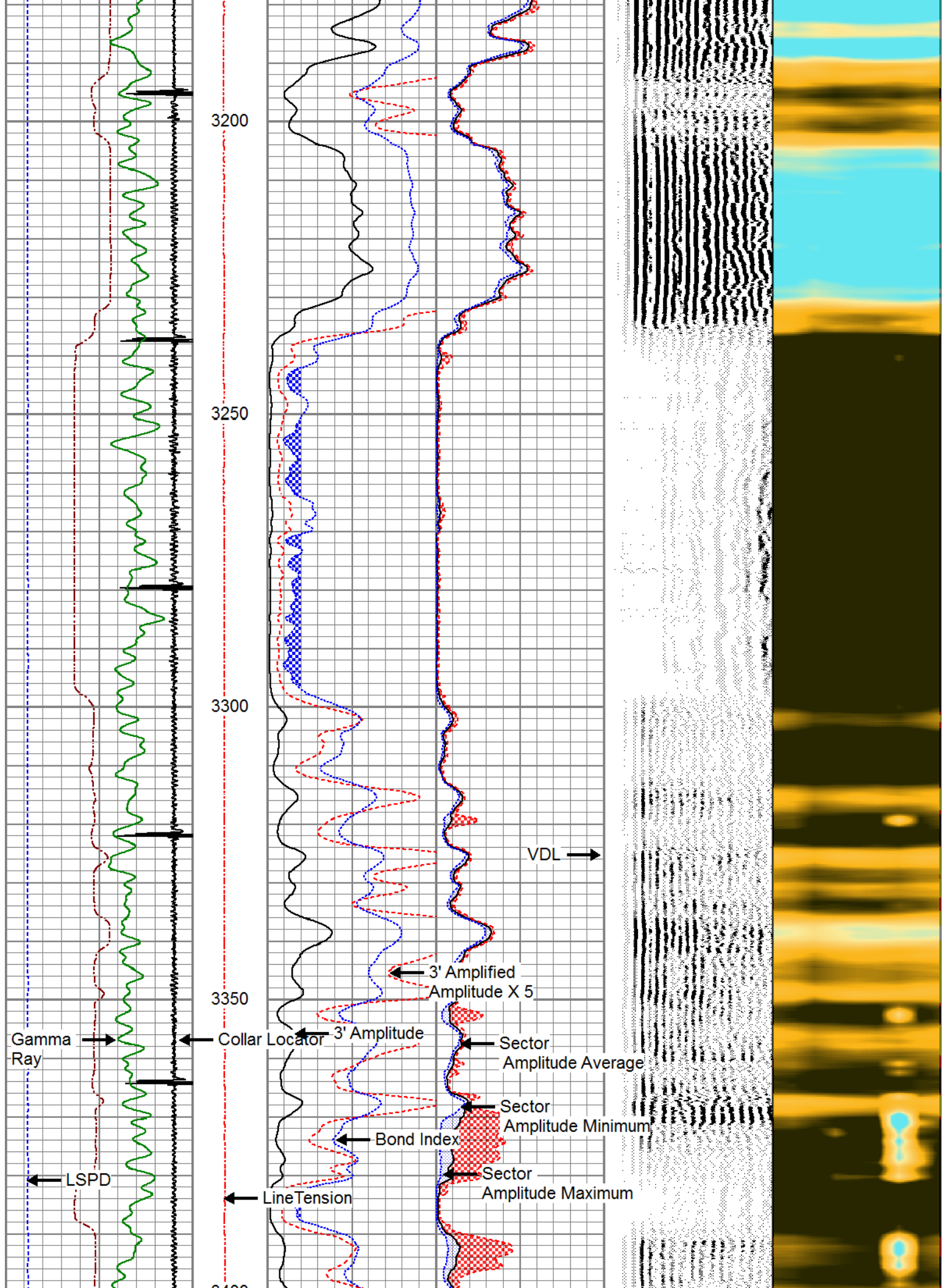
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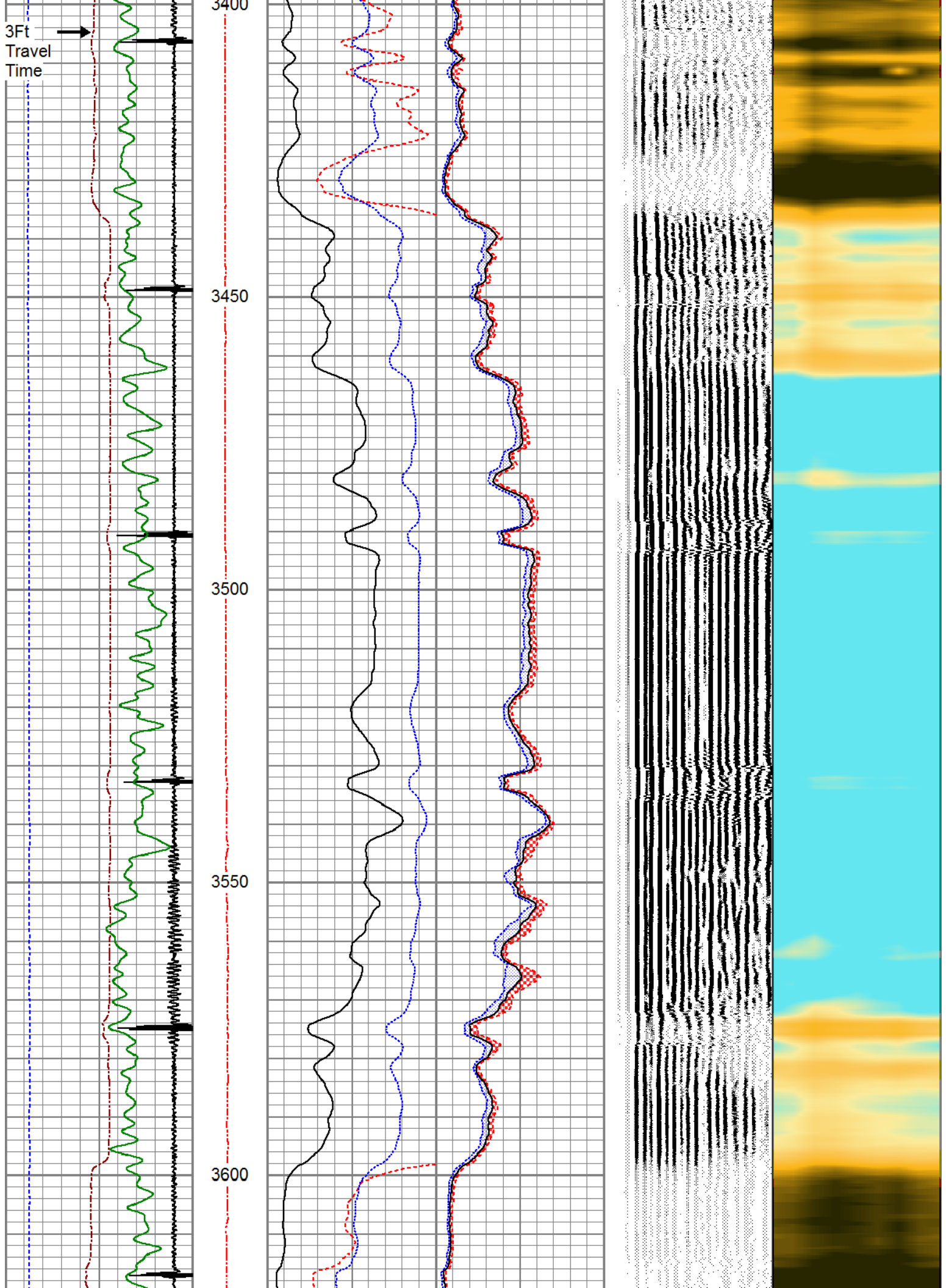


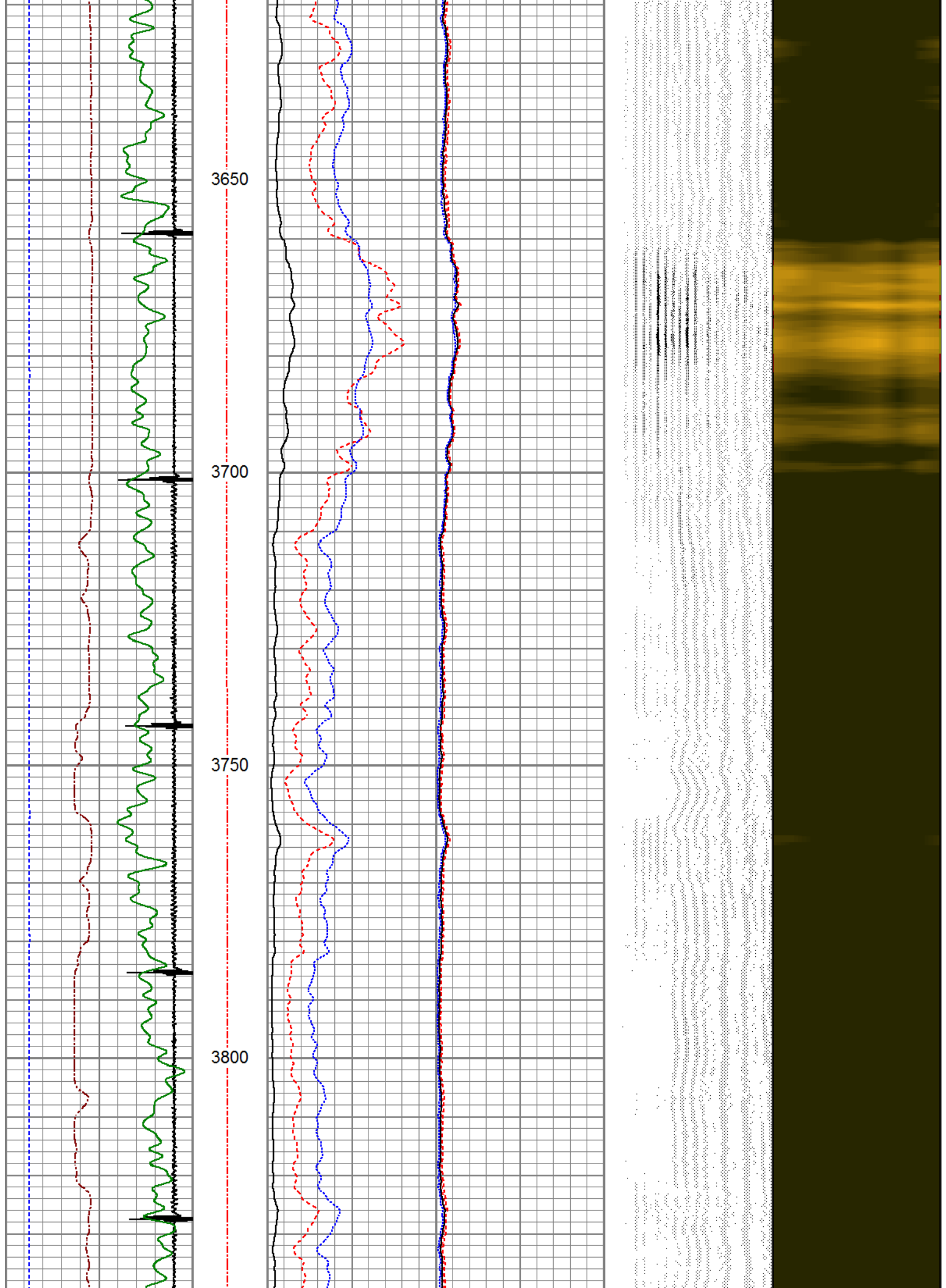












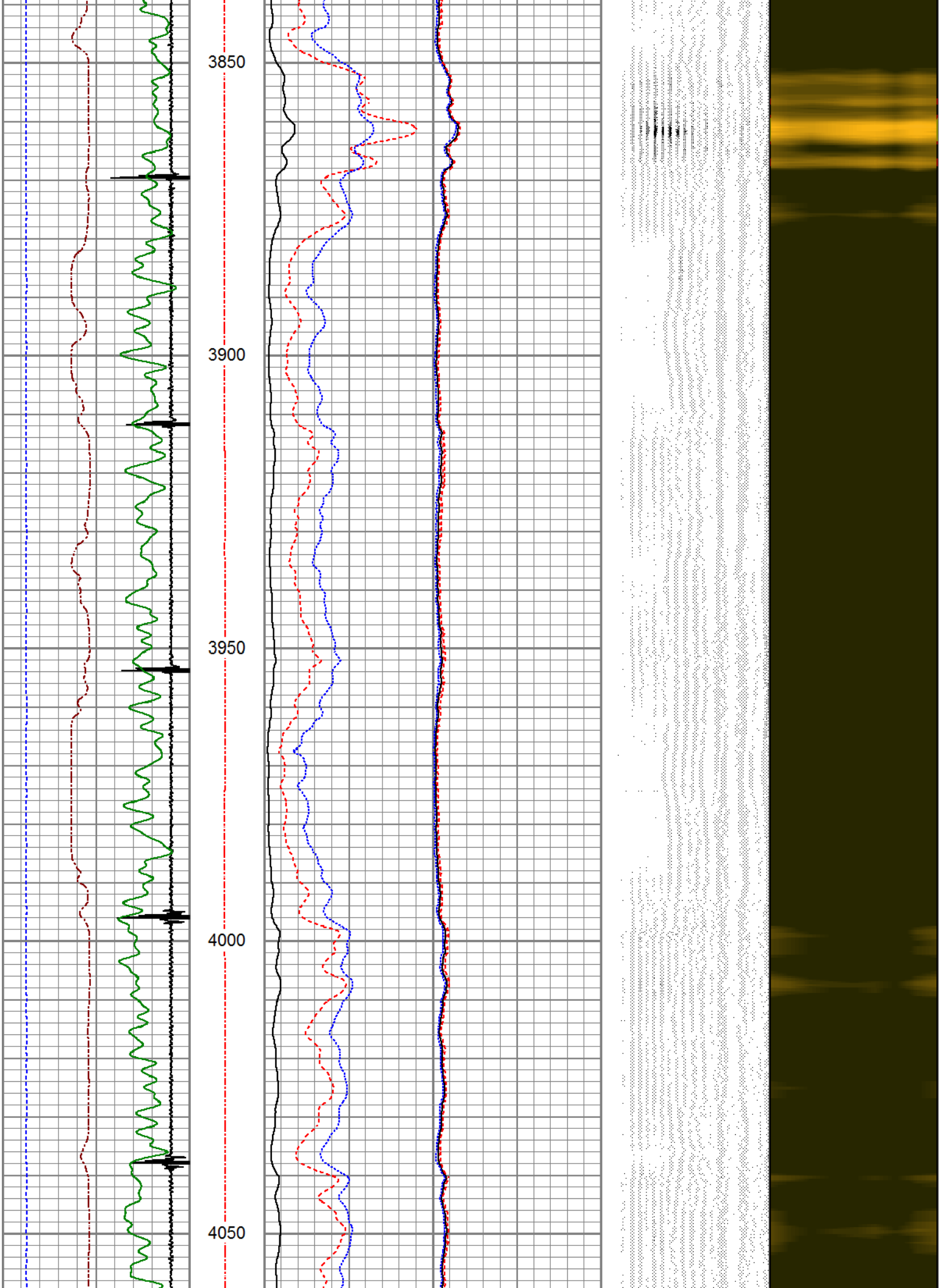
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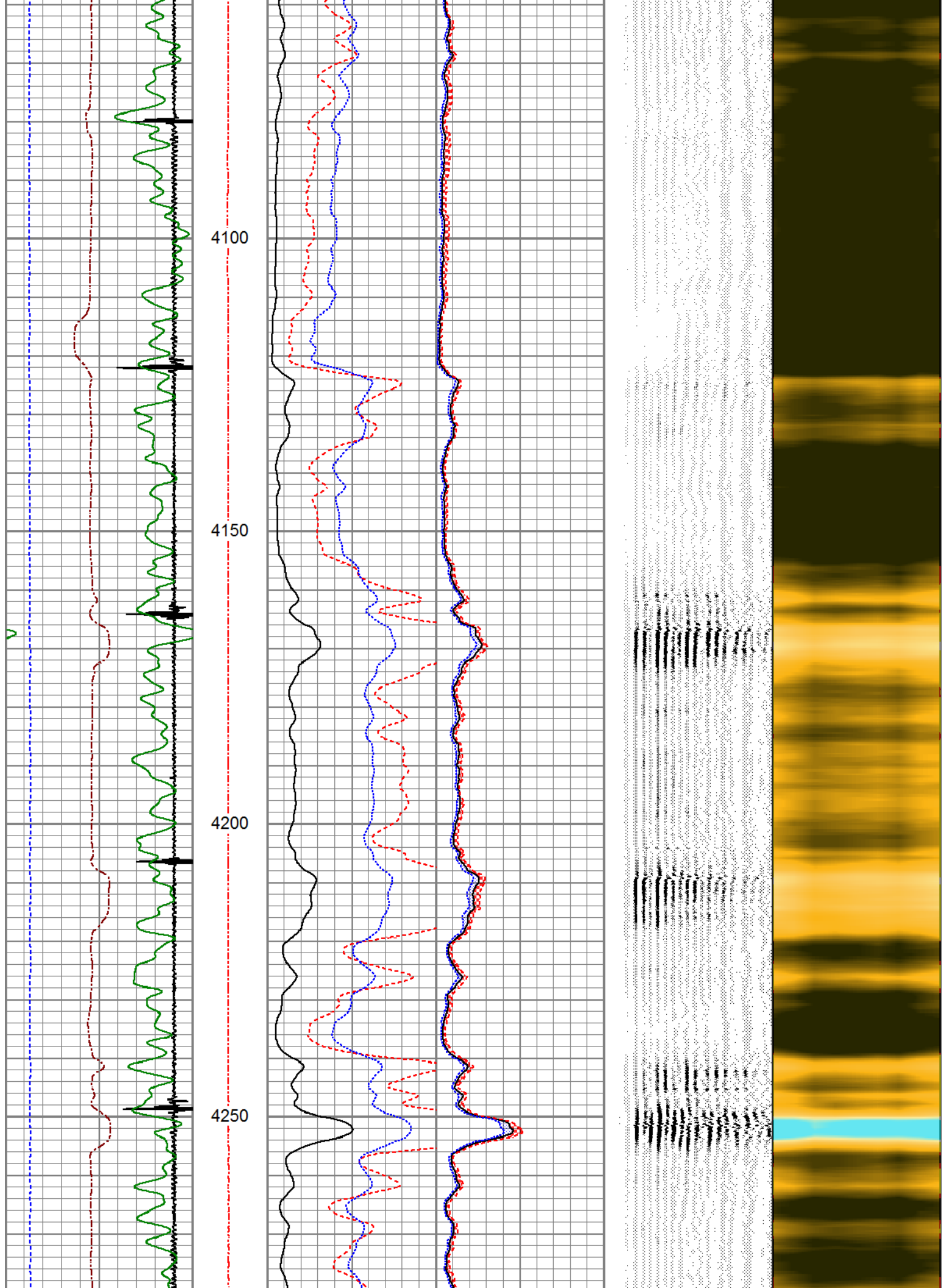
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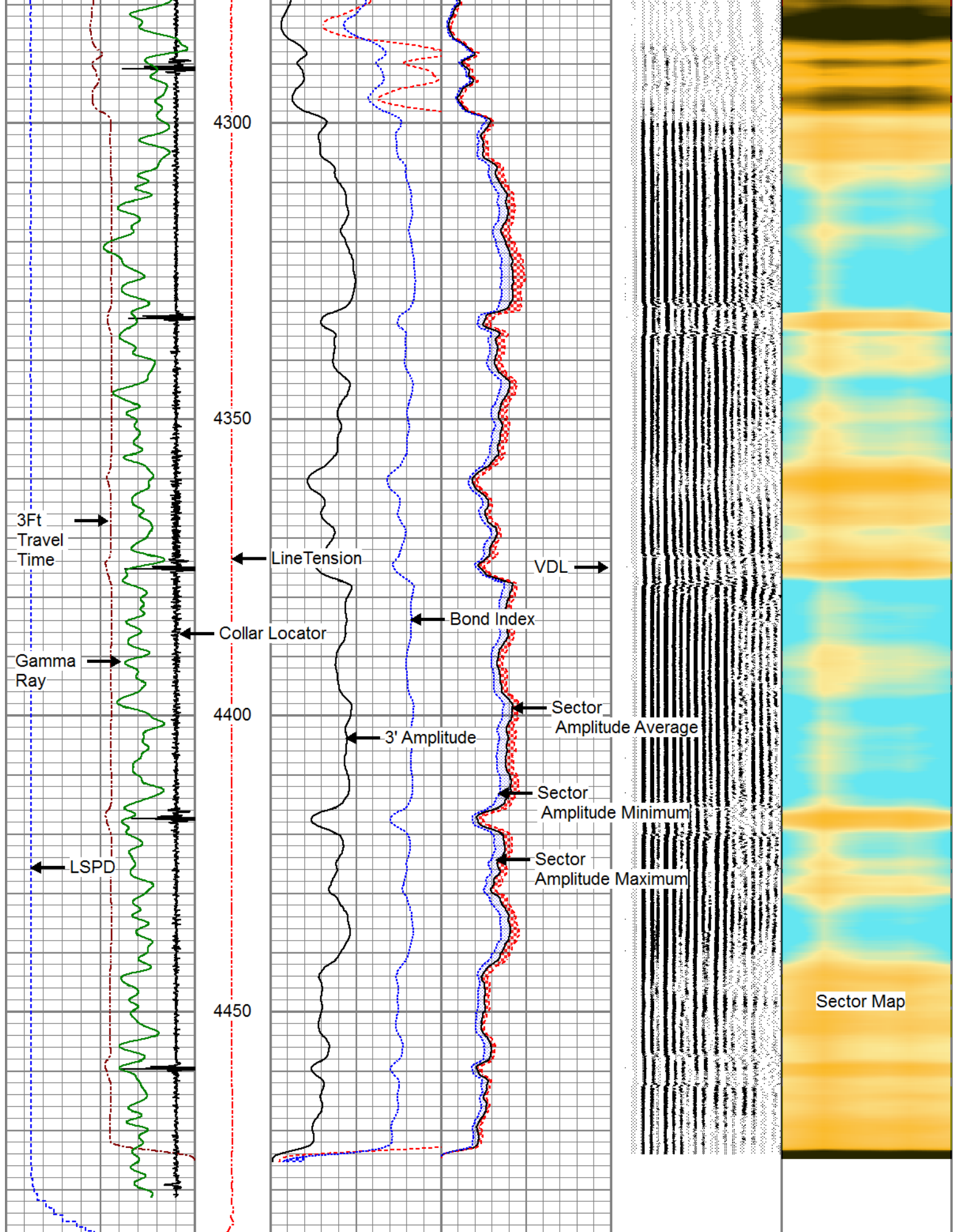
3950

4000

4050








3Ft Travel Time	Line Tension	3' Amplitude	Sector Amplitude Average	VDL	1	Sector Map	8
500 (usec)	(lb)	(mV)		(usec)			
0	0	100	200	1200			

9	Collar Locator	1	0	2000	3' Amplified Amplitude X 5	0	20	150	Sector Amplitude Maximum	0	150
0	(GAPI)	180			(mV)				Sector Amplitude Minimum	0	150
-100	LSPD (ft/min)	100			Bond Index	0	0	150			

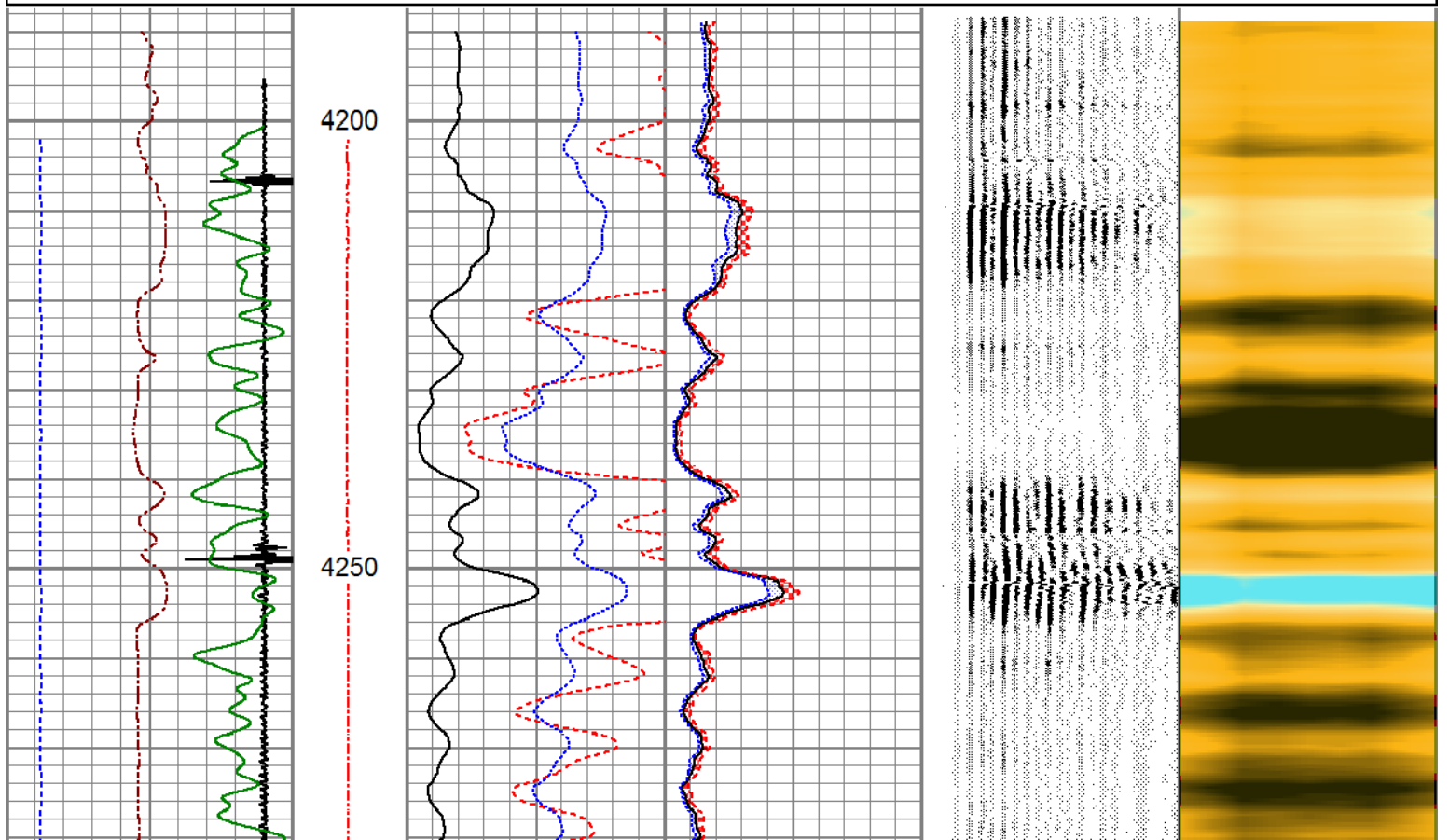


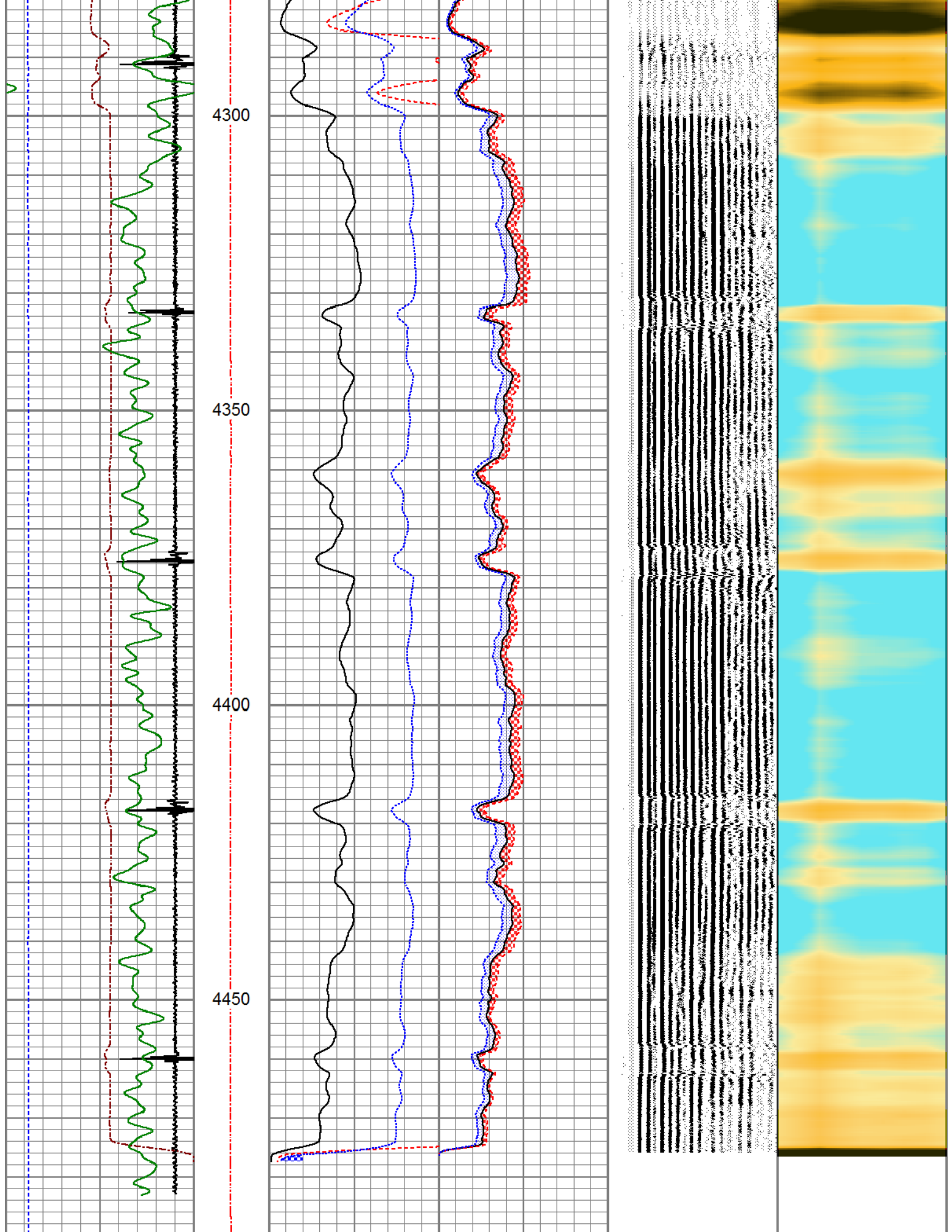
## REPEAT SECTION

### ZERO PSI APPLIED AT SURFACE

Database File: anadarko\_pioneer 1-11\_0512329644\_20190516\_scbl.db  
 Dataset Pathname: pass13  
 Presentation Format: pinr\_scbl  
 Dataset Creation: Thu May 16 14:50:52 2019  
 Charted by: Depth in Feet scaled 1:240

3Ft Travel Time	ineTensio	3' Amplitude	Sector	VDL	1	Sector Map	8
500 (usec)	(lb)	(mV)	Amplitude Average	(usec)	1200		
-9 Collar Locator	0 2000	0 100	0 150				
Gamma Ray		3' Amplified Amplitude X 5	Sector Amplitude Maximum				
0 (GAPI)		(mV)	0 150				
-100 LSPD (ft/min)		Bond Index	Sector Amplitude Minimum				
		0 0	0 150				





3Ft Travel Time	Line Tension	3' Amplitude	Sector Amplitude Average	VDL	1 Sector Map 8
500 (usec) 0	(lb)	0 (mV) 100	200	(usec) 1200	

-9	Collar Locator	1	0	2000	3' Amplified Amplitude X 5	0	150
0	Gamma Ray (GAPI)	180	0	(mV)	20	Sector Amplitude Maximum	
-100	LSPD (ft/min)	100	1	Bond Index	0	0	150
						Sector Amplitude Minimum	
						0	150

**Calibration Report**

Database File      anadarko\_pioneer 1-11\_0512329644\_20190516\_scbl.db  
Dataset Pathname   pass15  
Dataset Creation    Thu May 16 14:59:03 2019

**Gamma Ray Calibration Report**

Serial Number:                   110246  
Tool Model:                       GR/CCL-A  
Performed:                        (Not Performed)

Calibrator Value:                1.0                   GAPI

Background Reading:            0.0                   cps  
Calibrator Reading:              1.0                   cps

Sensitivity:                      1.0000               GAPI/cps

**Segmented Cement Bond Log Calibration Report**

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

Calibration Casing Diameter:   4.500                in  
Calibration Depth:               2342.483            ft

Master Calibration, performed Thu May 16 14:41:33 2019:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.000	0.857	1.000	81.196	93.545	1.000
CAL	0.000	1.500				
5'	0.000	0.676	1.000	81.196	118.556	1.000
SUM						
S1	0.000	1.024	0.000	100.000	97.673	0.000
S2	0.000	1.229	0.000	100.000	81.357	0.000
S3	0.000	1.132	0.000	100.000	88.335	0.000
S4	0.000	0.927	0.000	100.000	107.832	0.000
S5	0.000	0.897	0.000	100.000	111.469	0.000
S6	0.000	0.906	0.000	100.000	110.394	0.000
S7	0.000	0.872	0.000	100.000	114.666	0.000
S8	0.000	0.882	0.000	100.000	113.350	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**

Pioneer Energy Services

Company	ANADARKO PETROLEUM CORP.
Well	PIONEER 1-11
Field	WATTENBERG
County	WELD
State	COLORADO