



**Segmented Radial Cement Bond  
W/Gamma Ray, CCL  
Log**

Company Antero Resources Corporation Well Treasury Unit 2H Field Marcellus County Tyler State WV Country US	Company Antero Resources Corporation Well Treasury Unit 2H Field Marcellus County Tyler State WV Country US	Location: API #: 47095025570000 Other Services	Permanent Datum Log Measured From R.K.B. 25' Drilling Measured From R.K.B.	Elevation K.B. D.F. G.L.			
SEC TWP RGE Elevation							
13-NOV-2019 ONE 21901 6780' 6780' Surface 8.25" FW 8.6 134 degF 2720' N/A N/A 214182 Bridgeport,WV S.Butler Jerrako Evans							
<b>Borehole Record</b>							
Run Number	Bit	From	To	Size	Weight	From	To
ONE	24"	Surface	80'				
TWO	17.5"	80'	451'				
THREE	12.25"	451'	2704'				
FOUR	8.25"	2704'	21901'				
<b>Tubing Record</b>							
Casing Record	Size	Wgt/Ft	Top	Bottom			
Surface String	13.375"	54.5	Surface	451'			
Prod. String	9.625"	40	Surface	2704'			
Production String	5.5"	20	Surface	21901'			
Liner							

<<< Fold Here >>>

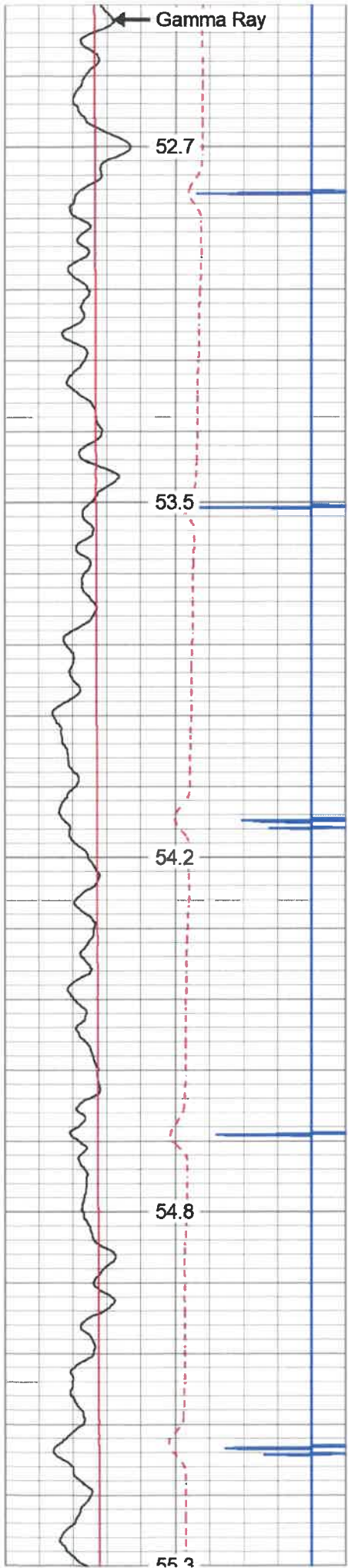
All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages, or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to our general terms and conditions set out in our current Price Schedule.

**Comments**

**Zero @ R.K.B. 25'**  
**Marker Joint 5751' - 5762'**  
**Log TD 6780'**  
**Cement Top @ 2720'**  
**Log Ran Under 1500 PSI**



**Main Pass**



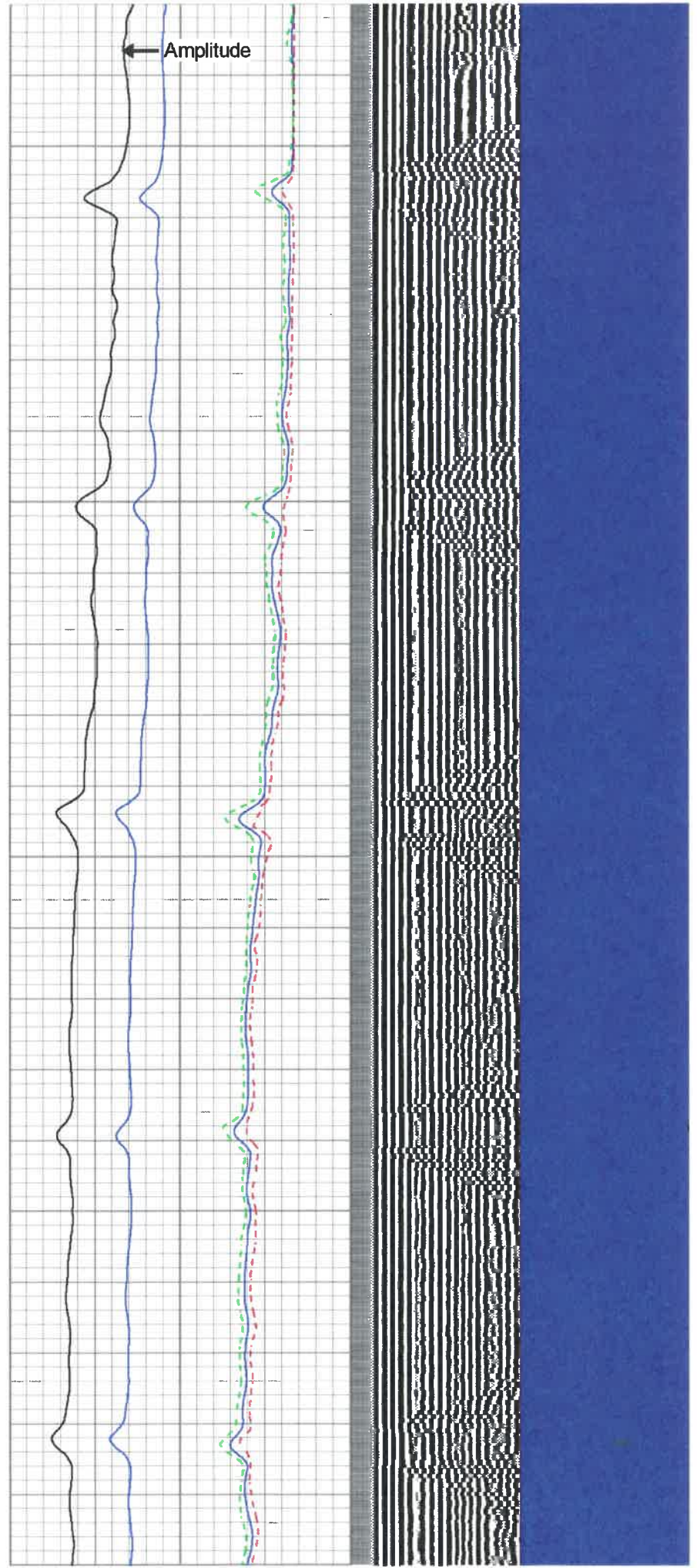
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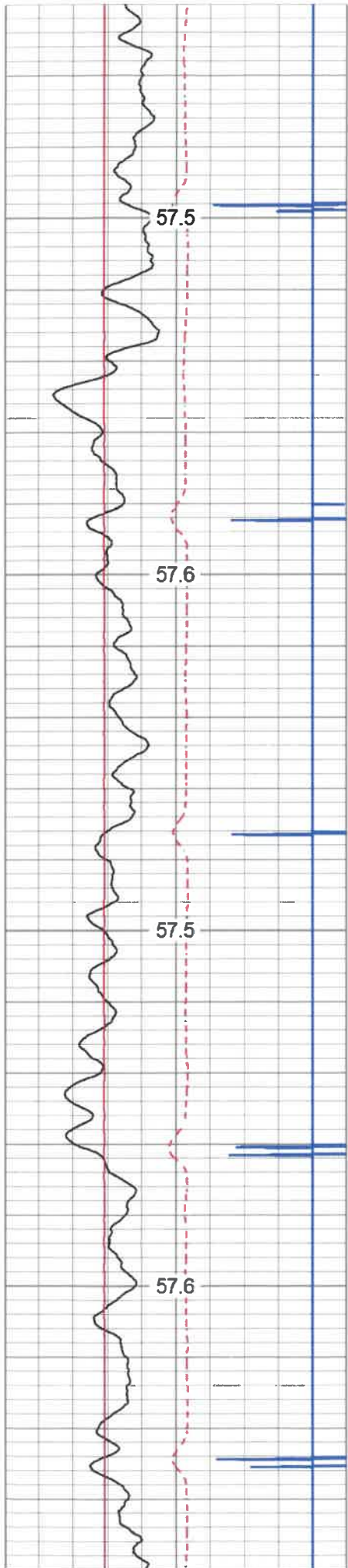
250

300

350

400



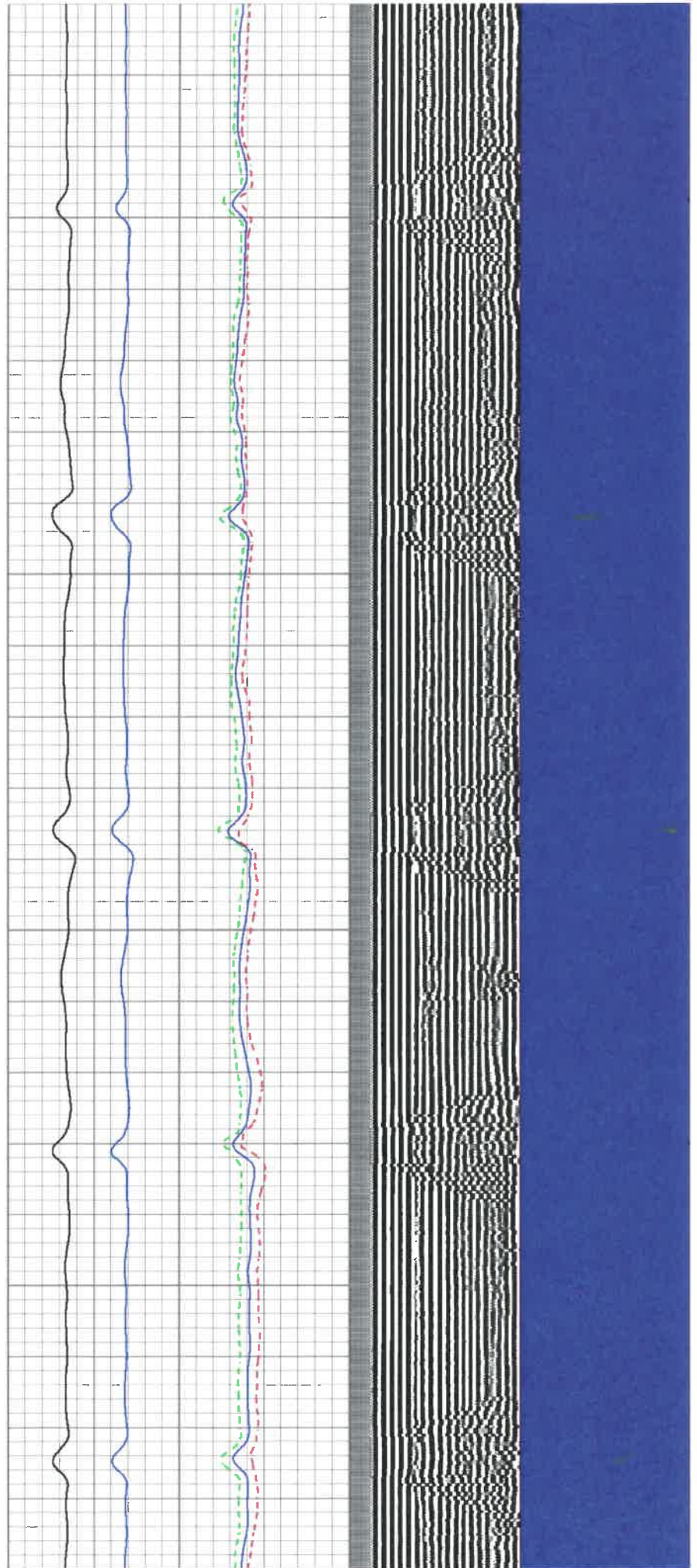


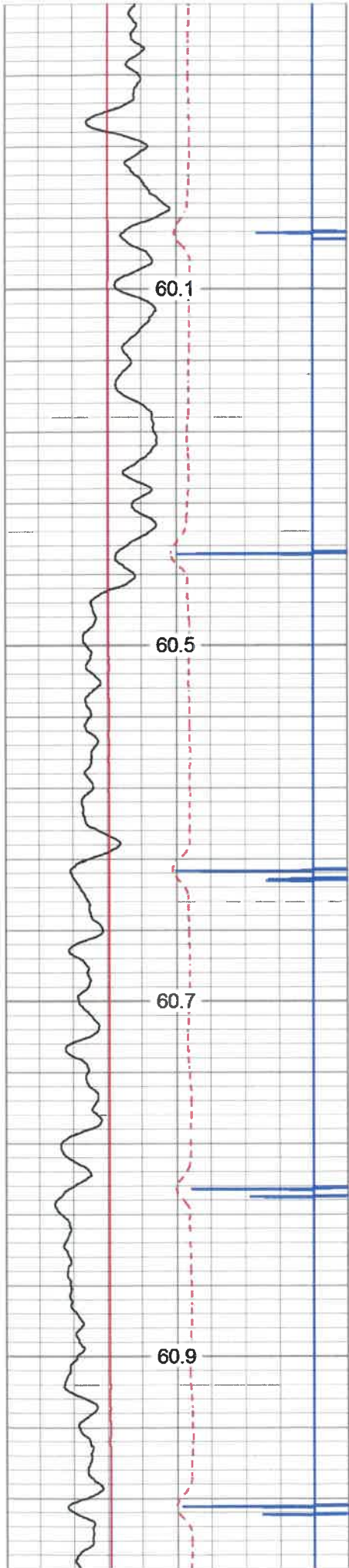
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700

750

800



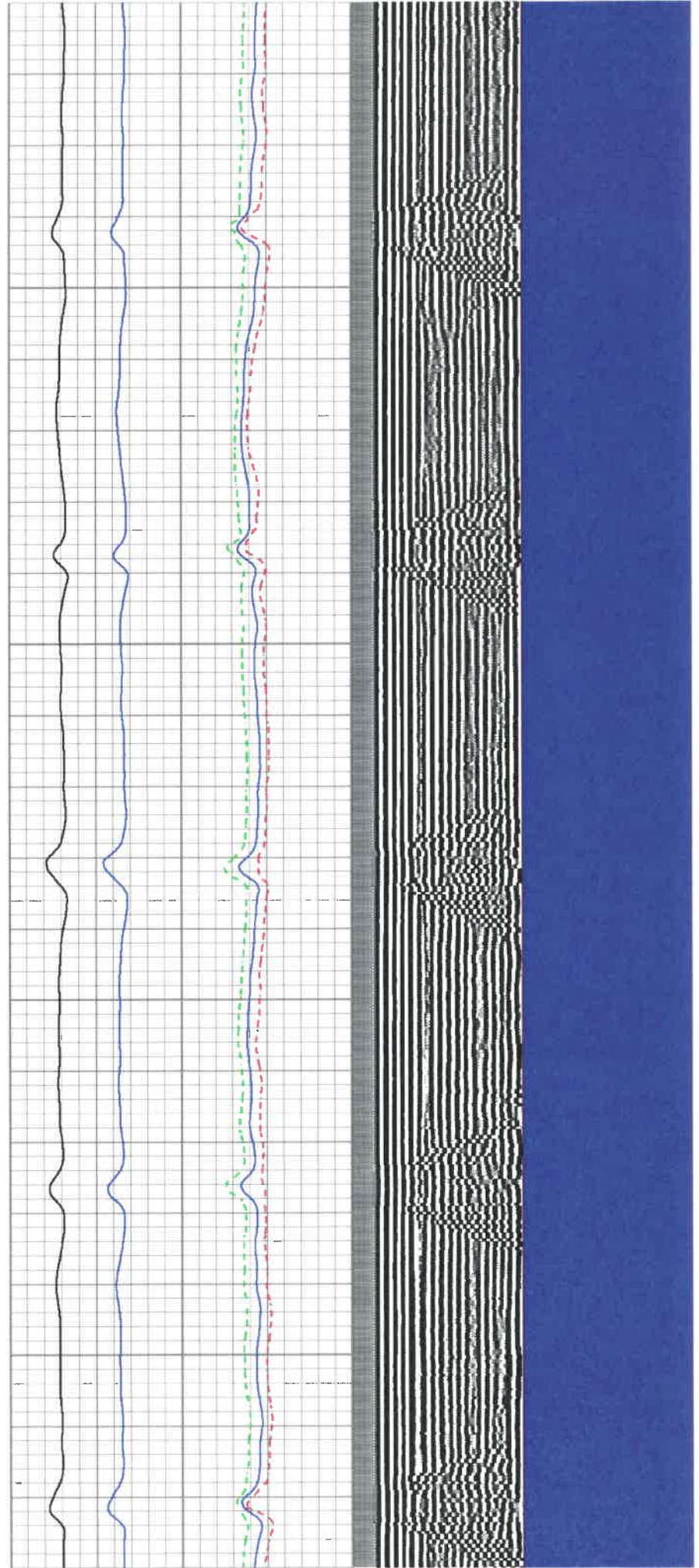


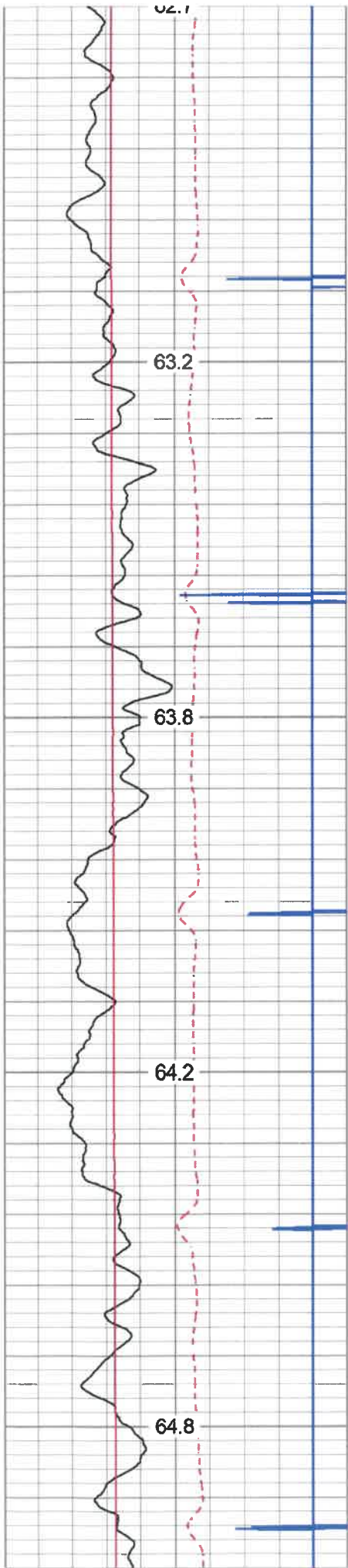
1100

1150

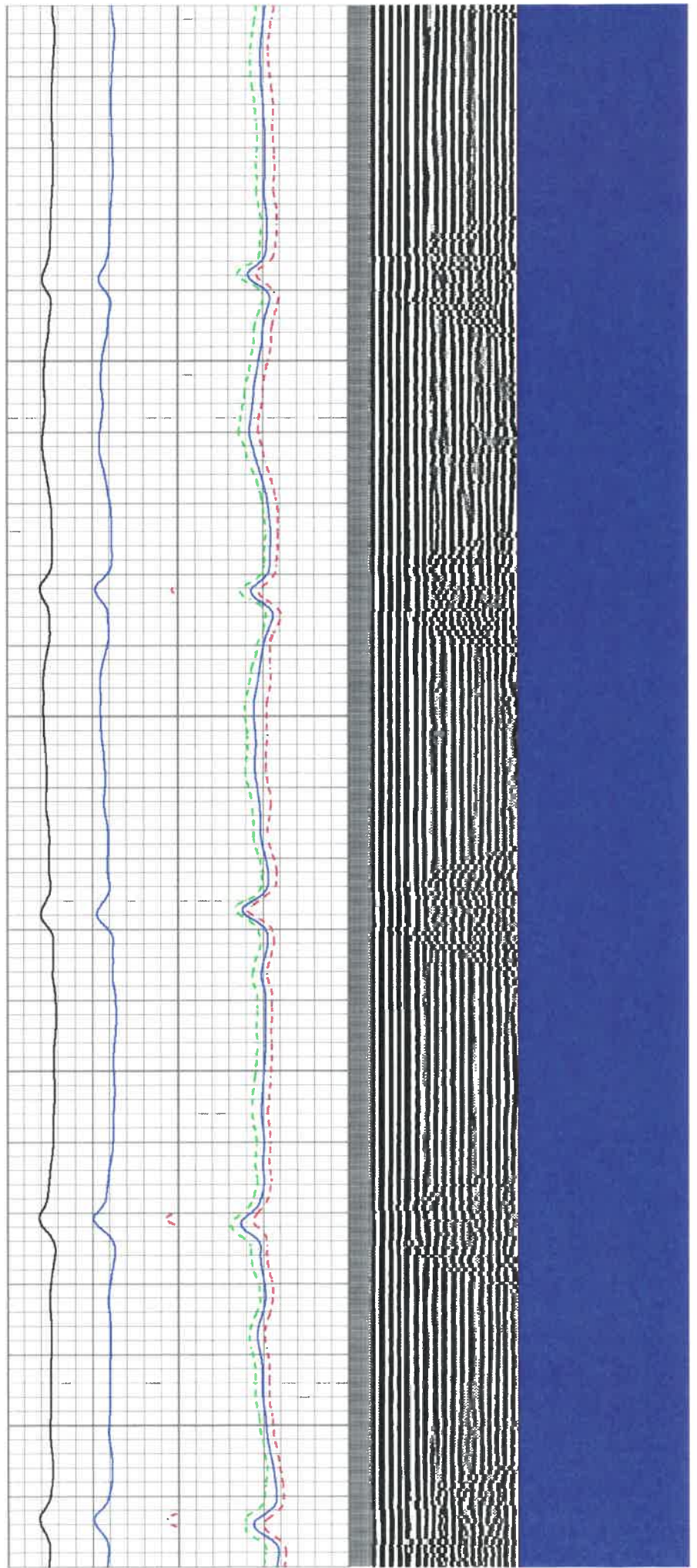
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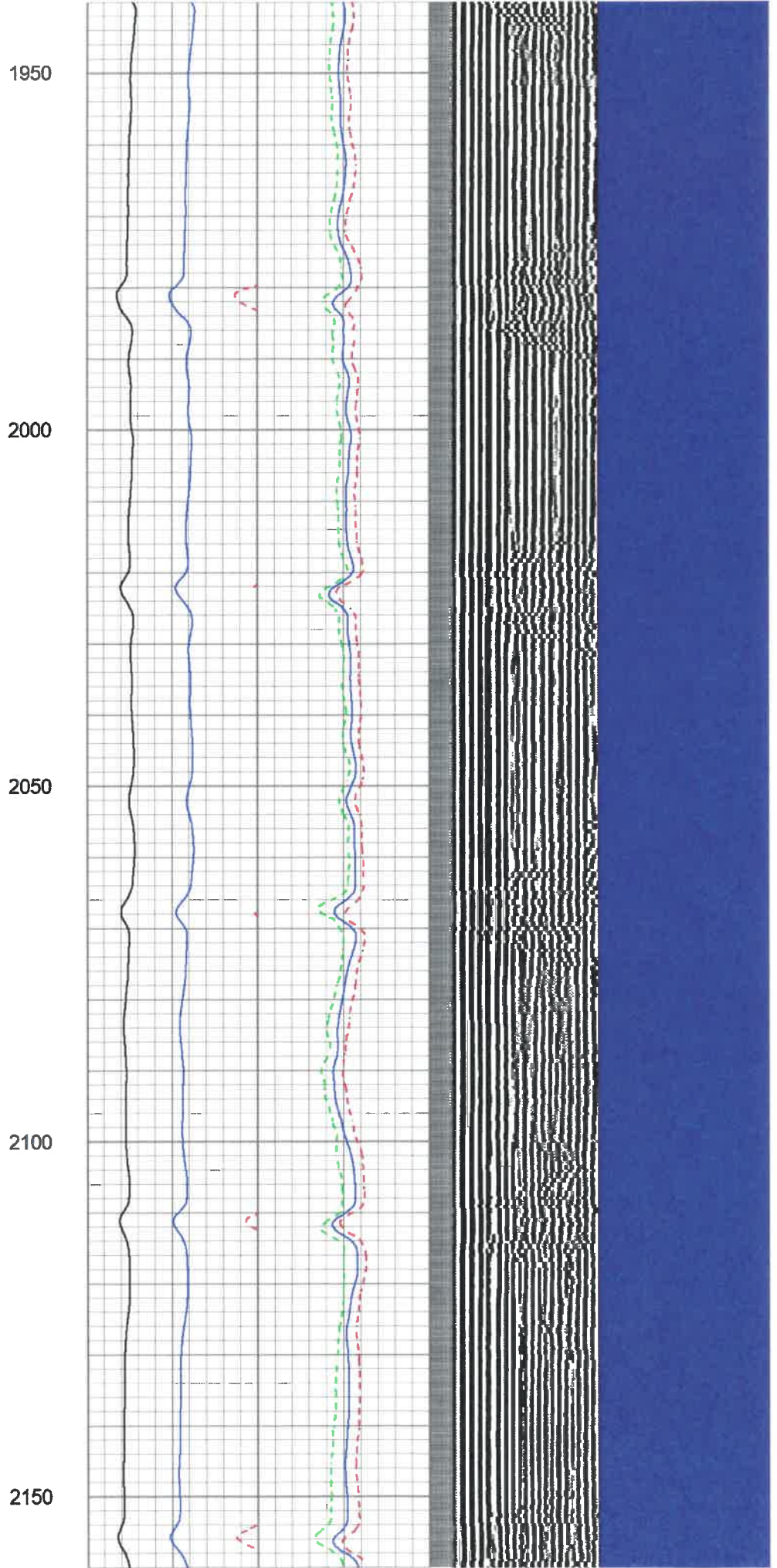
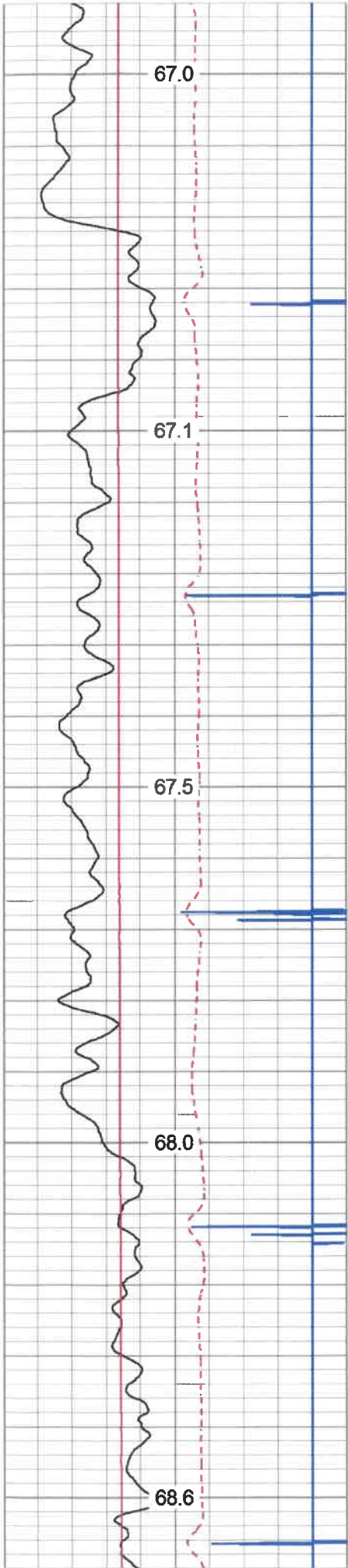
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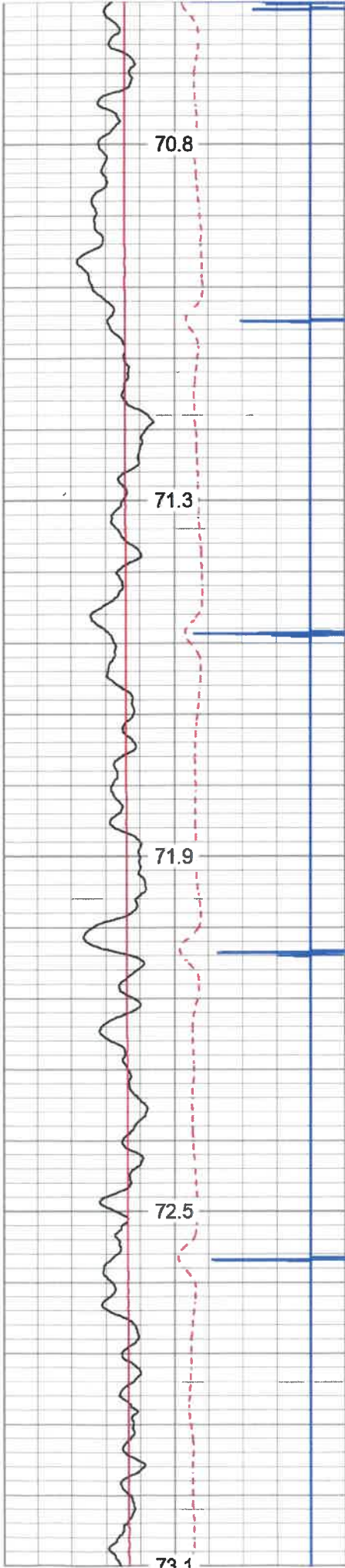




1500  
1550  
1600  
1650  
1700







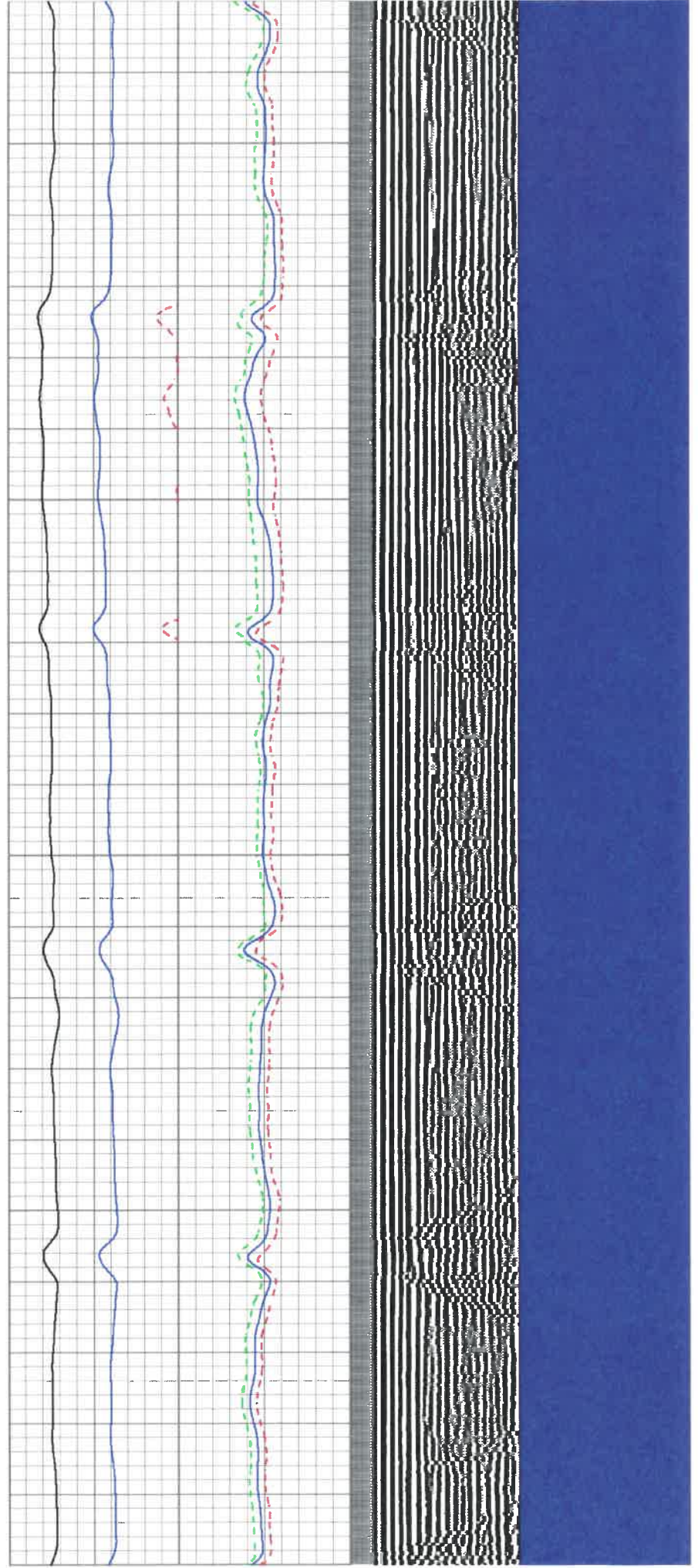
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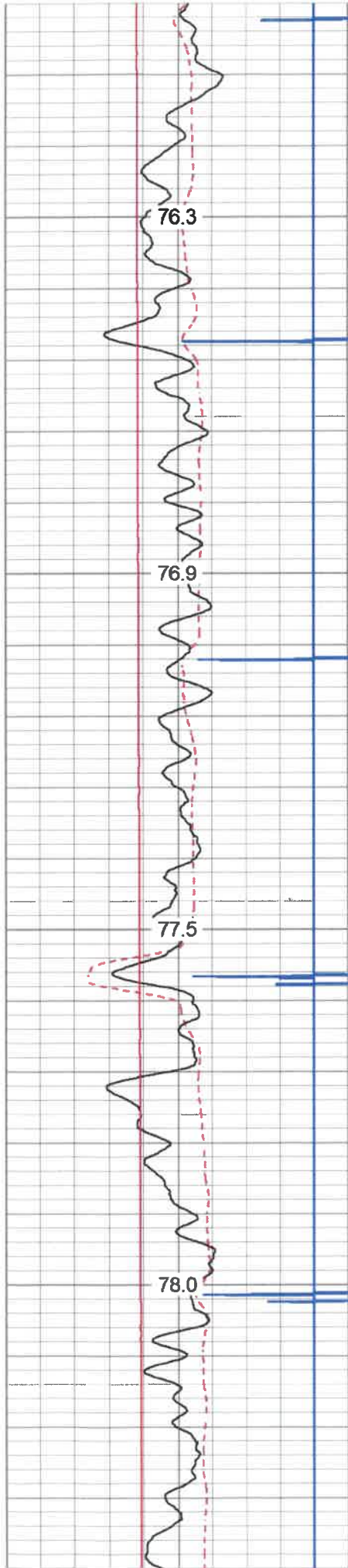
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2500

2550

2600



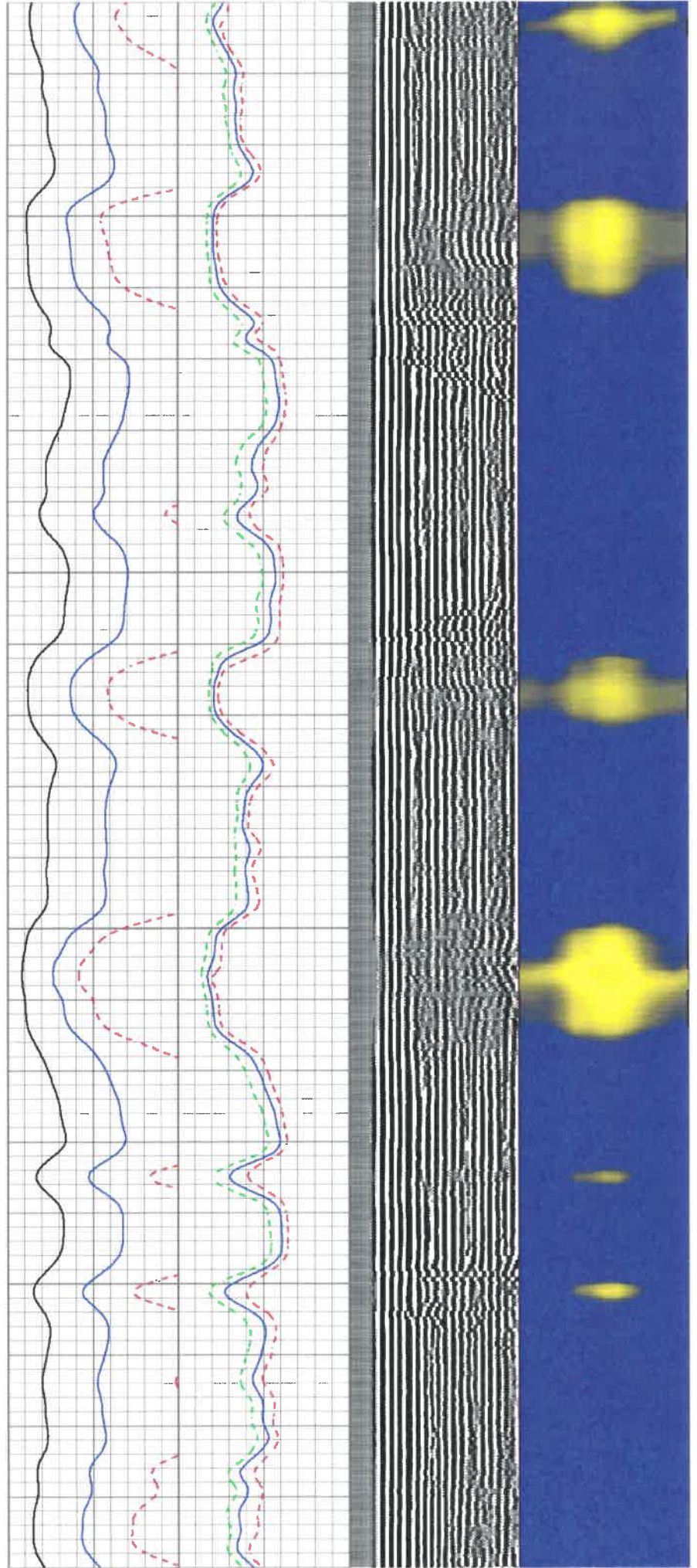


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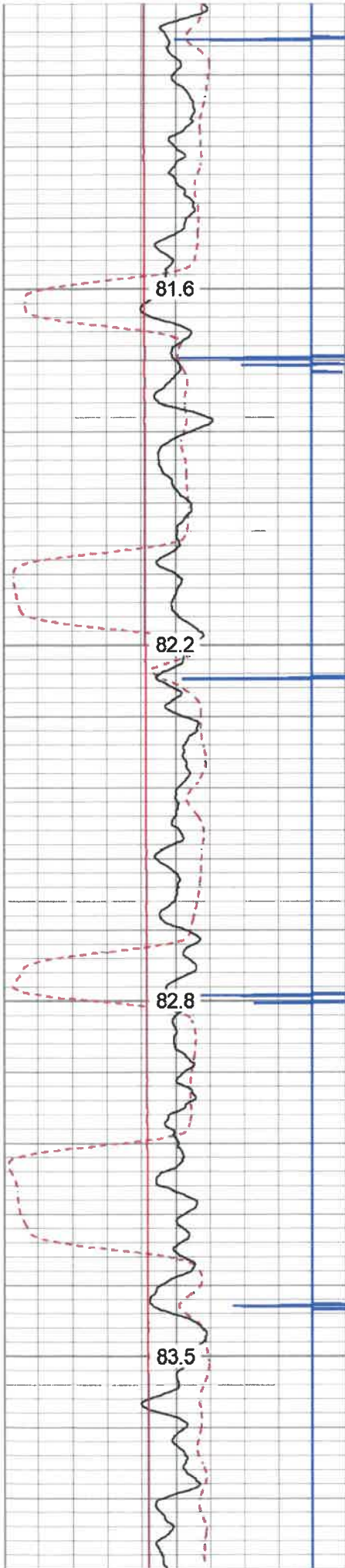
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2950

3000





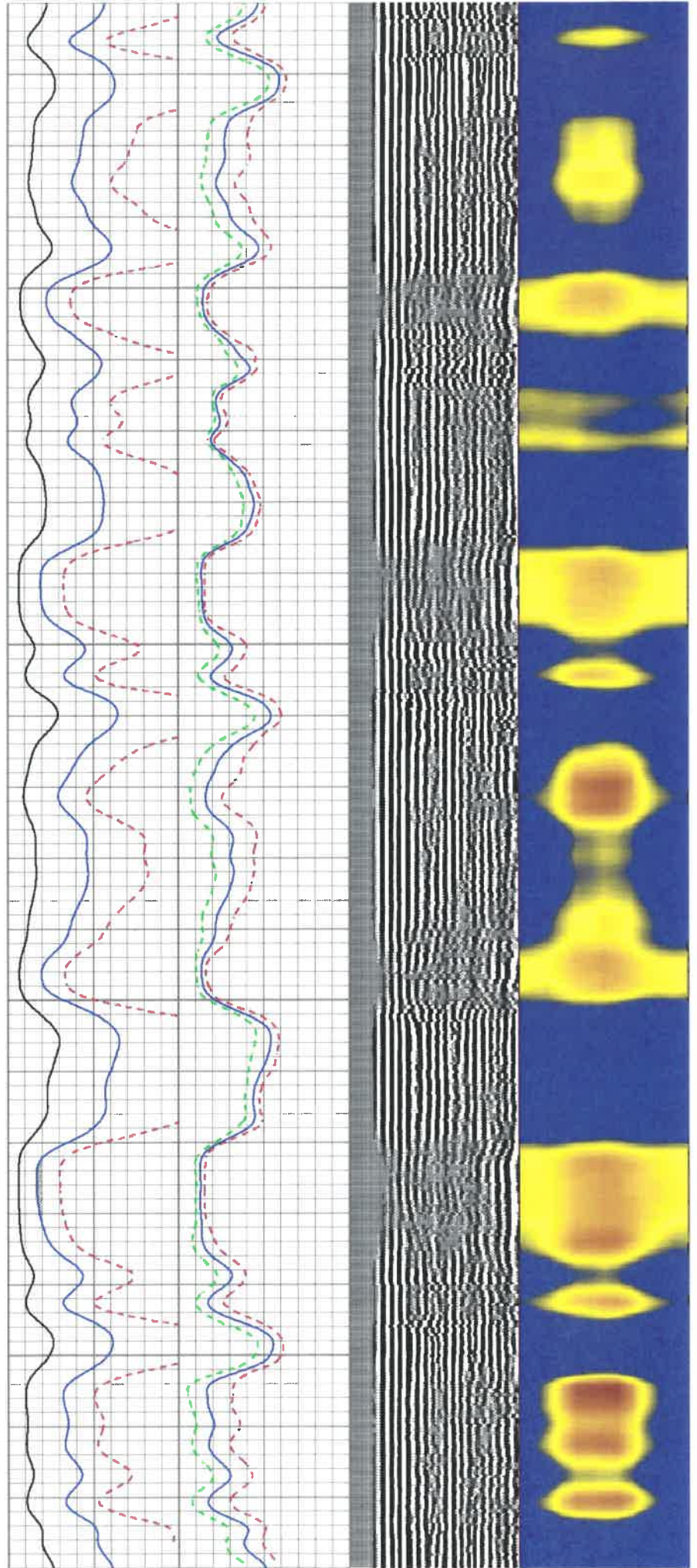


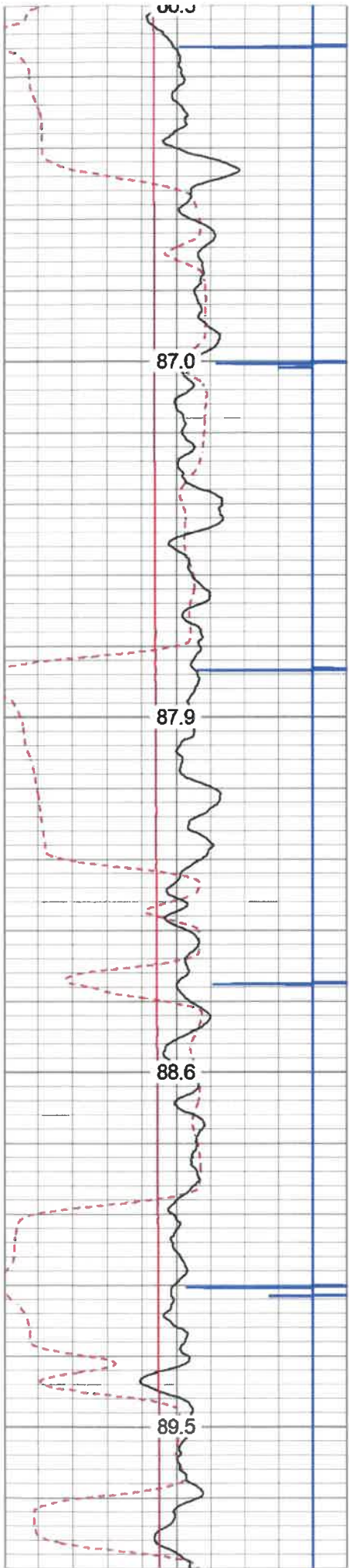
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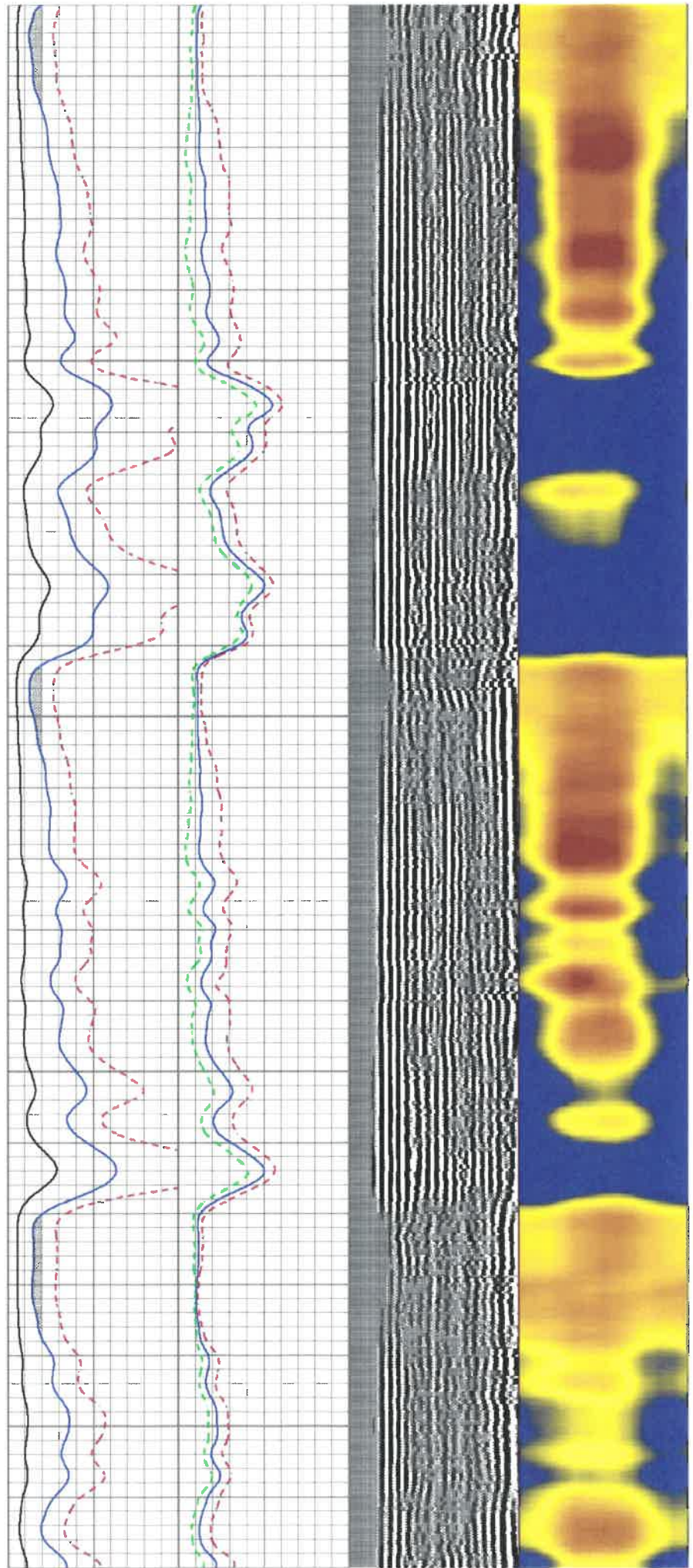
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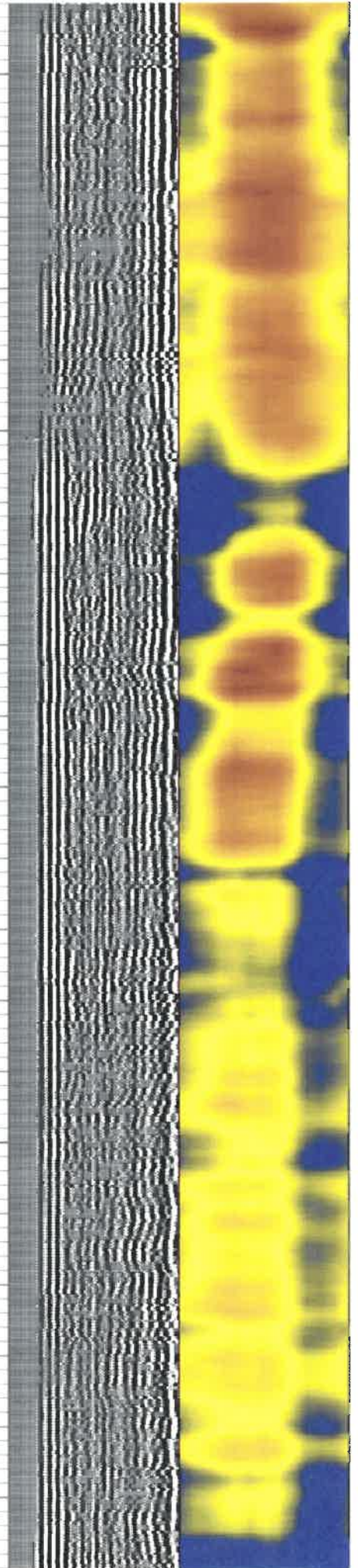
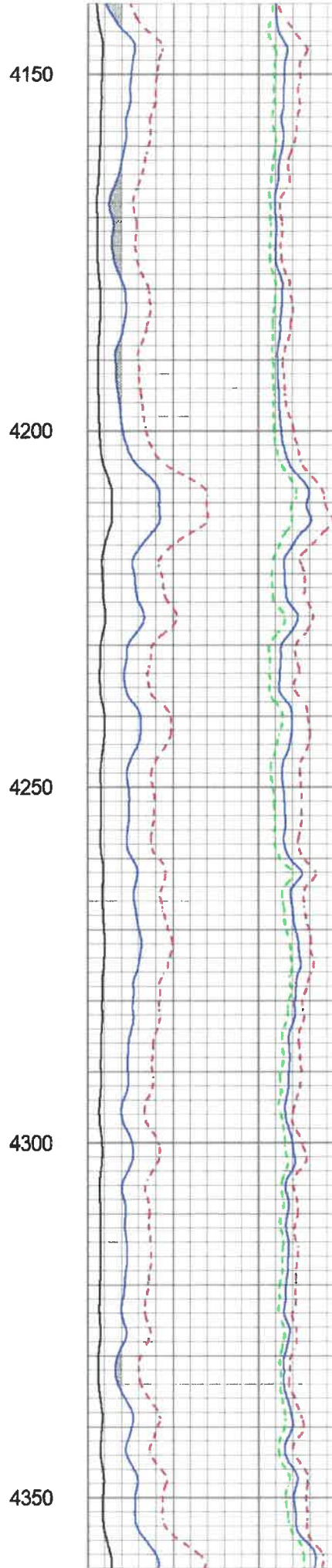
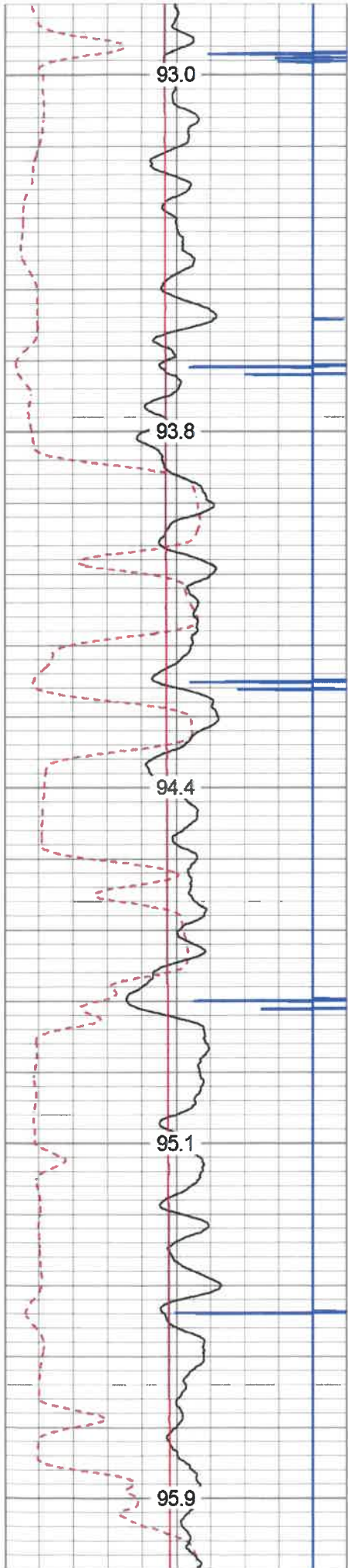
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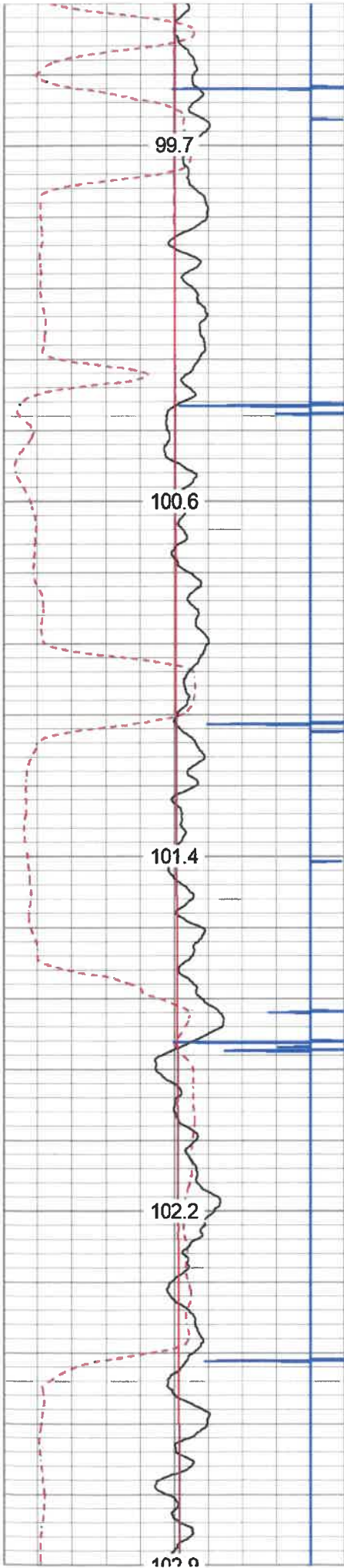




3700  
3750  
3800  
3850  
3900







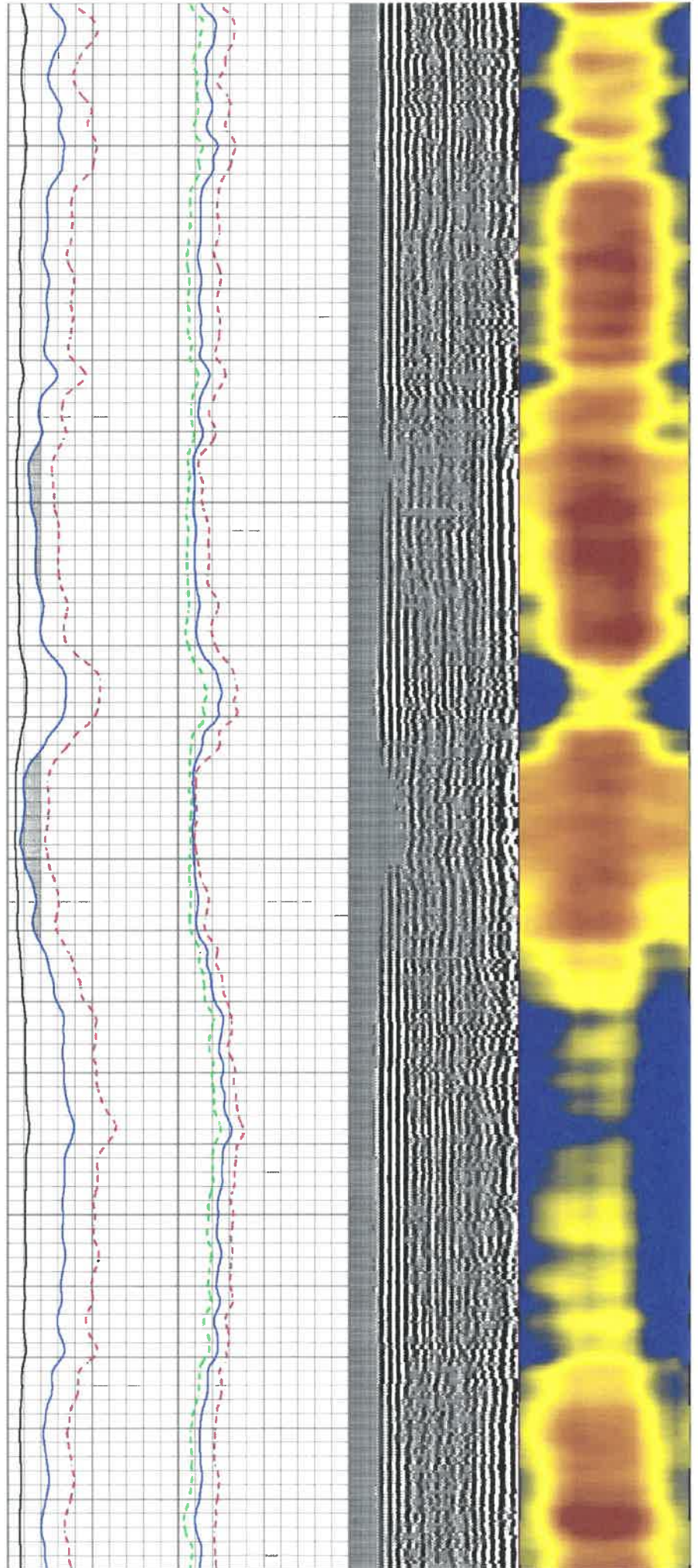
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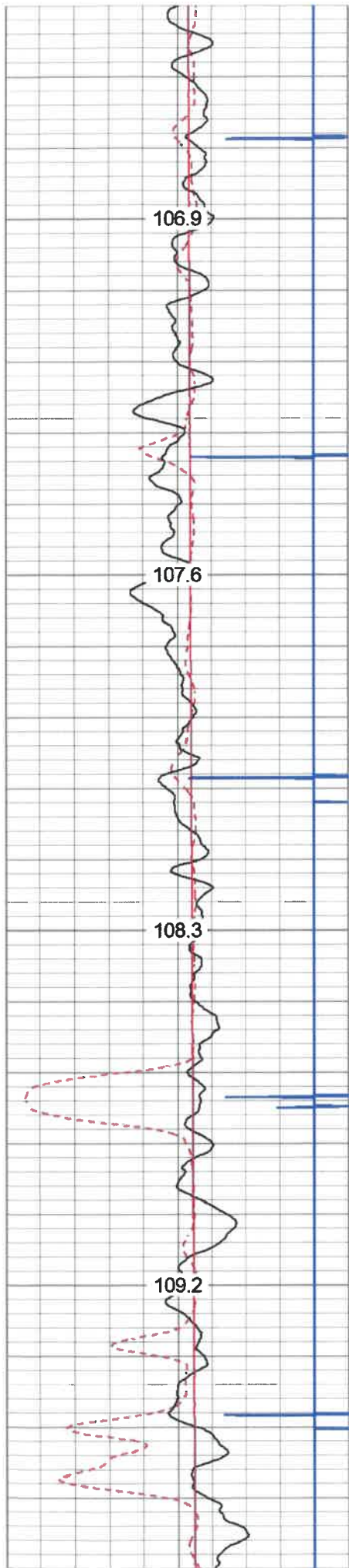
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4700

4750

4800



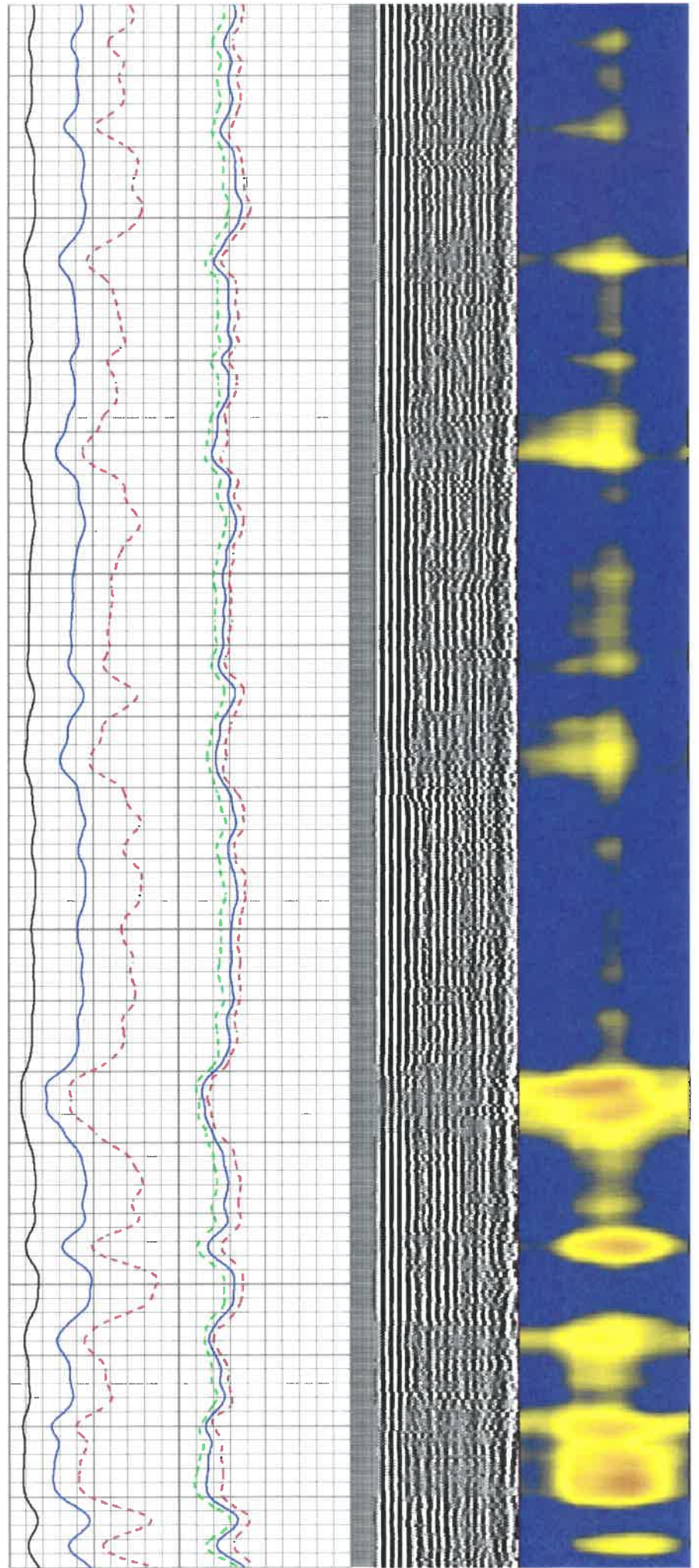


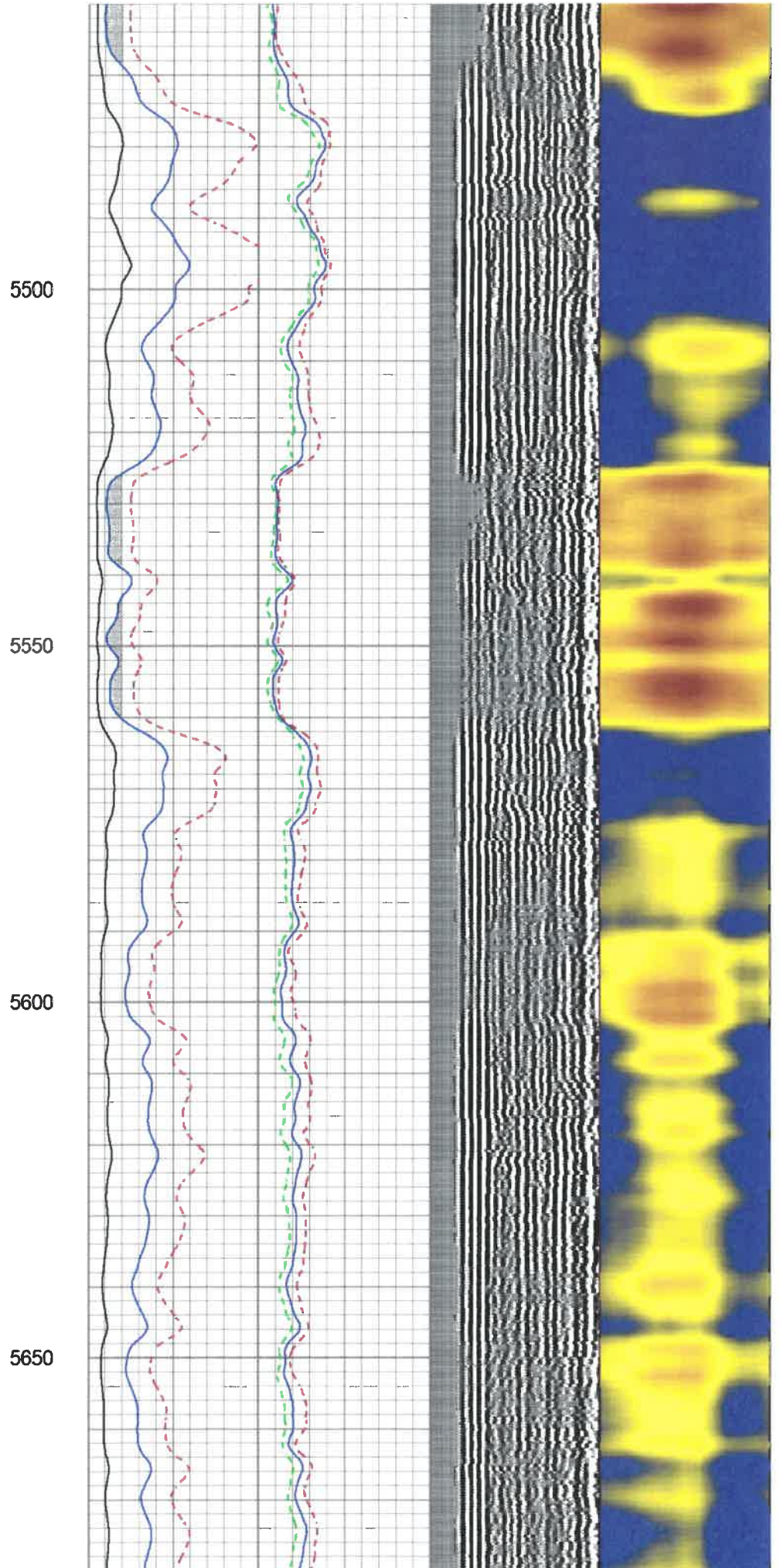
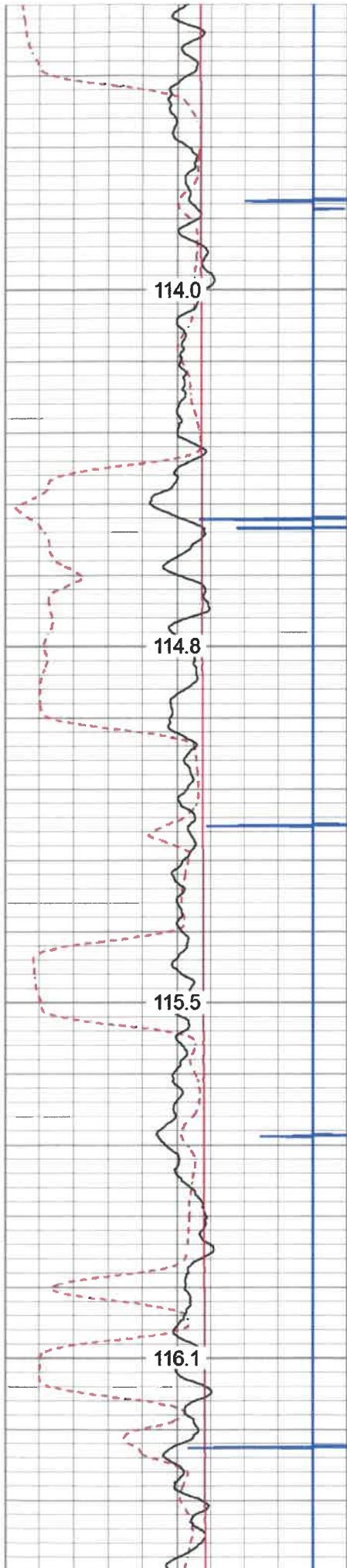
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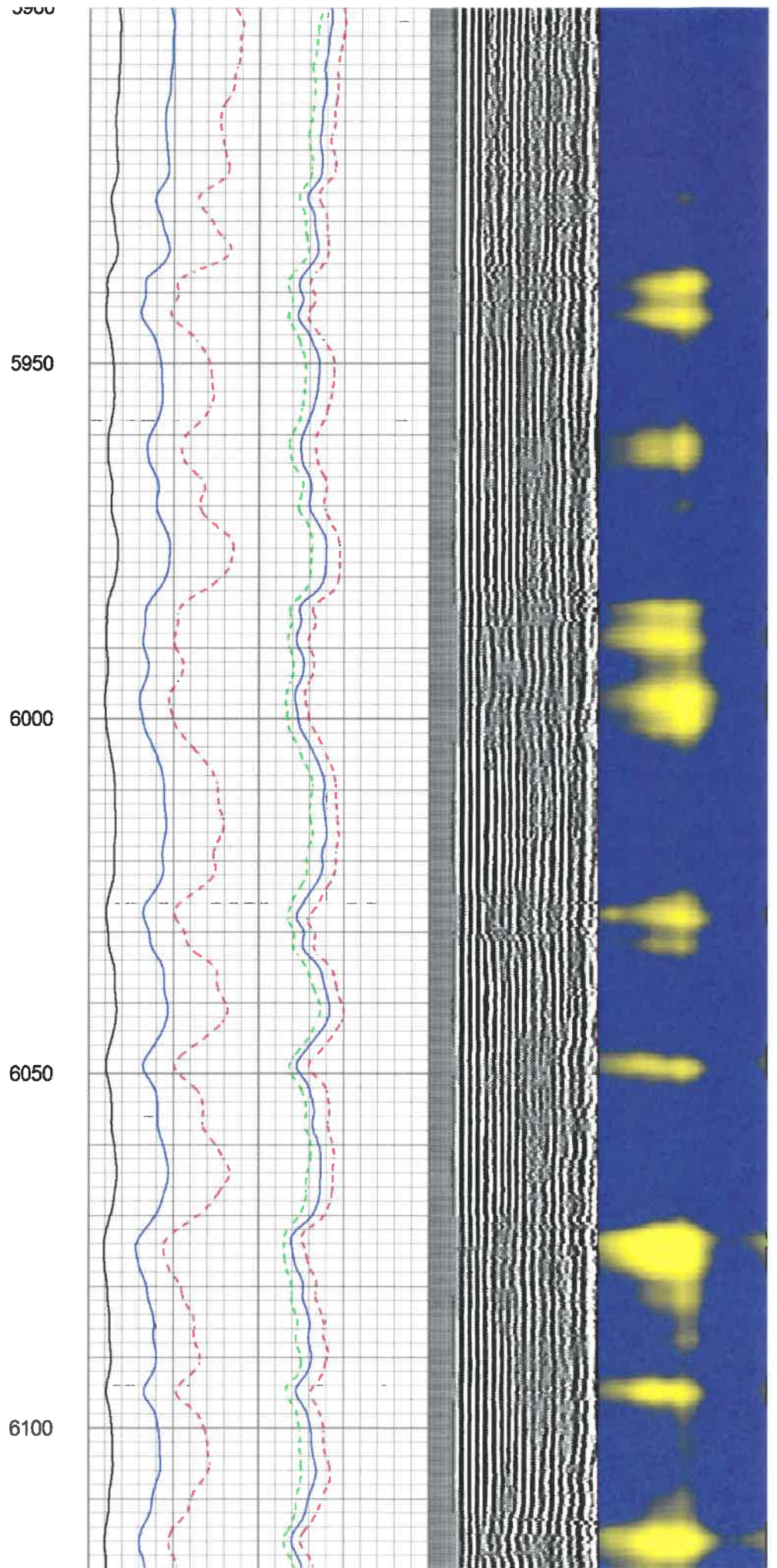
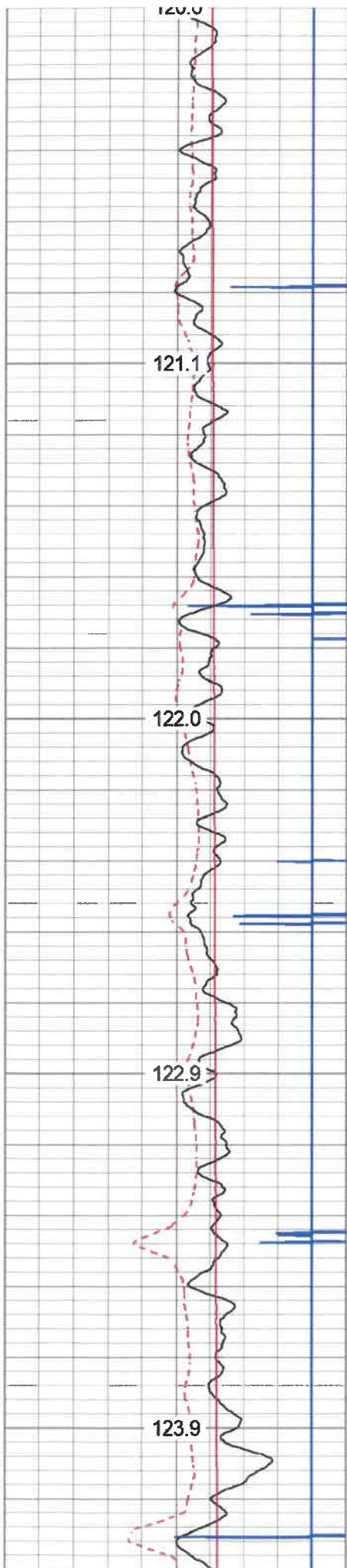
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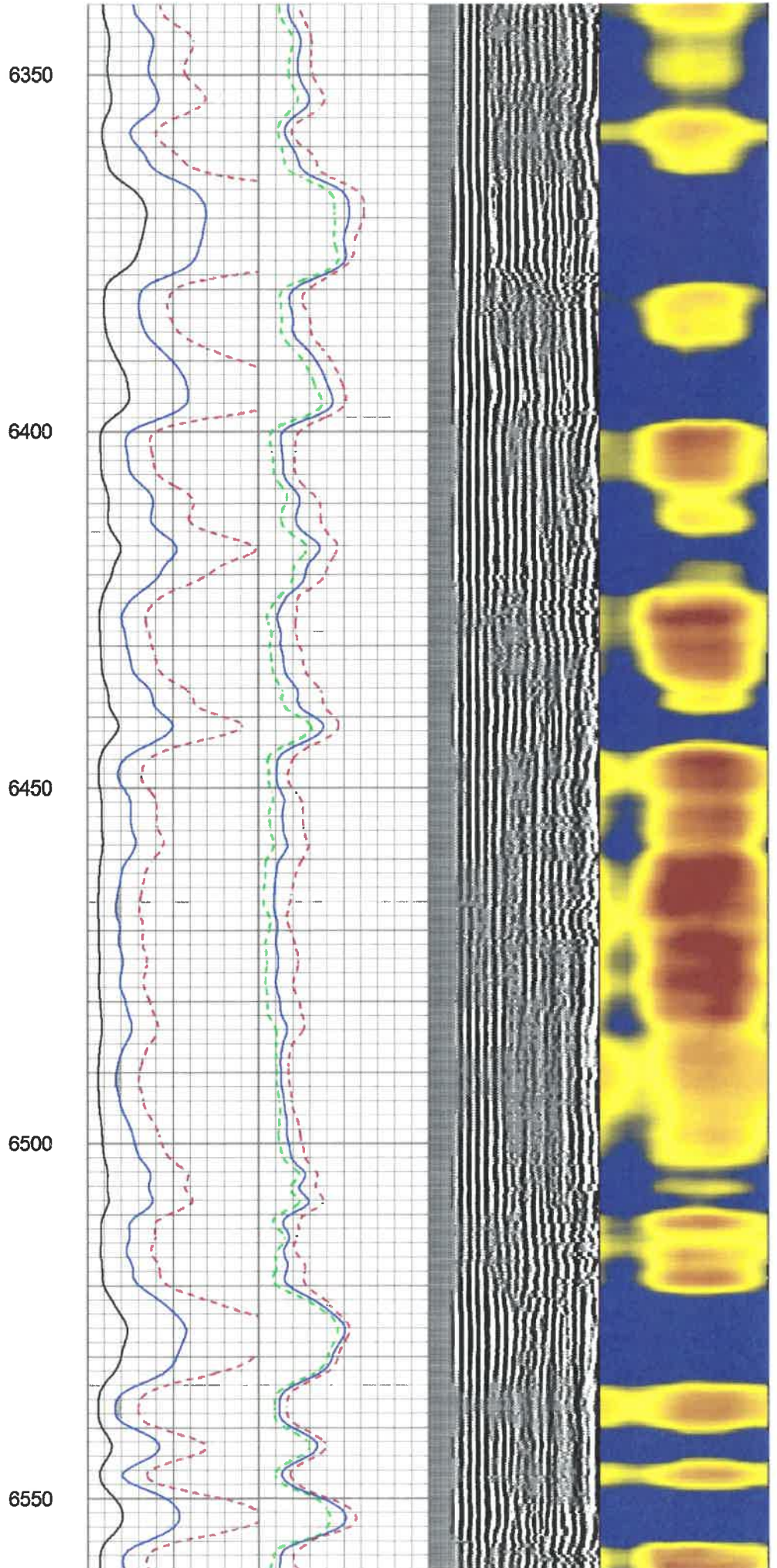
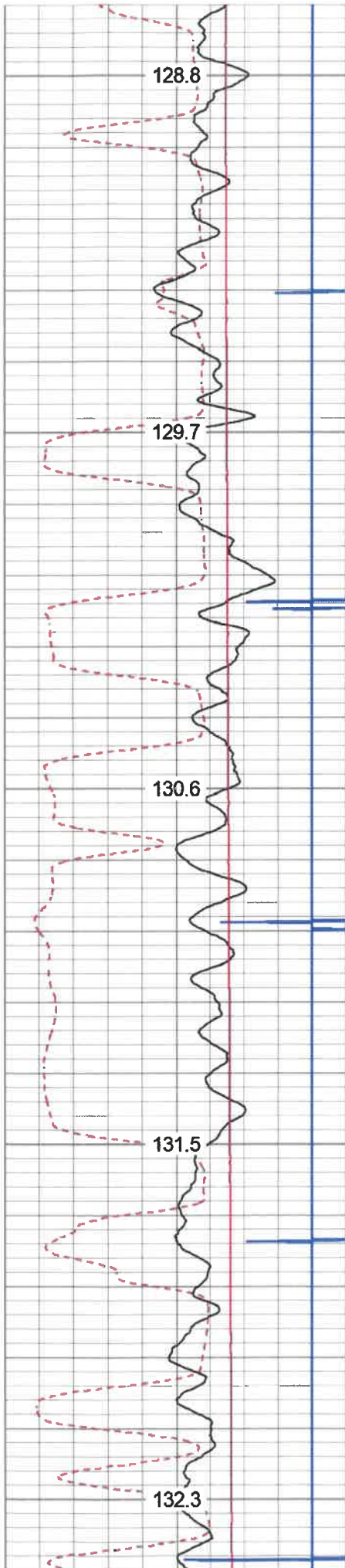
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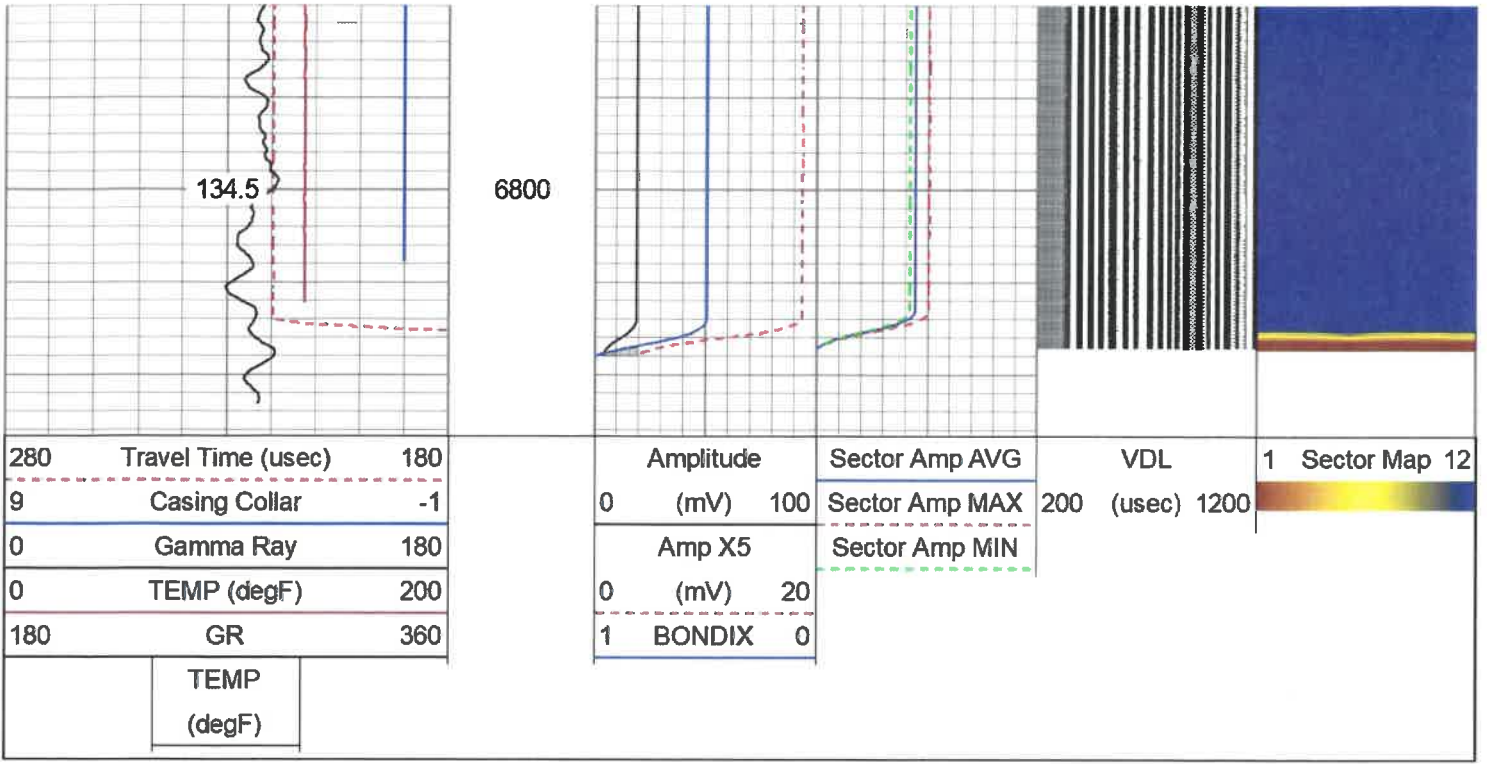






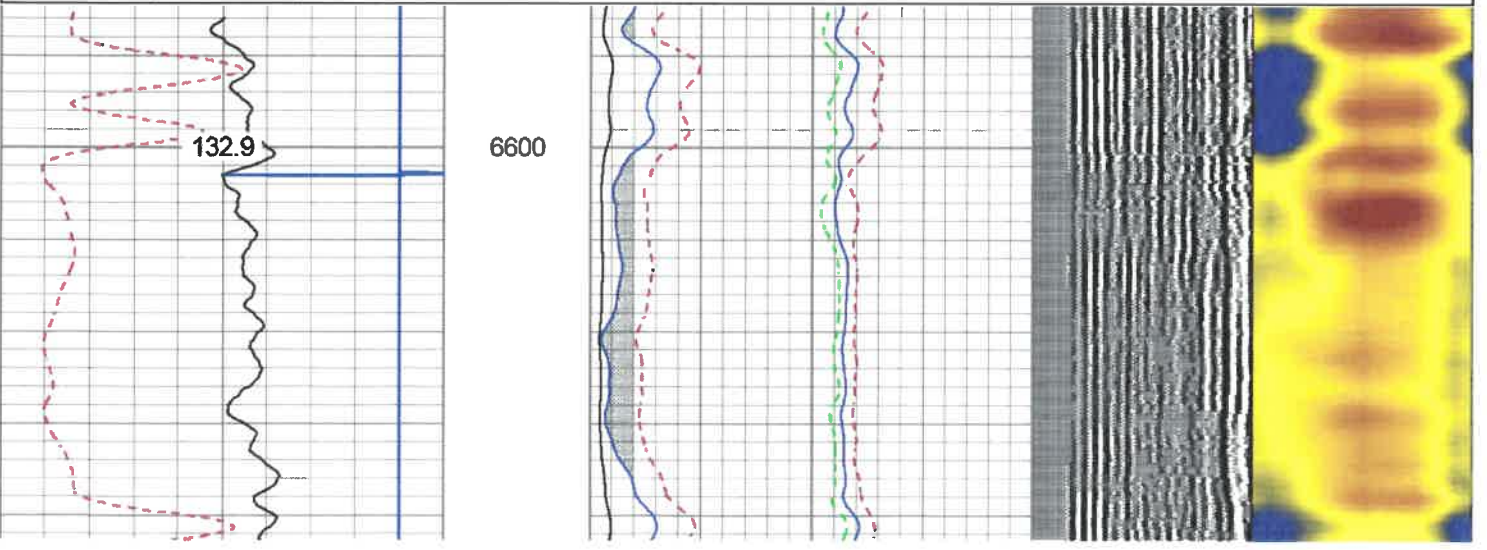
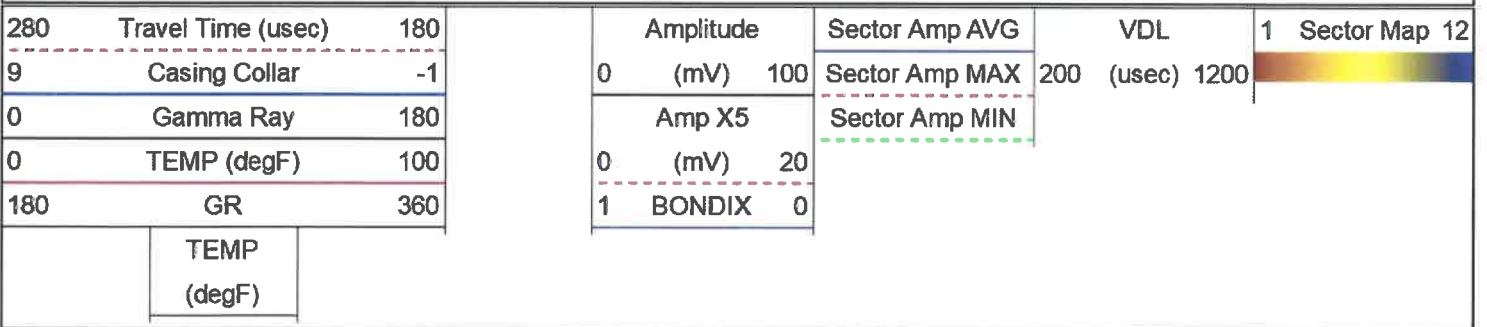






### Repeat Pass

Database File antero\_treasury\_2h.db  
 Dataset Pathname pass1  
 Presentation Format antero  
 Dataset Creation Wed Nov 13 13:20:41 2019  
 Charted by Depth in Feet scaled 1:240



TEMP  
(degF)

# Log Variables

DatabaseC:\ProgramData\Warrior\Data\antero\_treasury\_2h.db  
Dataset field/well/run1/pass2/\_vars\_

## Top - Bottom

BHTEMP_Src TEMP	BOREID in 8.25	BOTTEMP degF 100	CASEOD in 5.5	CASETHCK in 0	CASEWGHT lb/ft 23	MAXAMPL mV 71.9	MINAMPL mV 3.5
MINATTN db/ft 0.8	PERFS No	PPT usec 219	SRFTEMP degF 0	TDEPTH ft 0			

## 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

## Calibration Report

Database File antero\_treasury\_2h.db  
Dataset Pathname pass2  
Dataset Creation Wed Nov 13 13:32:29 2019

### Gamma Ray Calibration Report

Serial Number: IPSNO-03  
Tool Model: Tek-Co 2 3/4  
Performed: Tue Nov 12 16:11:18 2019

Calibrator Value: 1.0

Background Reading: 0.0 cps  
Calibrator Reading: 1.0 cps

Sensitivity: 0.5000 /cps

### Segmented Cement Bond Log Calibration Report

Serial Number: IOL40-05  
Tool Model: Tek12

Calibration Casing Diameter: 5.500 in  
Calibration Depth: 66.642 ft

Master Calibration, performed Tue Nov 12 20:22:37 2019:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.037	1.186	3.500	71.921	59.551	1.270
CAL	0.012	0.565				
5'	0.006	1.204	3.500	71.921	57.152	3.131
SUM						

WVFS2	11.48					
WVFS1	11.48					
WVFCAL	10.73					
WVF3FT	10.73					
WVF5FT	9.73					
WVFSYNC	6.40					
WVFTEMP	6.40					
GR	1.04		Tek-2.75 2 3/4" Tekco Adjustable Centralizer	2.73	2.75	25.00
			GR-Tek-Co 2 3/4 (IPSNO-03) Tekco 2 3/4" 400 Deg. F Logging Gamma Ray	3.67	2.75	40.00
		Dataset: antero_treasury_2h.db: field/well/run1/pass2 Total length: 20.07 ft Total weight: 250.00 lb O.D.: 3.25 in				

	Company	Antero Resources Corporation		
	Well	Treasury Unit 2H		
	Field	Marcellus		
	County	Tyler		
	State	WV	Country	US