



**Radial Cement Bond
Variable Density Log
W/ Gamma/ CCL./ Temp.**

Company Antero Resources
Well Elden Cluster 1H
Field River Front
County Tyler
State WV

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Field River Front
County Tyler State WV

Location: API #: 47-095-02776

SEC	TWP	RGE	Elevation
Permanent Datum	Ground Level	Elevation	K.B.
Log Measured From	Kelly Bushing 30' A.P.D.		D.F.
Drilling Measured From	Kelly Bushing		G.L.

Date	16-Sep-2022						
Run Number	One						
Depth Driller	24,275'						
Depth Logger	6,736'						
Bottom Logged Interval	6,746'						
Top Log Interval	Surface						
Open Hole Size	8.75"						
Type Fluid	Water						
Density / Viscosity	8.3#						
Max. Recorded Temp.	140 Deg.F.						
Estimated Cement Top	5,550'						
Time Well Ready	13:45						
Time Logger on Bottom	14:15						
Equipment Number	104 P2 G2						
Location	Charleroi						
Recorded By	Matt McNally						
Witnessed By	Justin Deffie						
Borehole Record		Tubing Record					
Run Number	Bit	From	To	Size	Weight	From	To
Casing Record				Size	Wgt/Ft	Top	Bottom
Conductor String							
Surface String							
Intermediate String							
Intermediate String							
Production String		5 1/2"		23#		Surface	24,275'

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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

Primary Log on Well
Log Correlated to Marker Joint at 5,741'-5,753'
Depth Shift -28'
Main Pass 1,500 PSI
Repeat Pass 0 PSI
100 % Free Pipe= 71.9mv
100 % Bond=3.4mv

Thank You for Choosing Nine Energy of Charleroi, Pa.



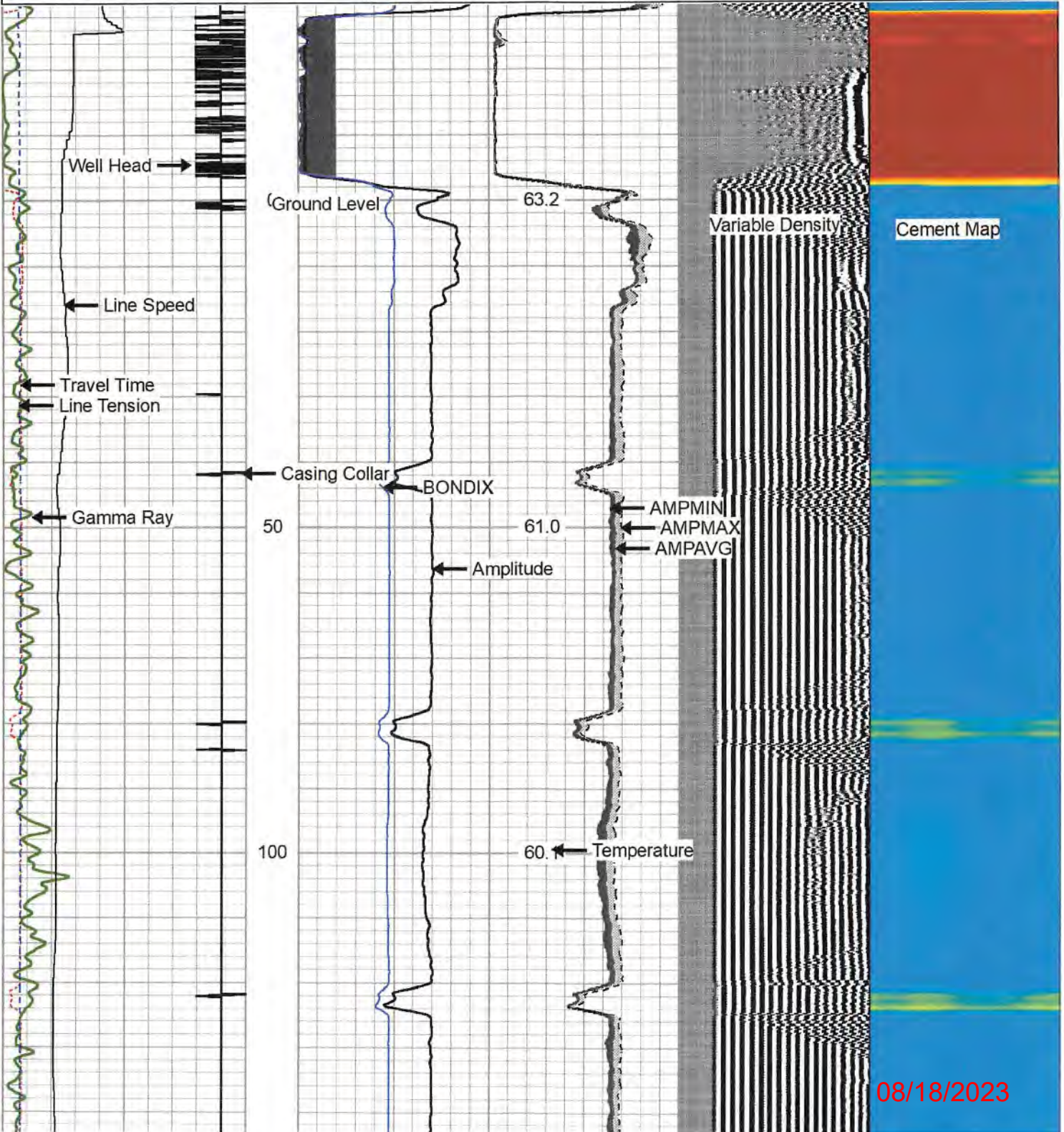
Main Pass 1,500 PSI

Database File antero_clutter_1h_rcbl_15_sep_2022.db
 Dataset Pathname clutter_1H/run1/pass7
 Presentation Format rcbl-bond index 1020
 Dataset Creation Fri Sep 16 00:40:36 2022
 Charted by Depth in Feet scaled 1:240

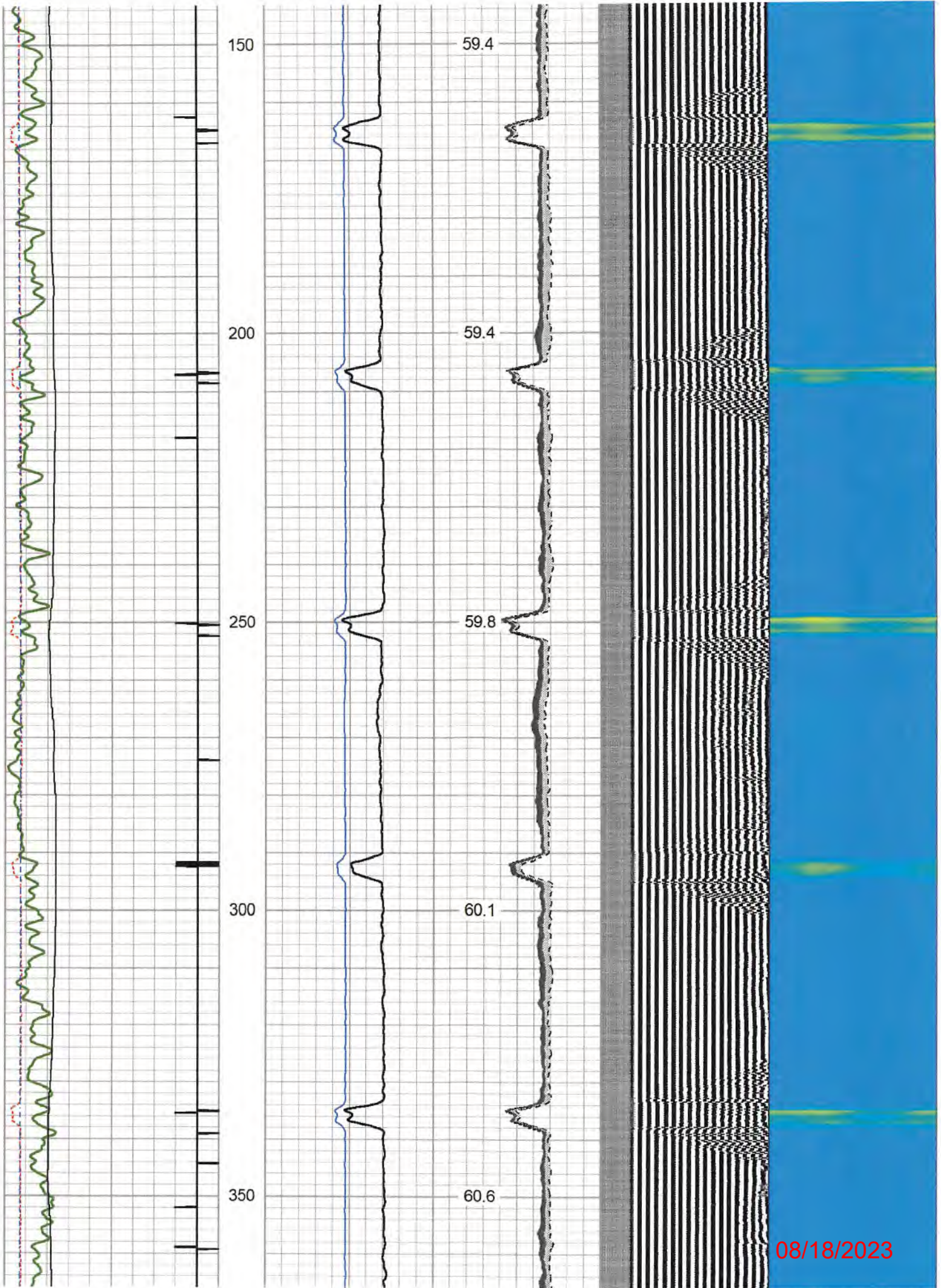
270	Travel Time (usec)	160
9	Casing Collar	-1
0	Gamma Ray (GAPI)	150
Line Speed		
-200	(ft/min)	200
0	Line Tension (lb)	3000

0	Amplitude (mV)	100	-5	AMPMIN	150
1	BONDIX	0	-5	AMPMAX	150
			-5	AMPAVG	150
TEMP			(degF)		

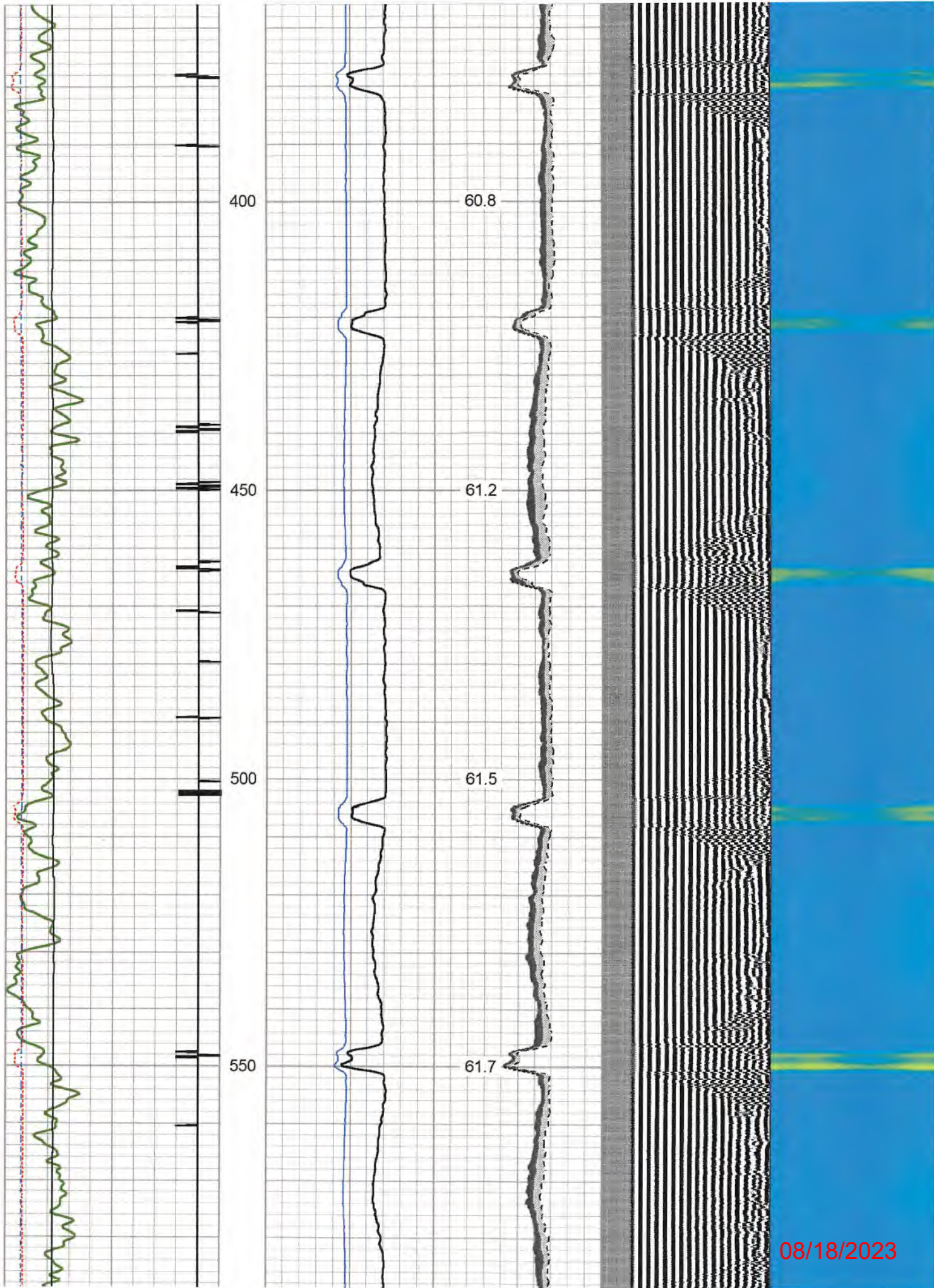
Variable Density	1	Cement Map	8
(usec)	1200		



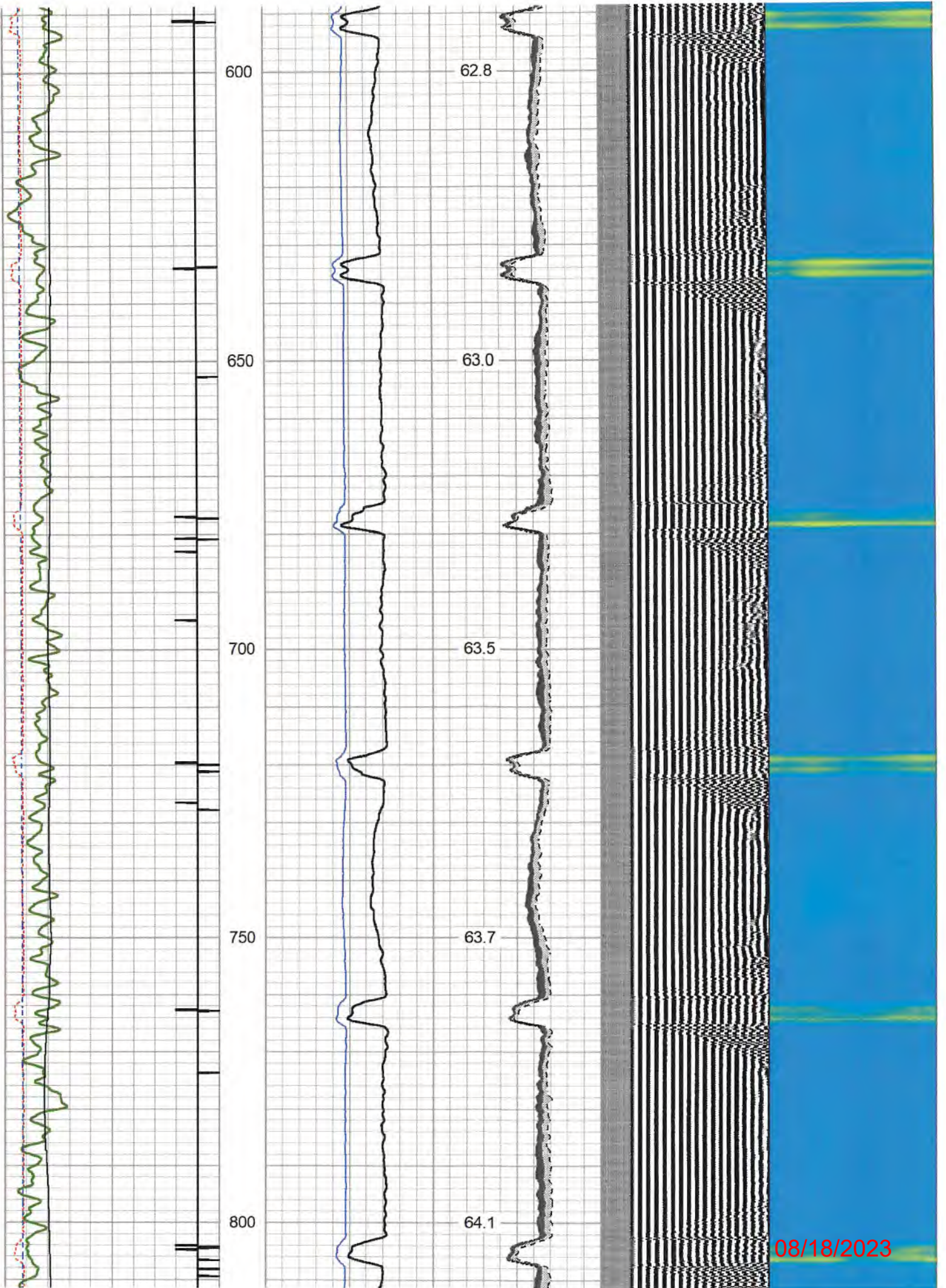
08/18/2023

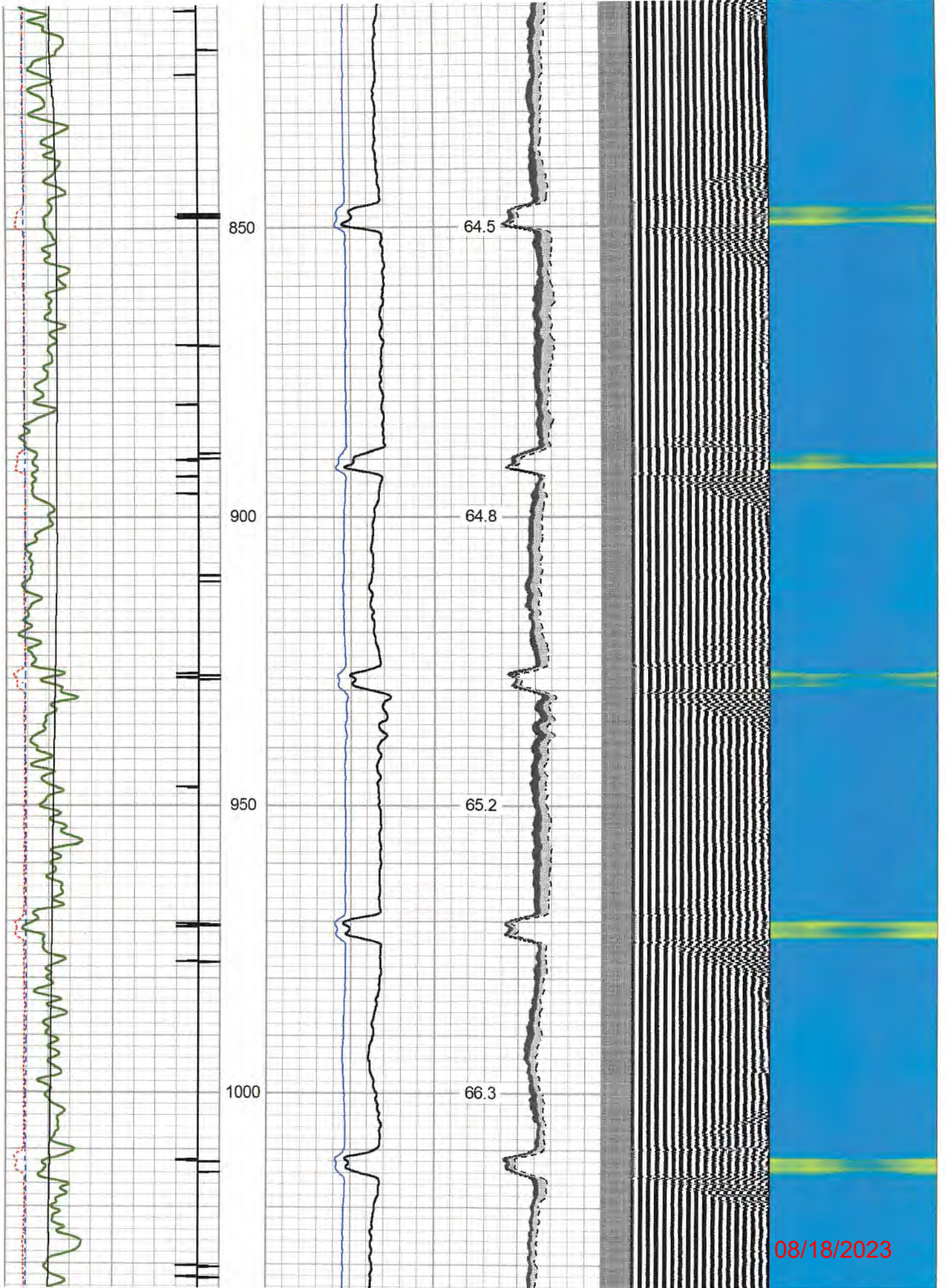


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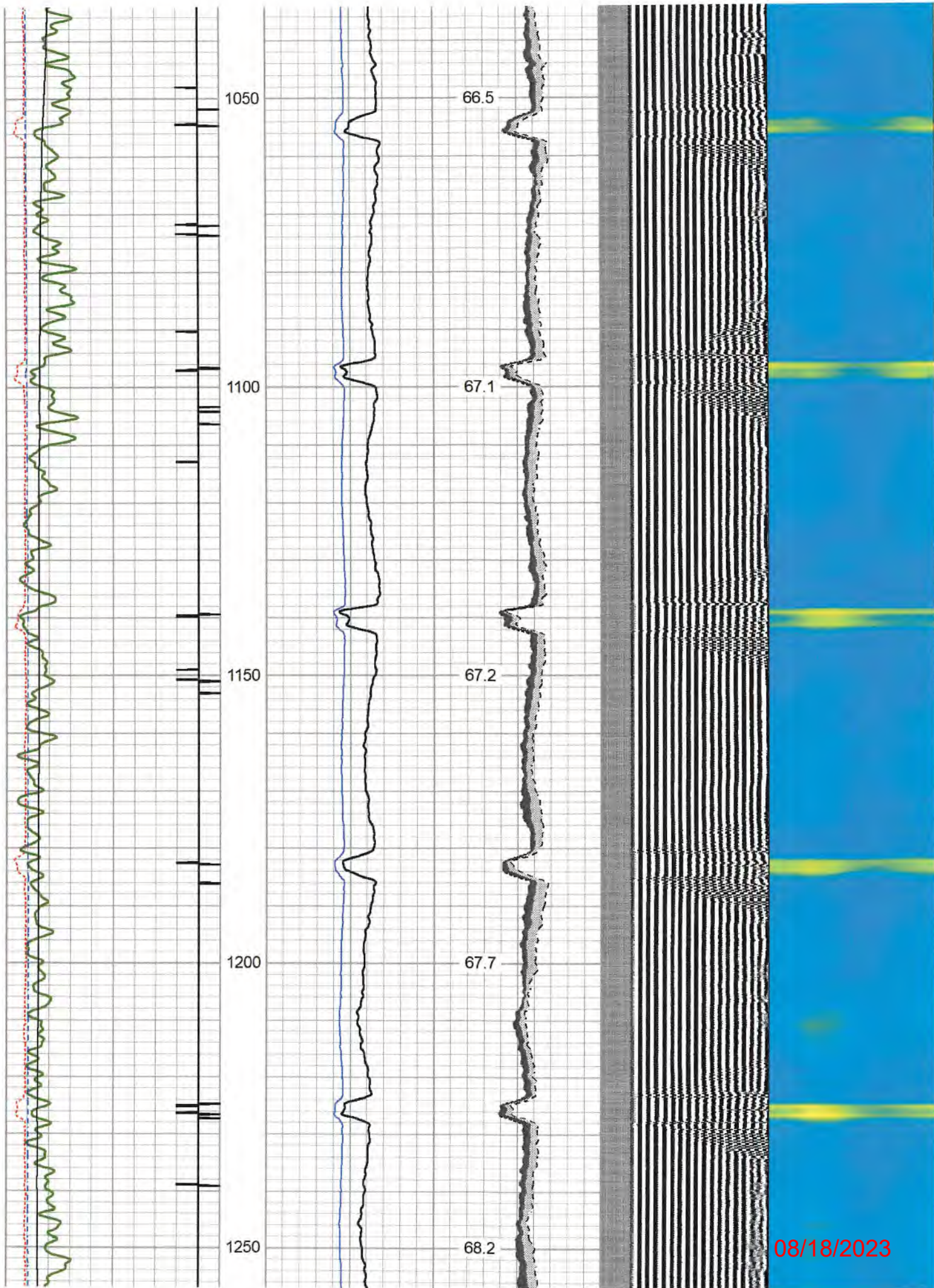


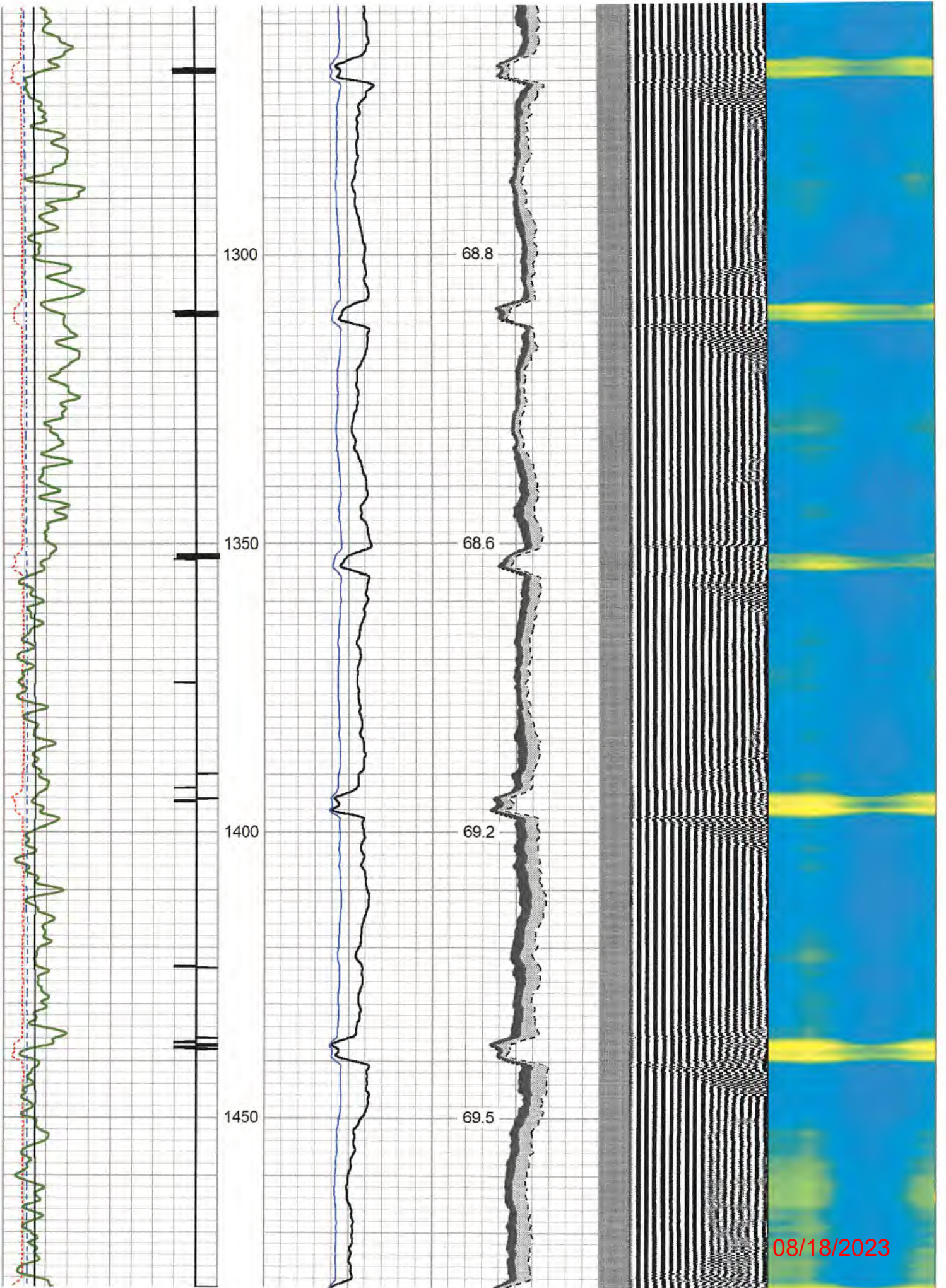
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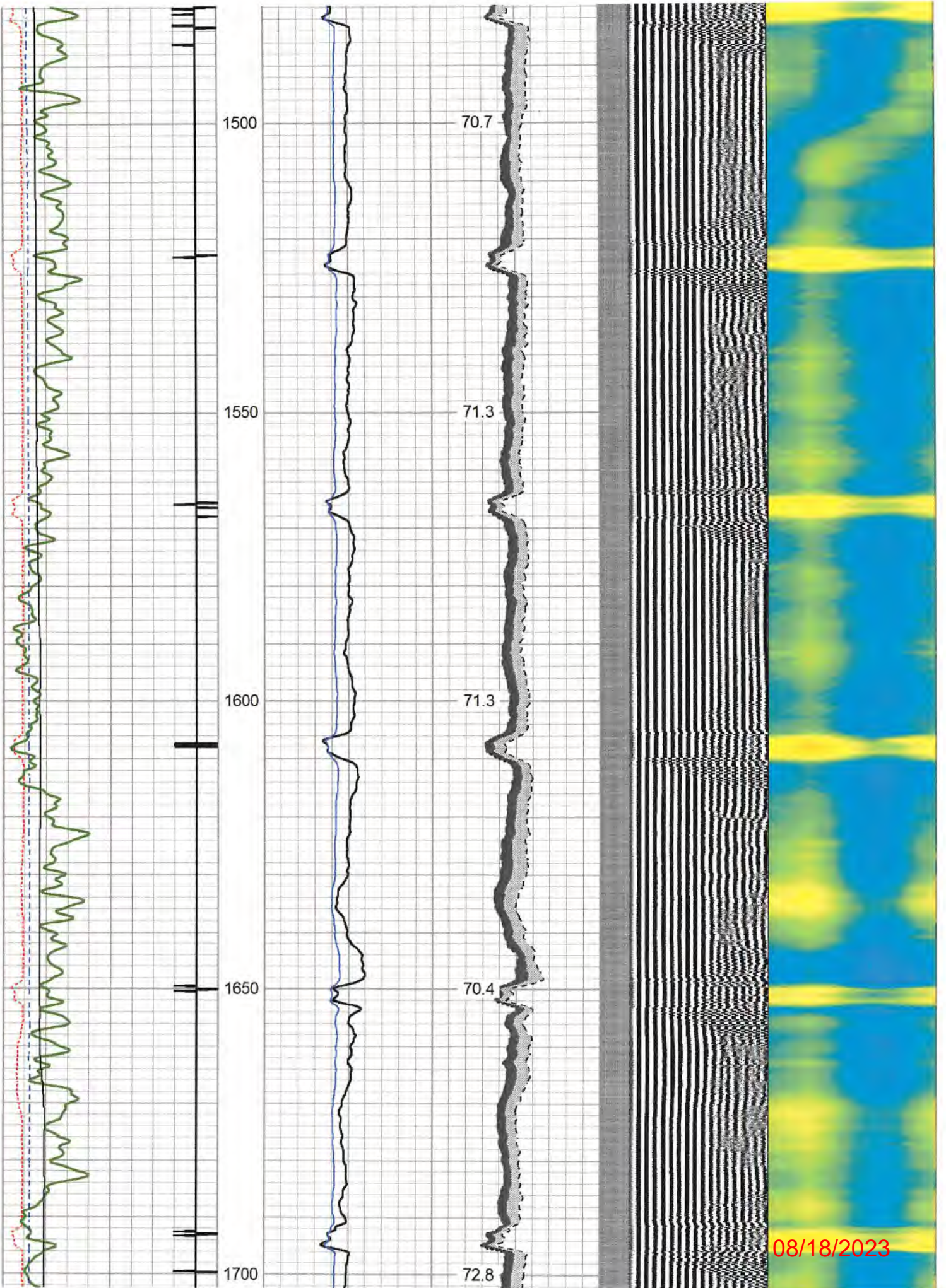


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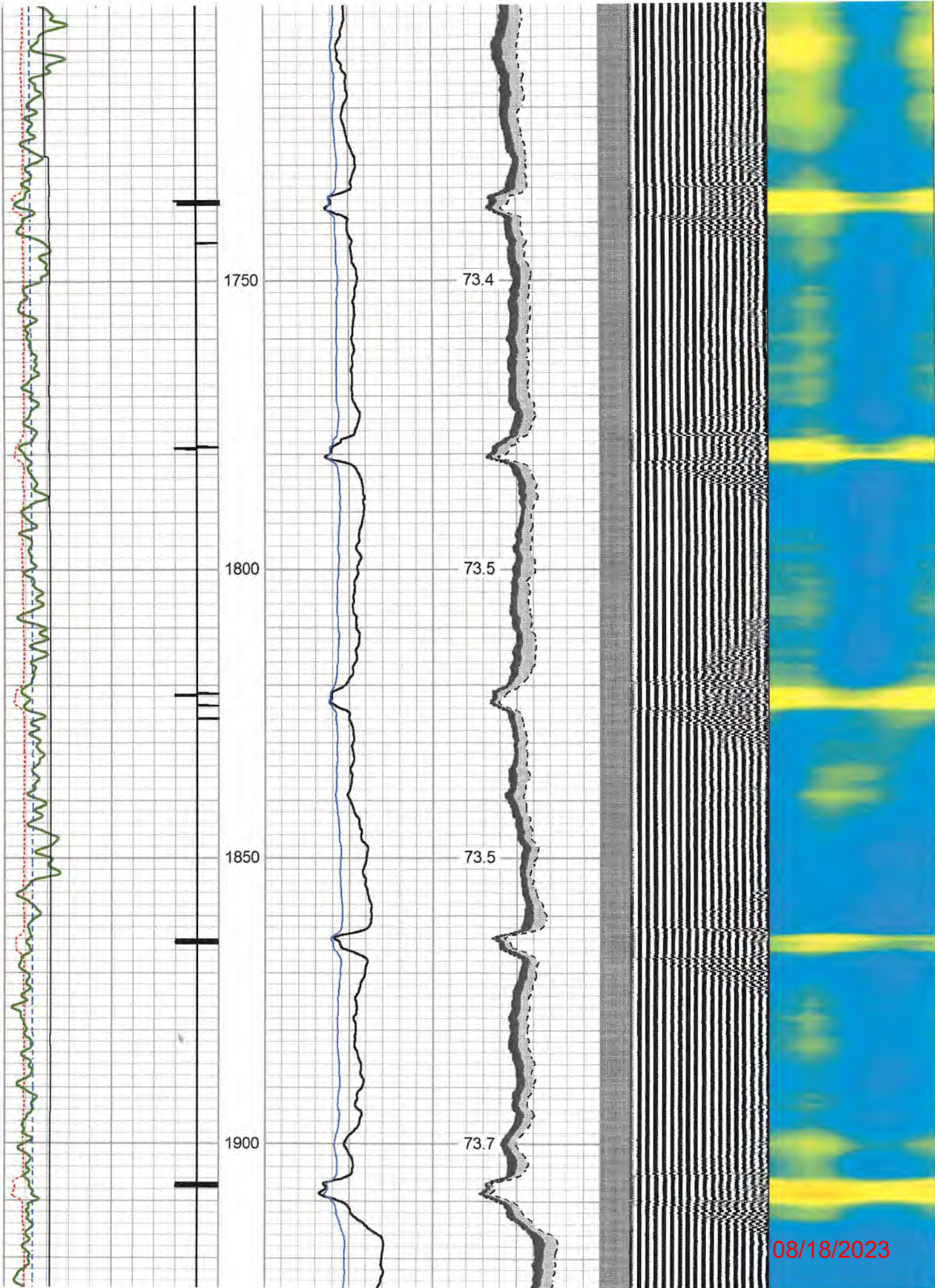




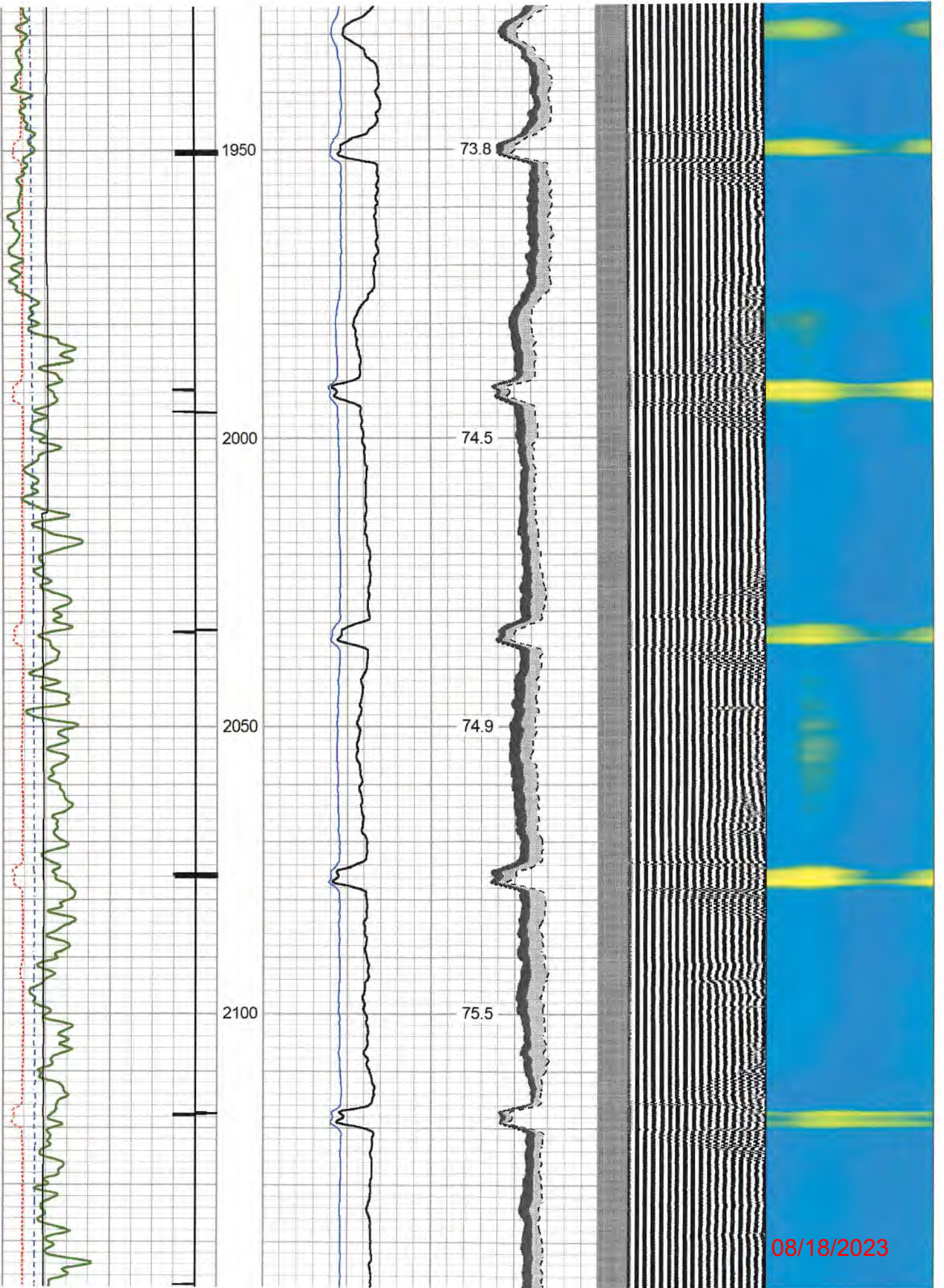
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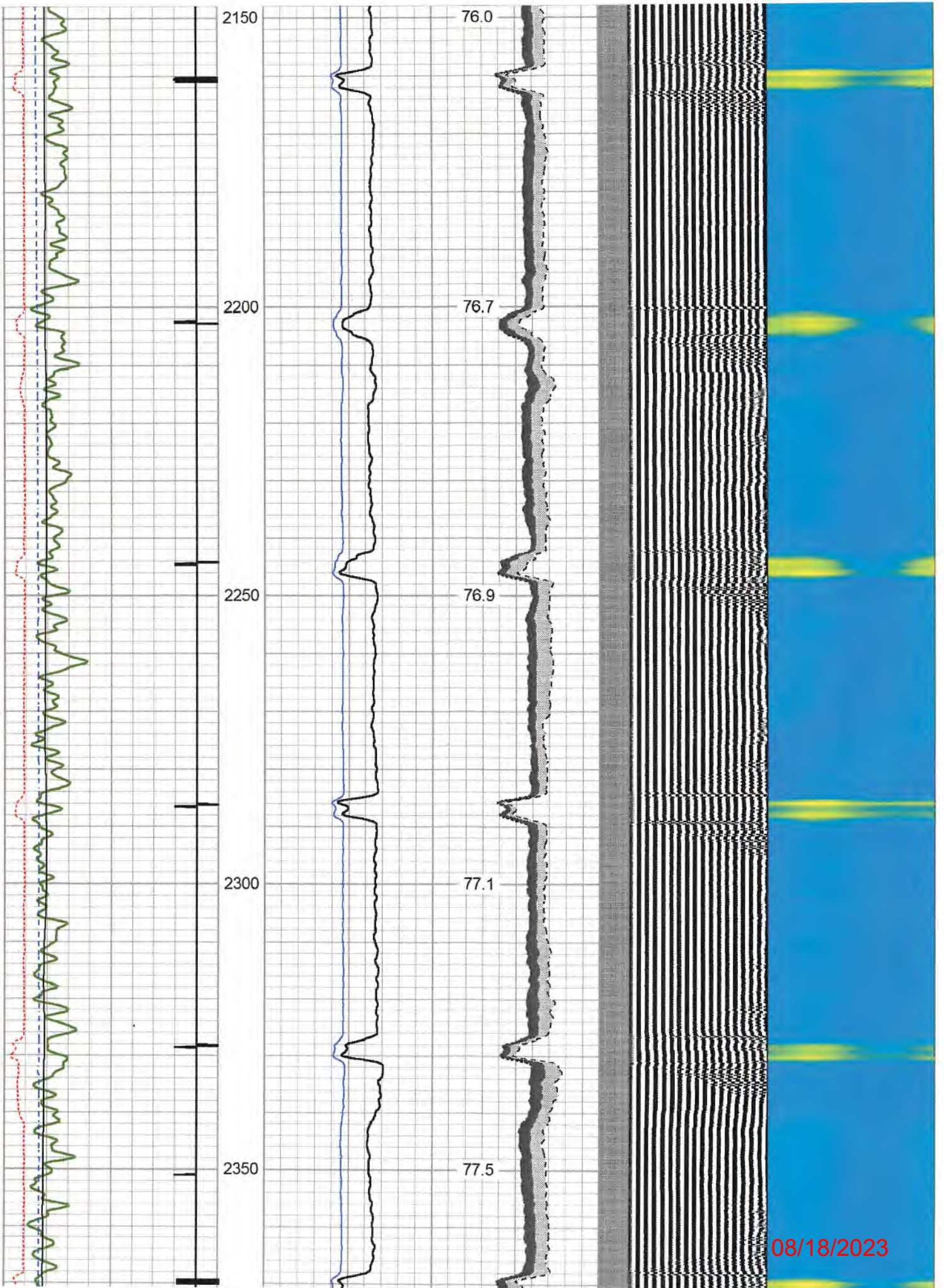
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76.0

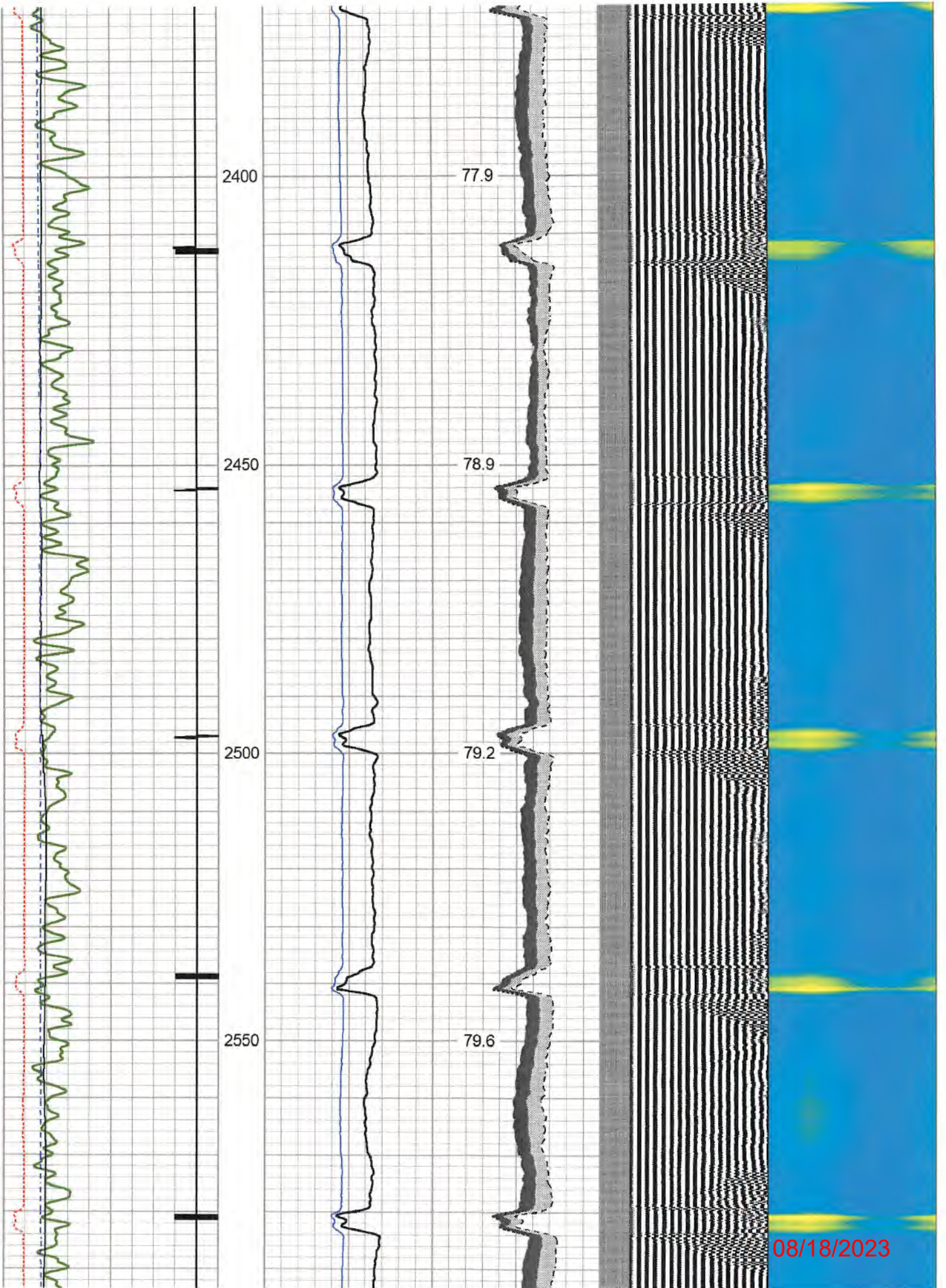
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76.9

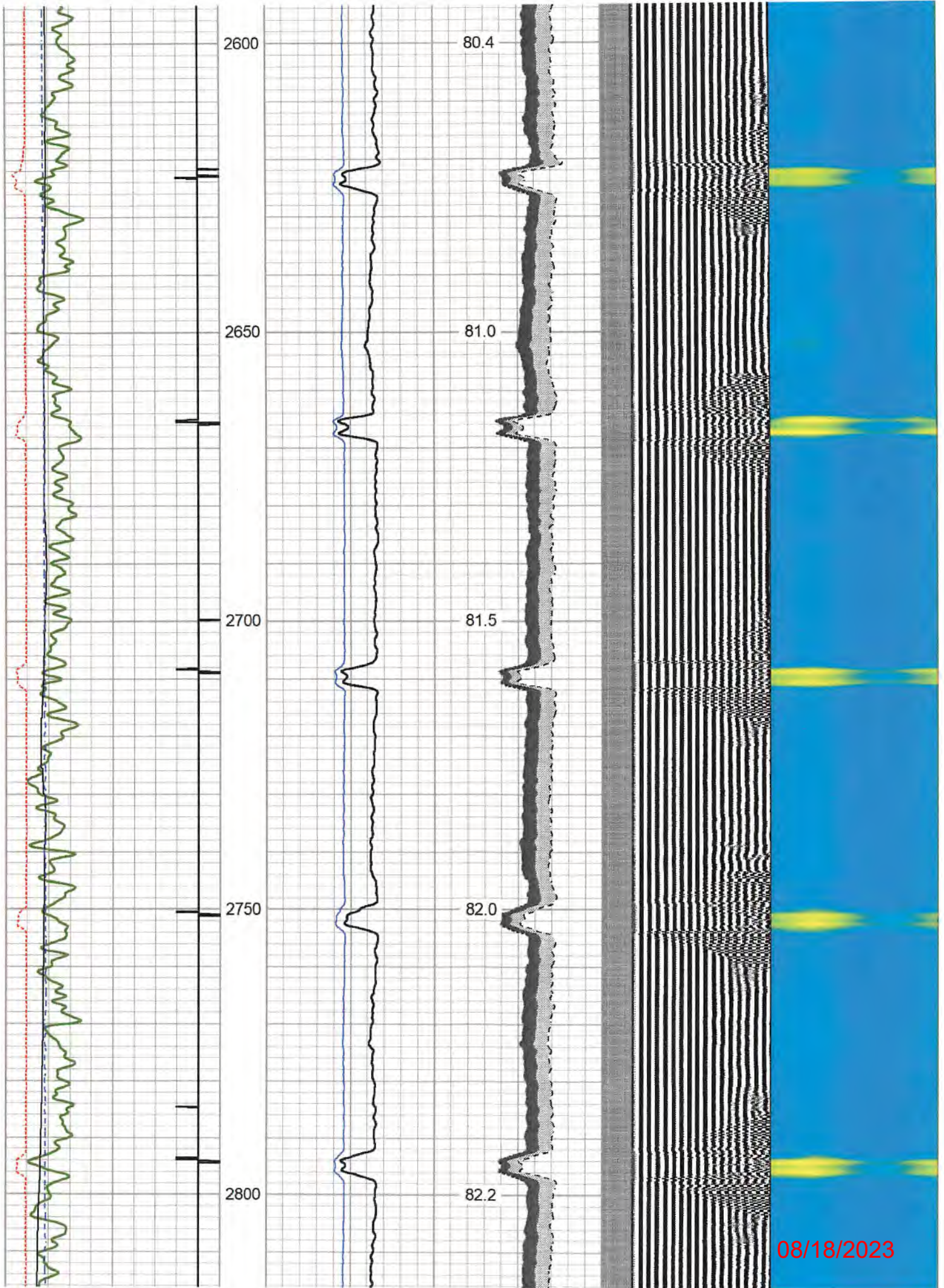
77.1

77.5

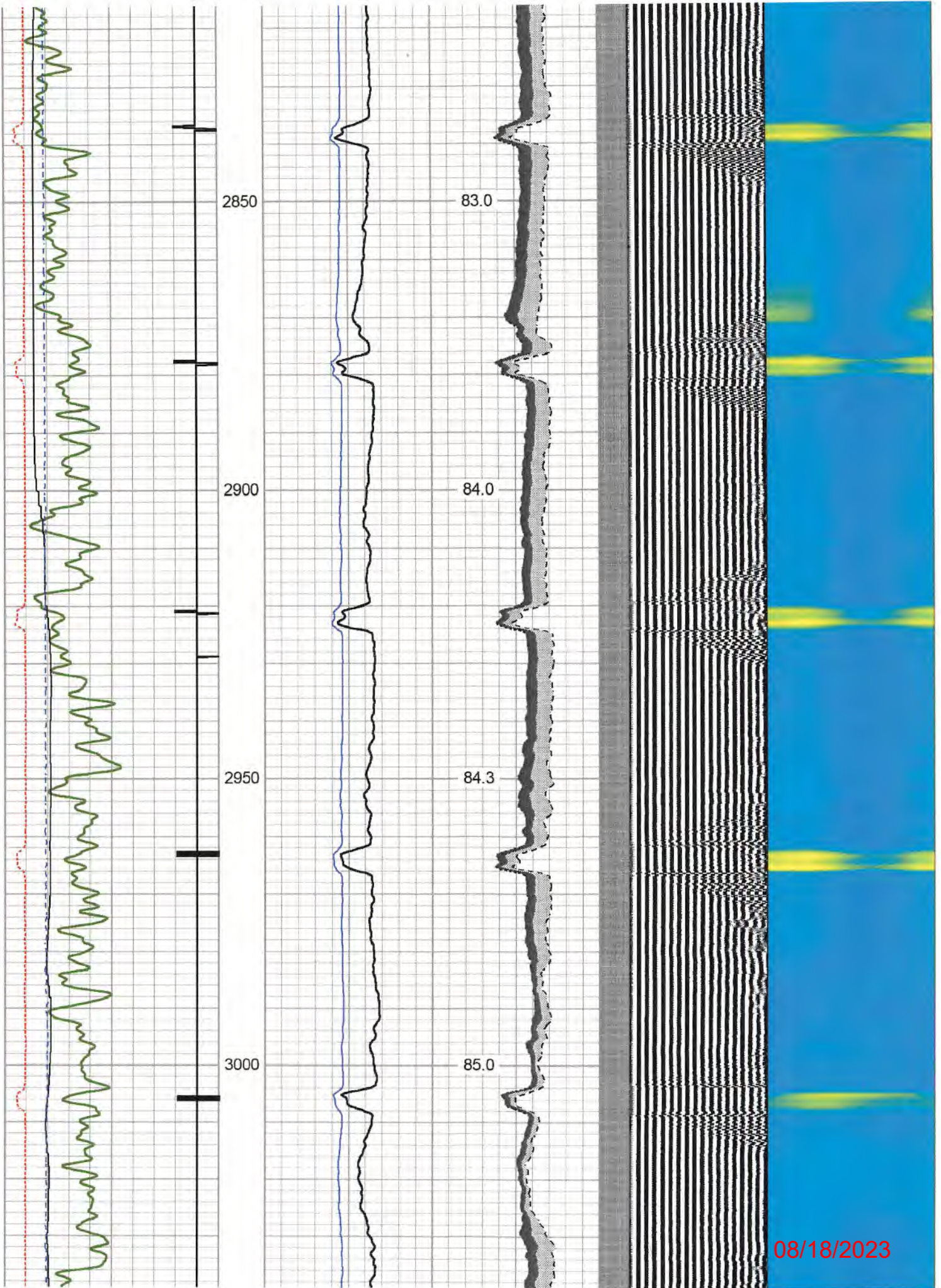
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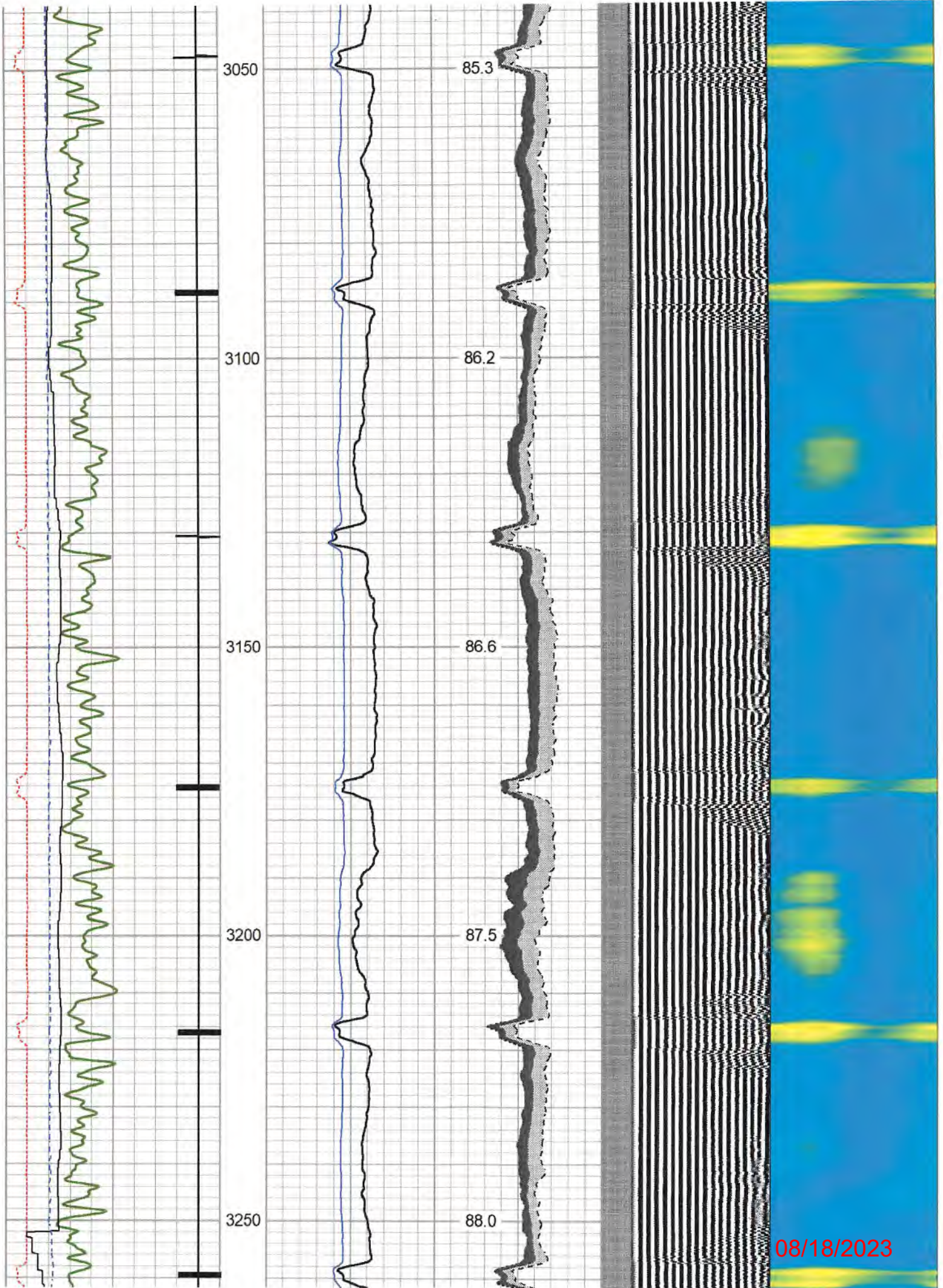
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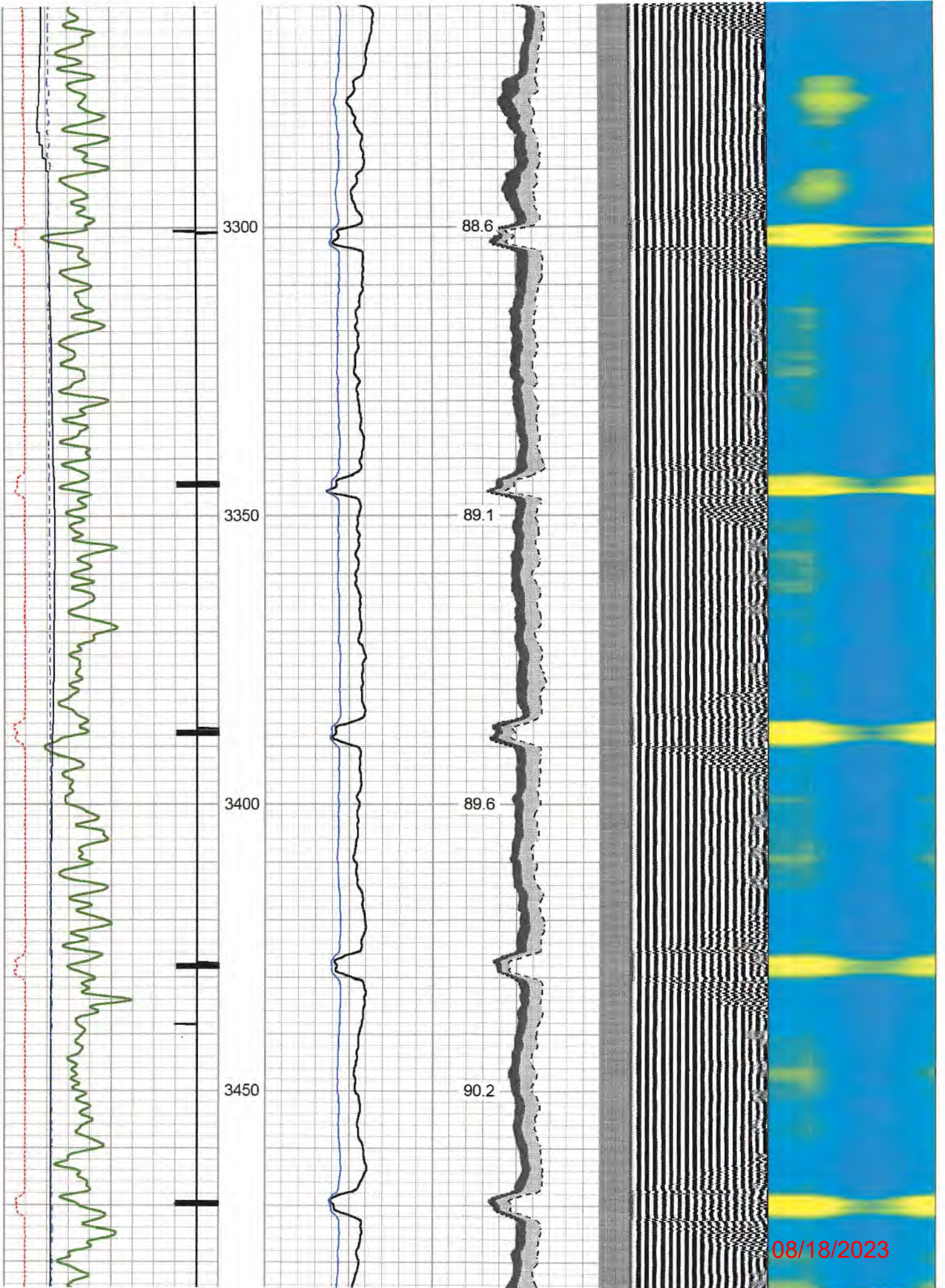
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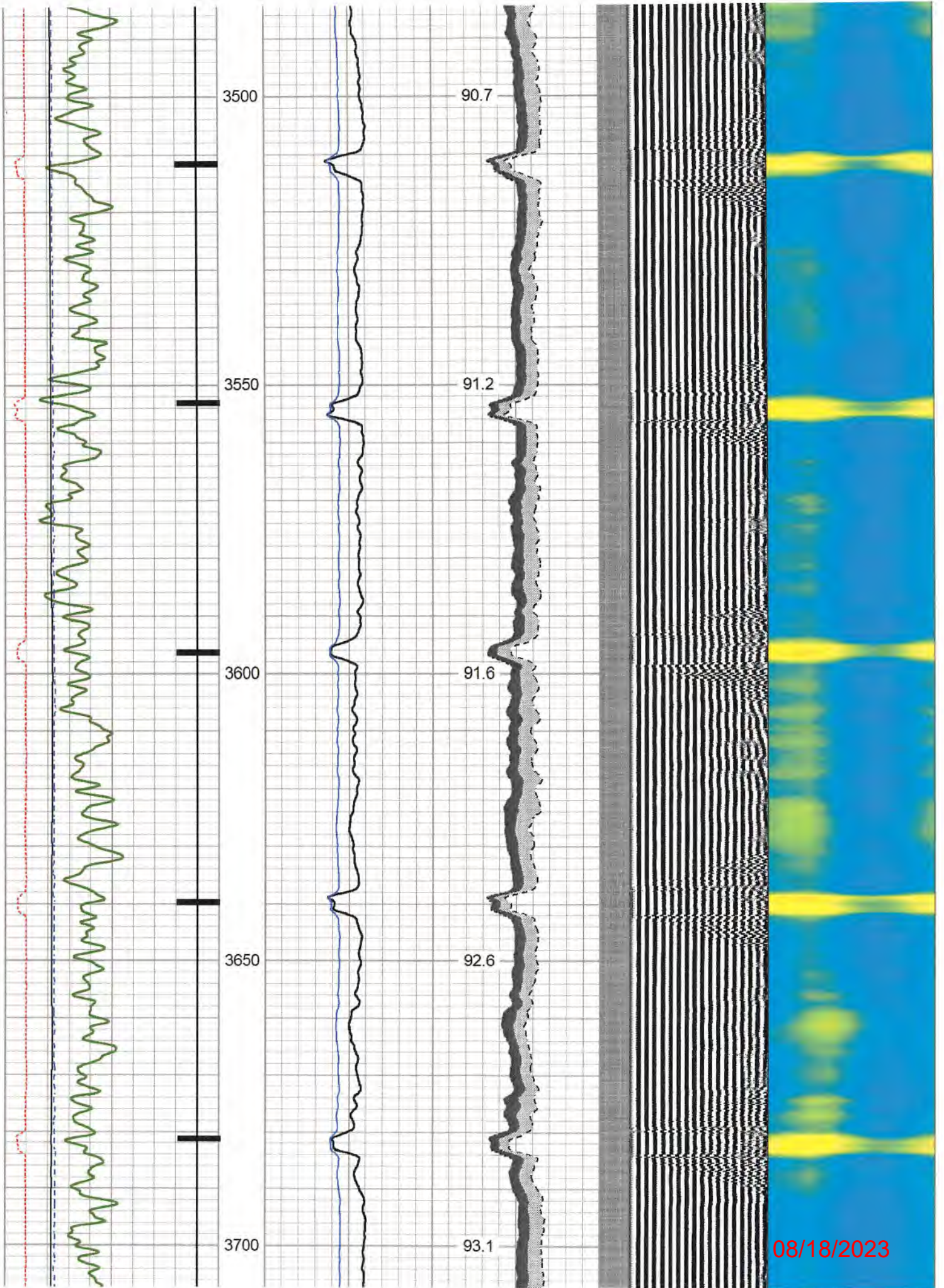
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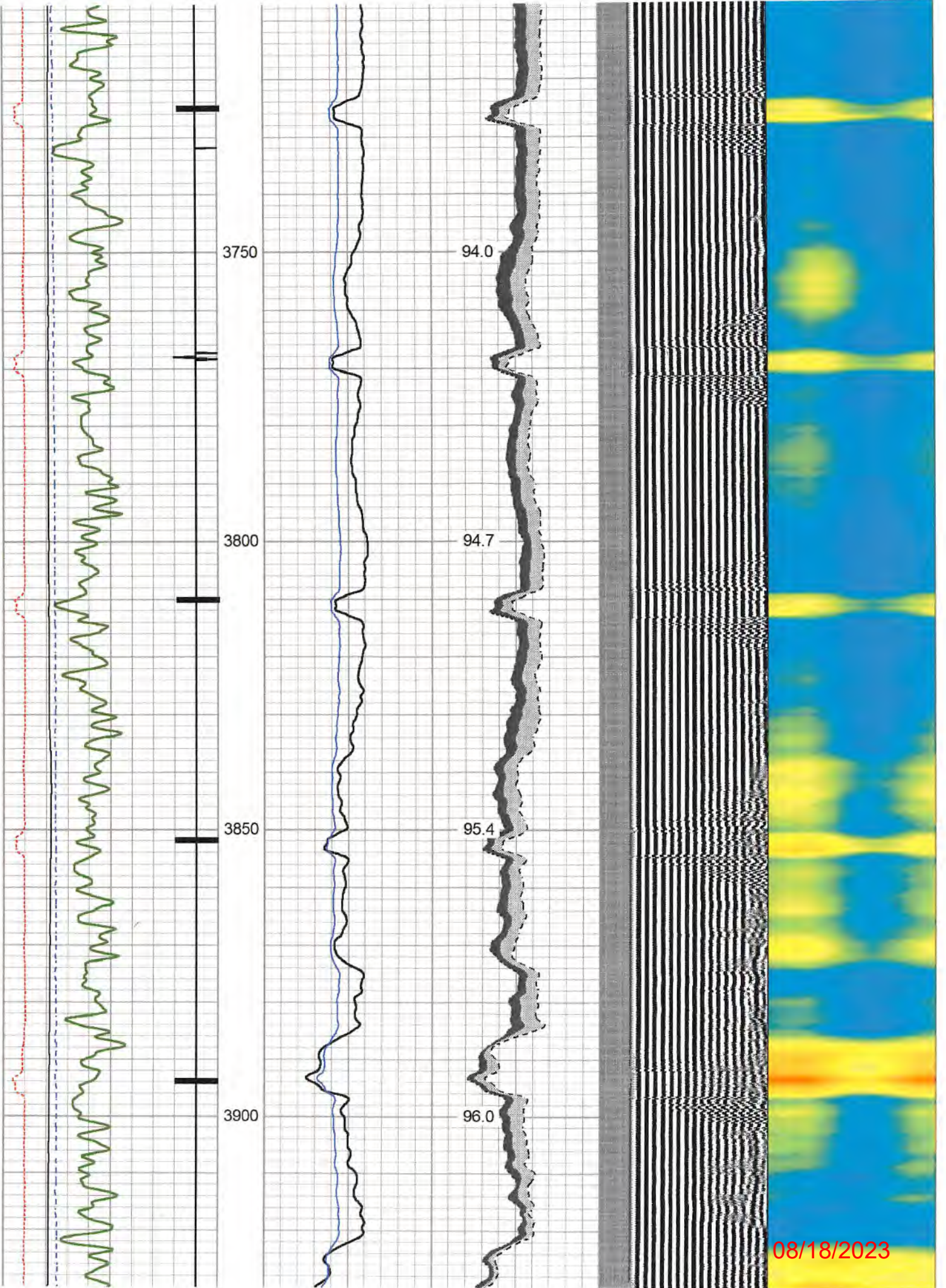
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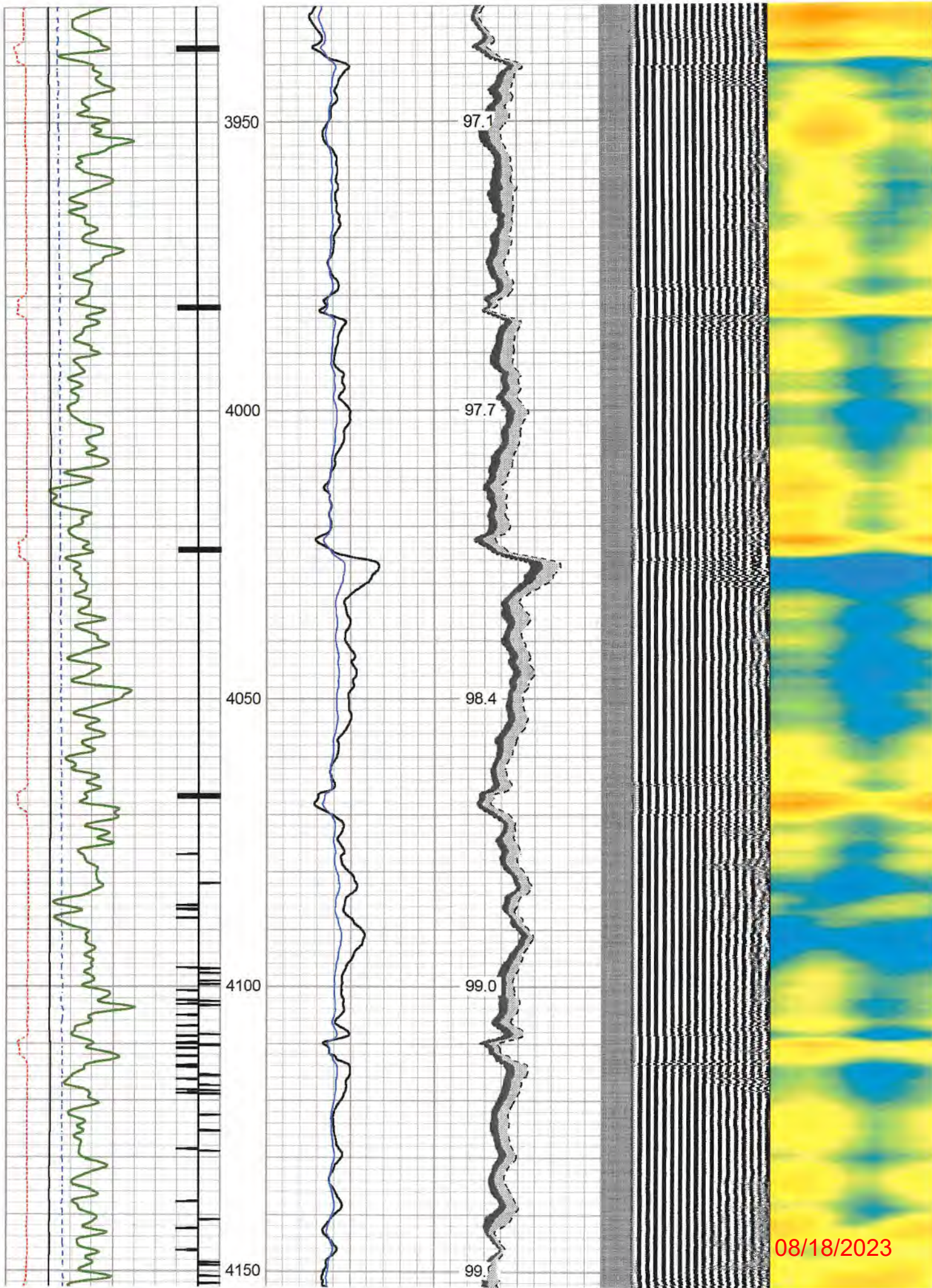


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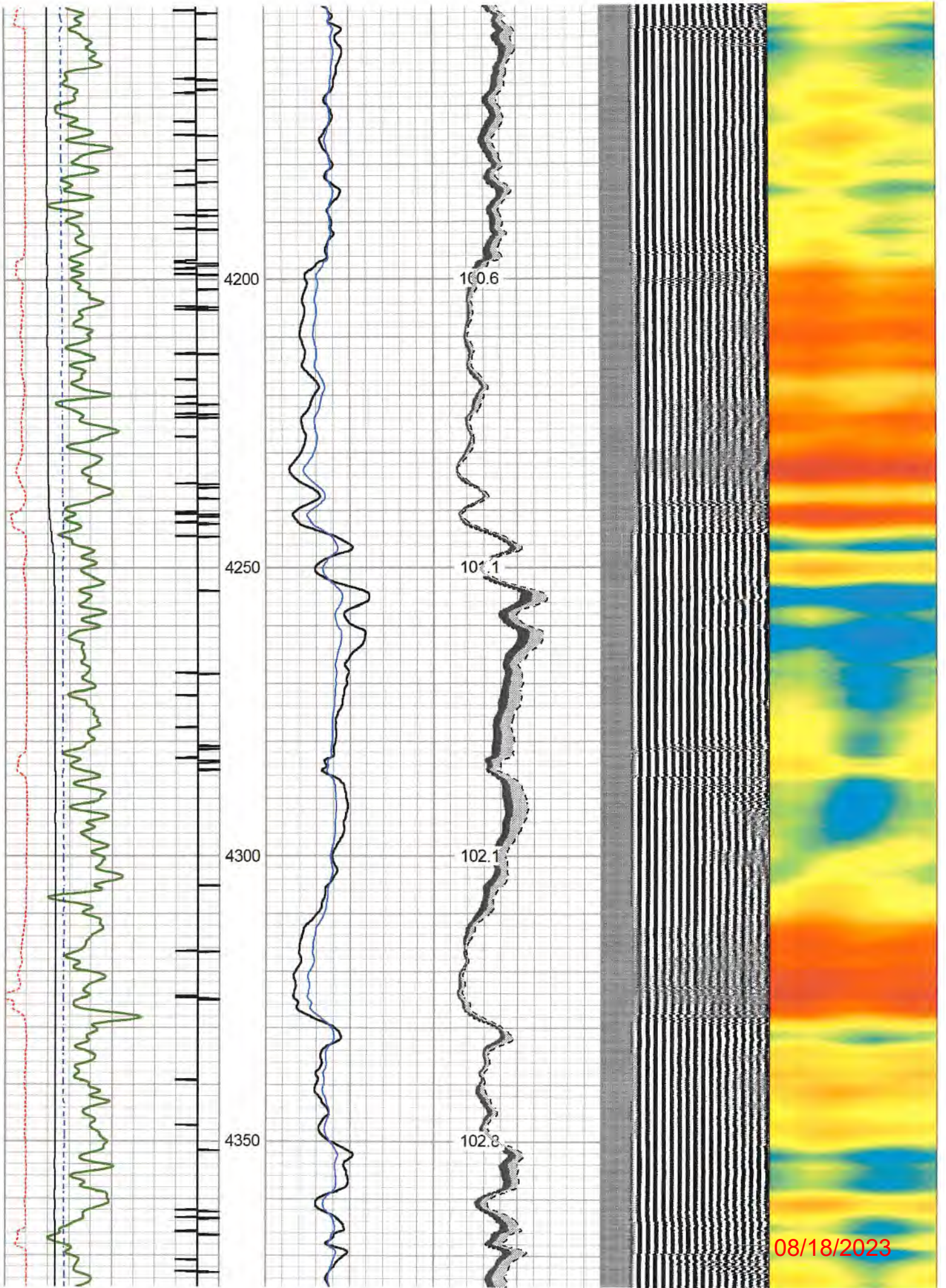


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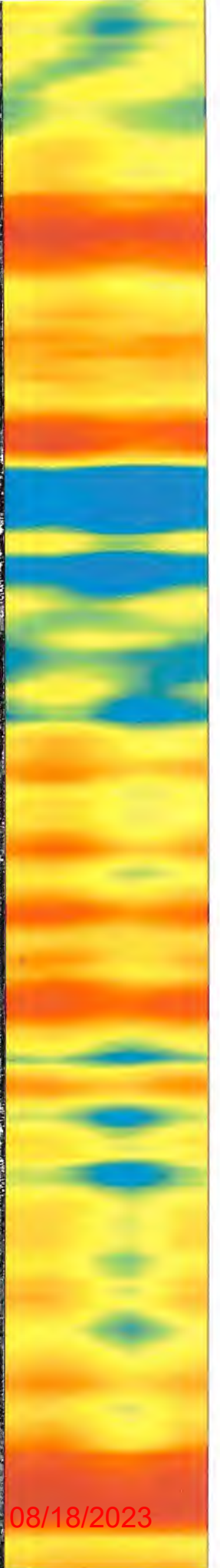
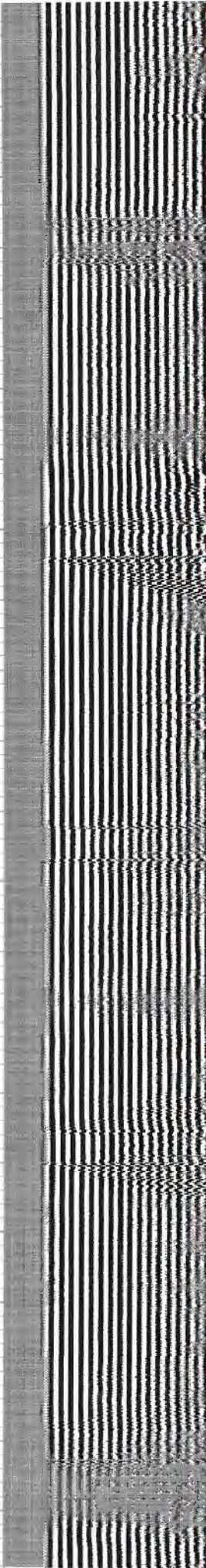
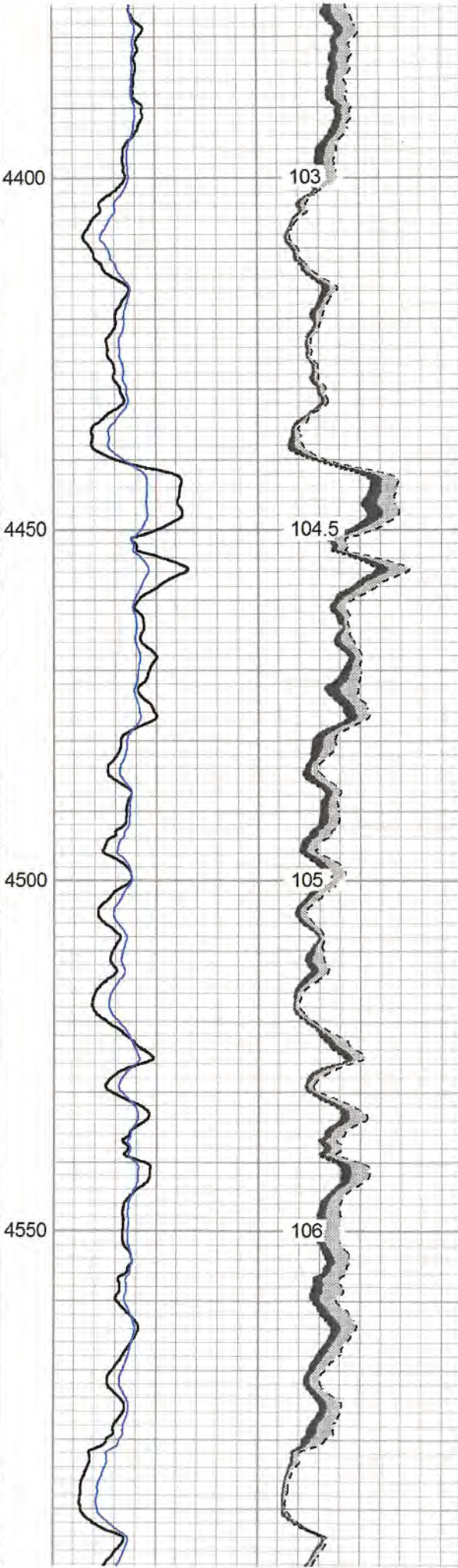
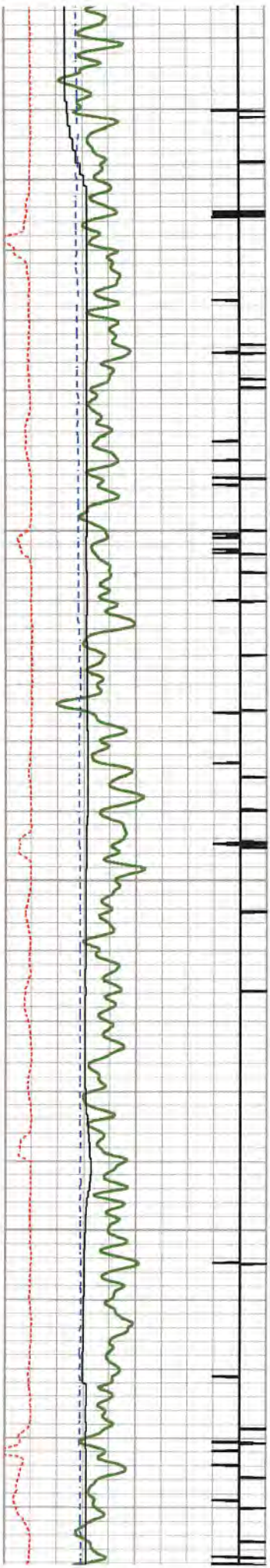




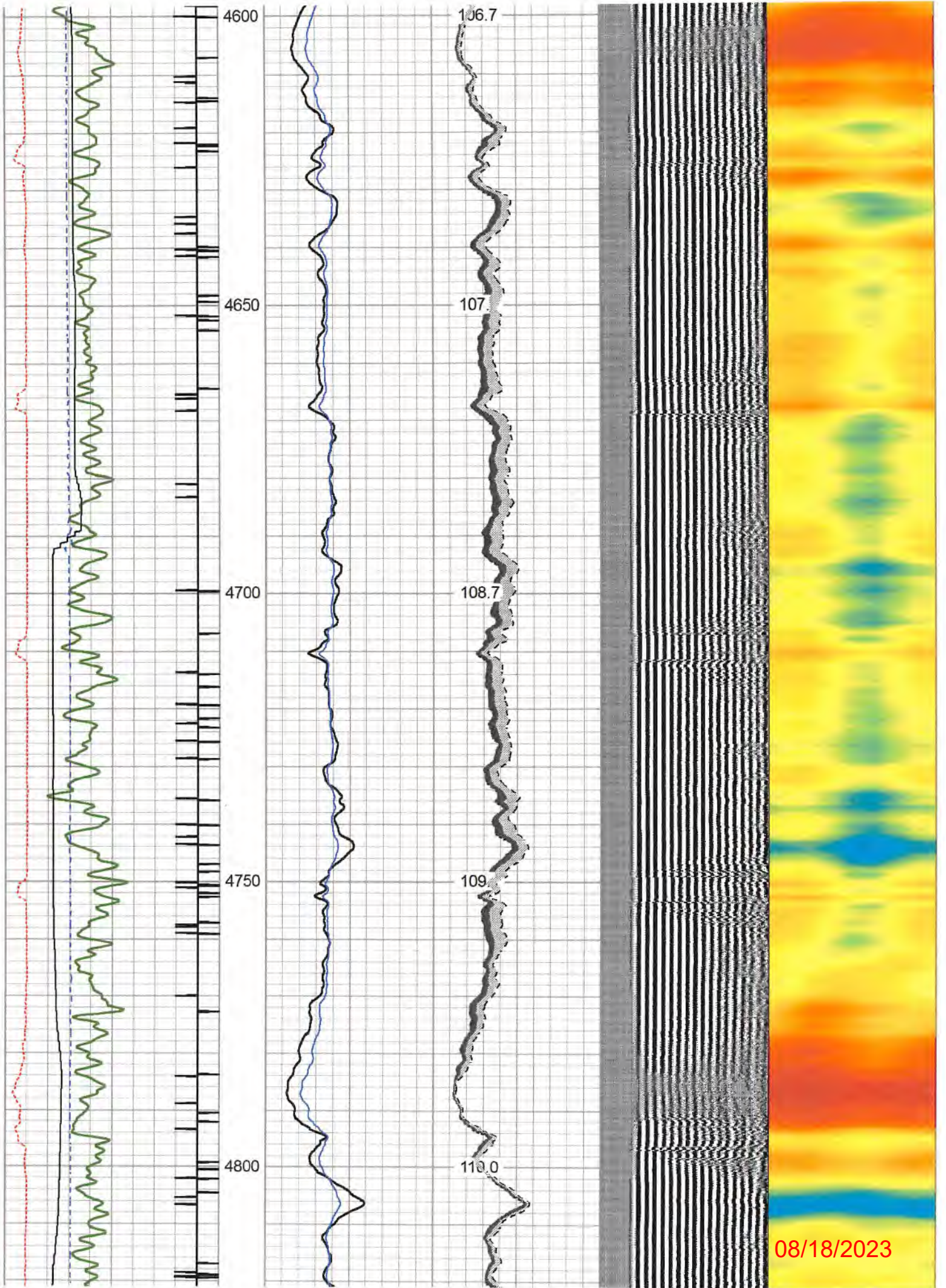
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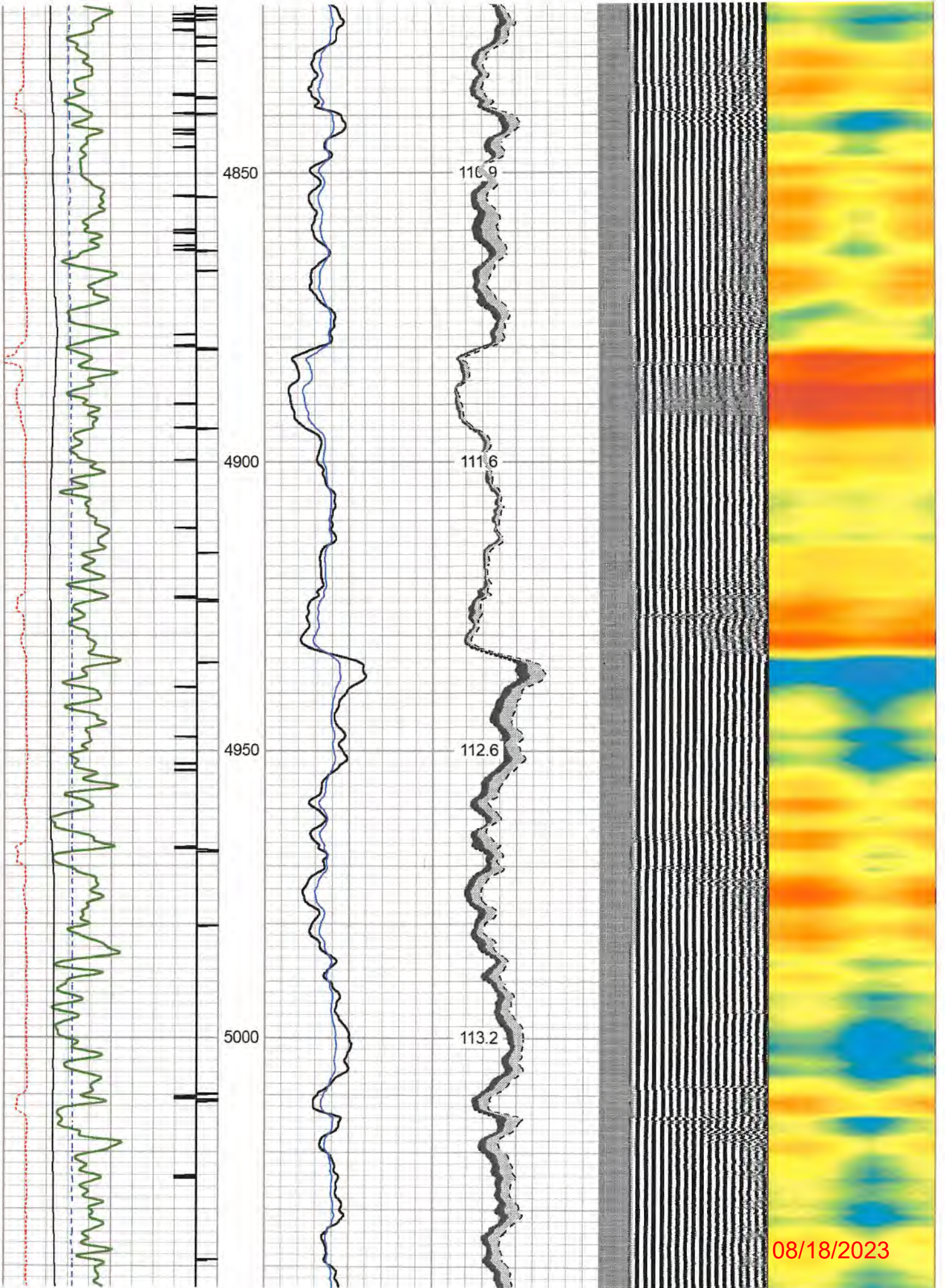
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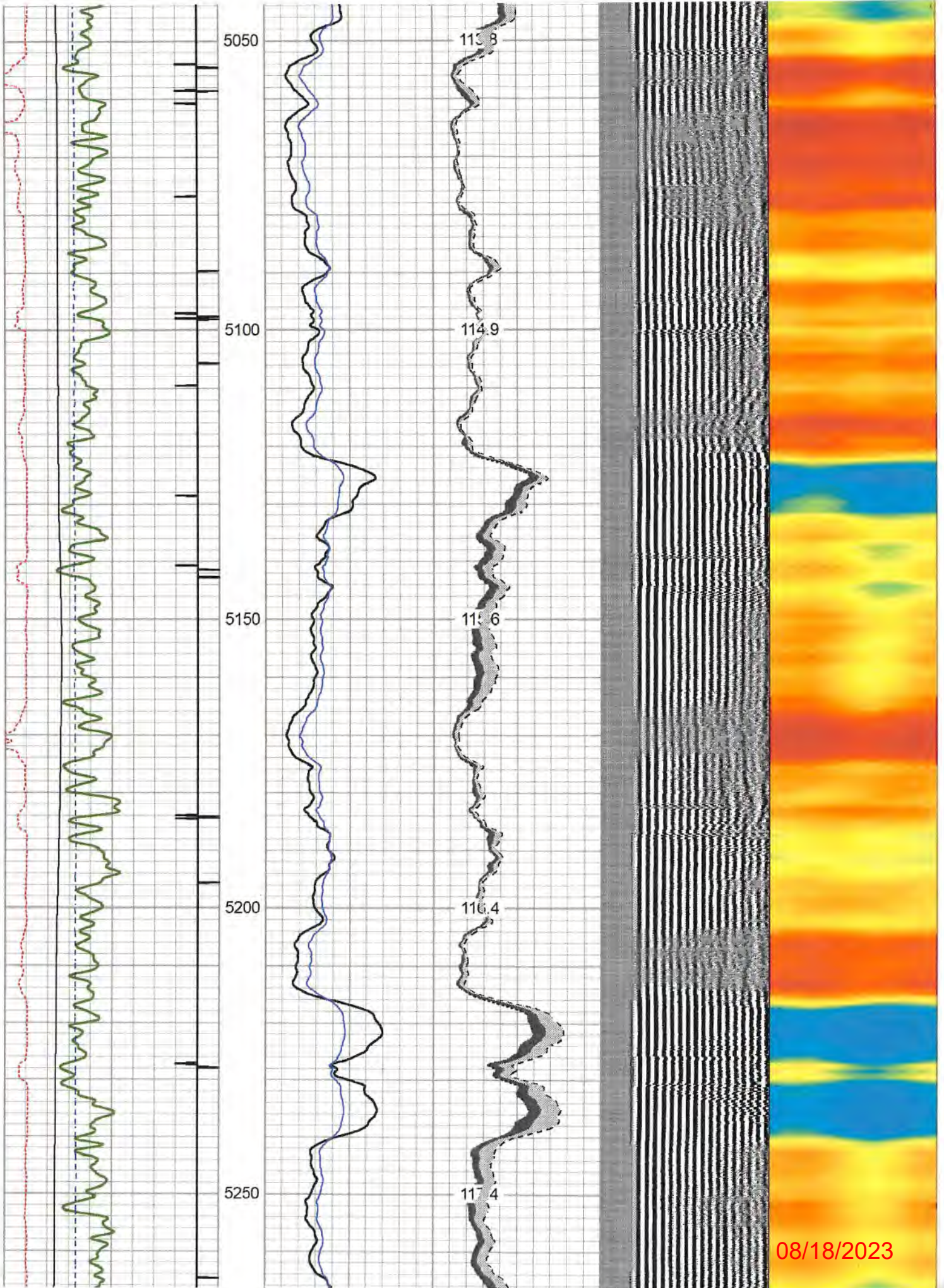


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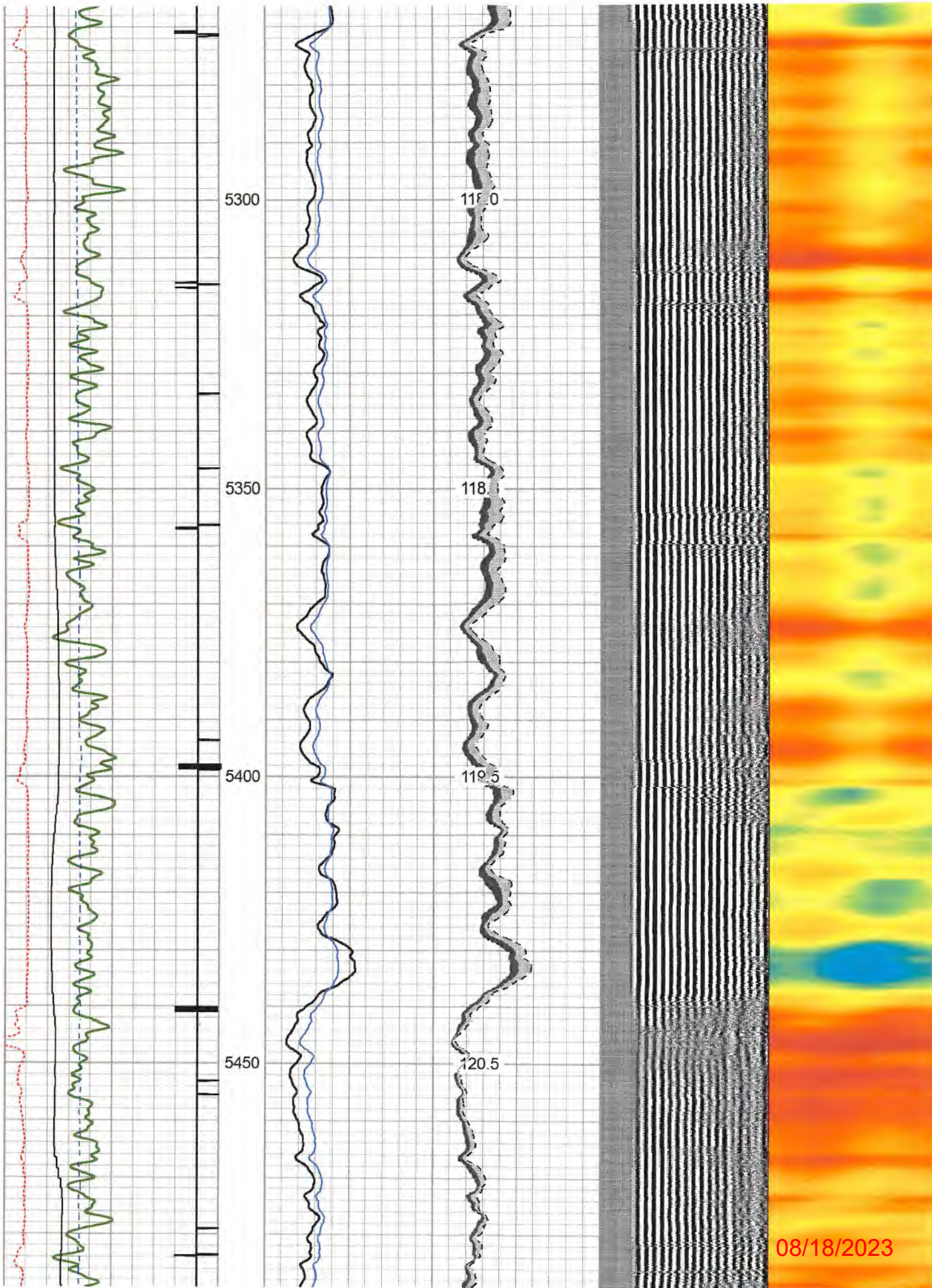


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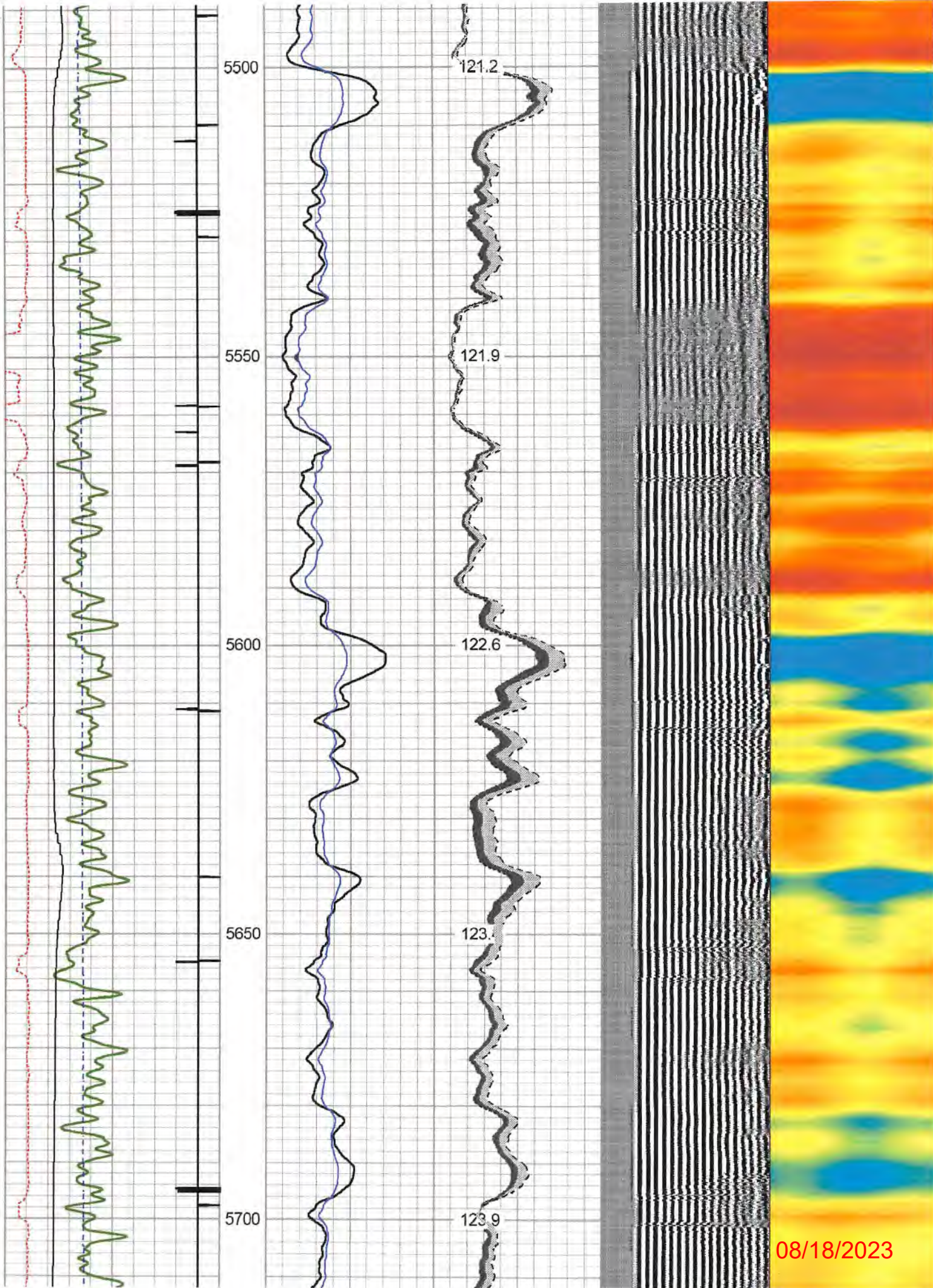




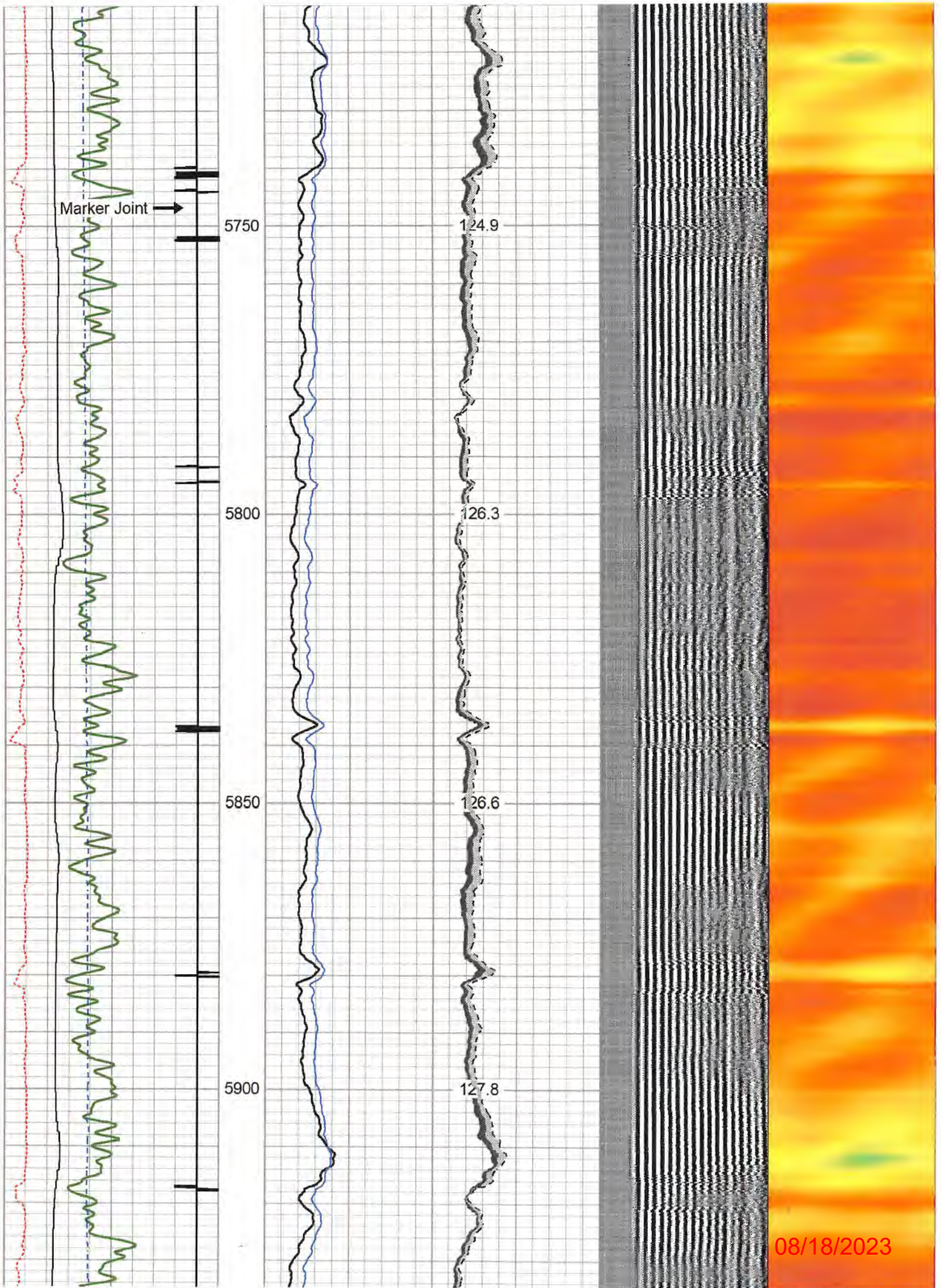
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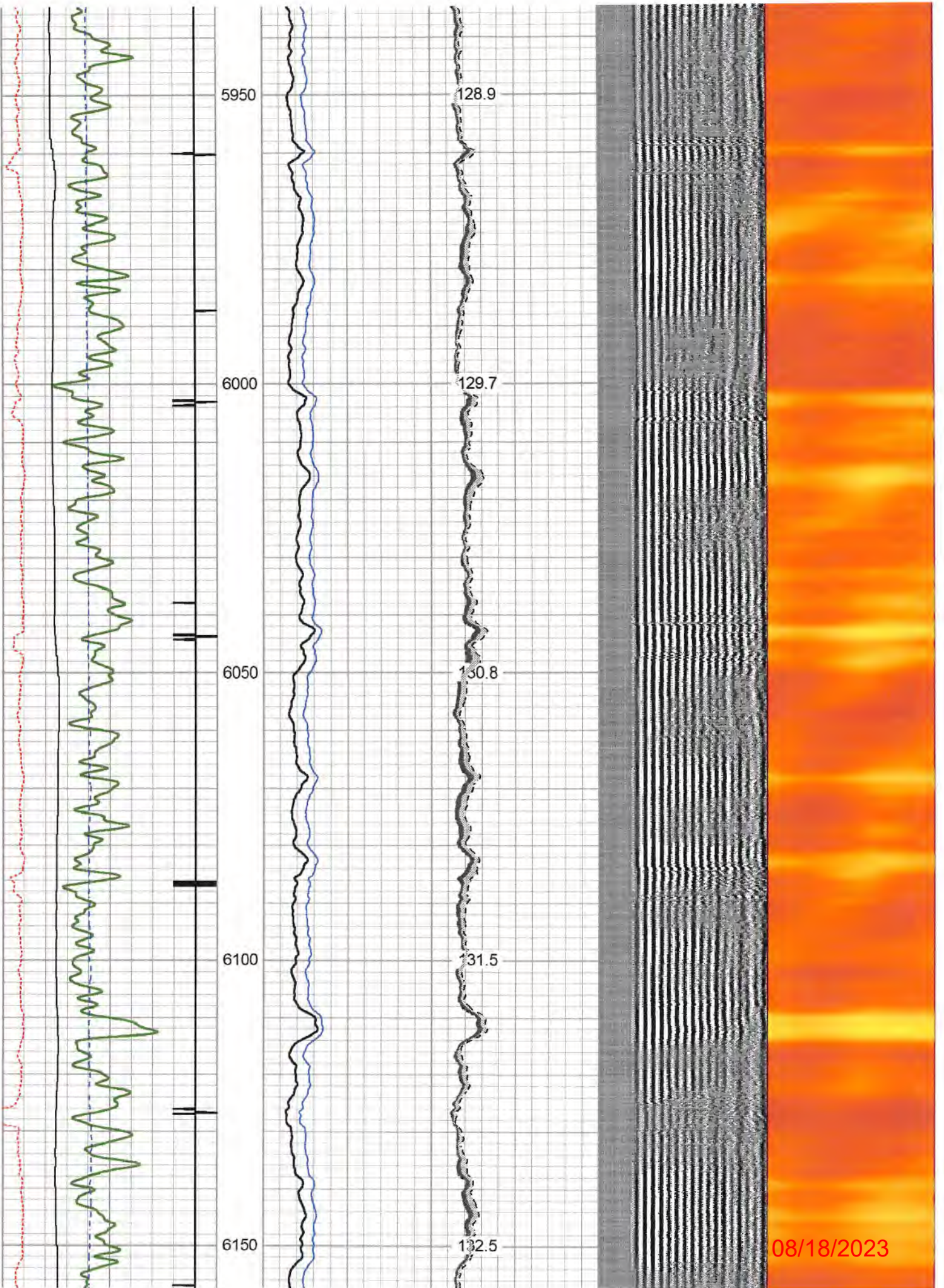


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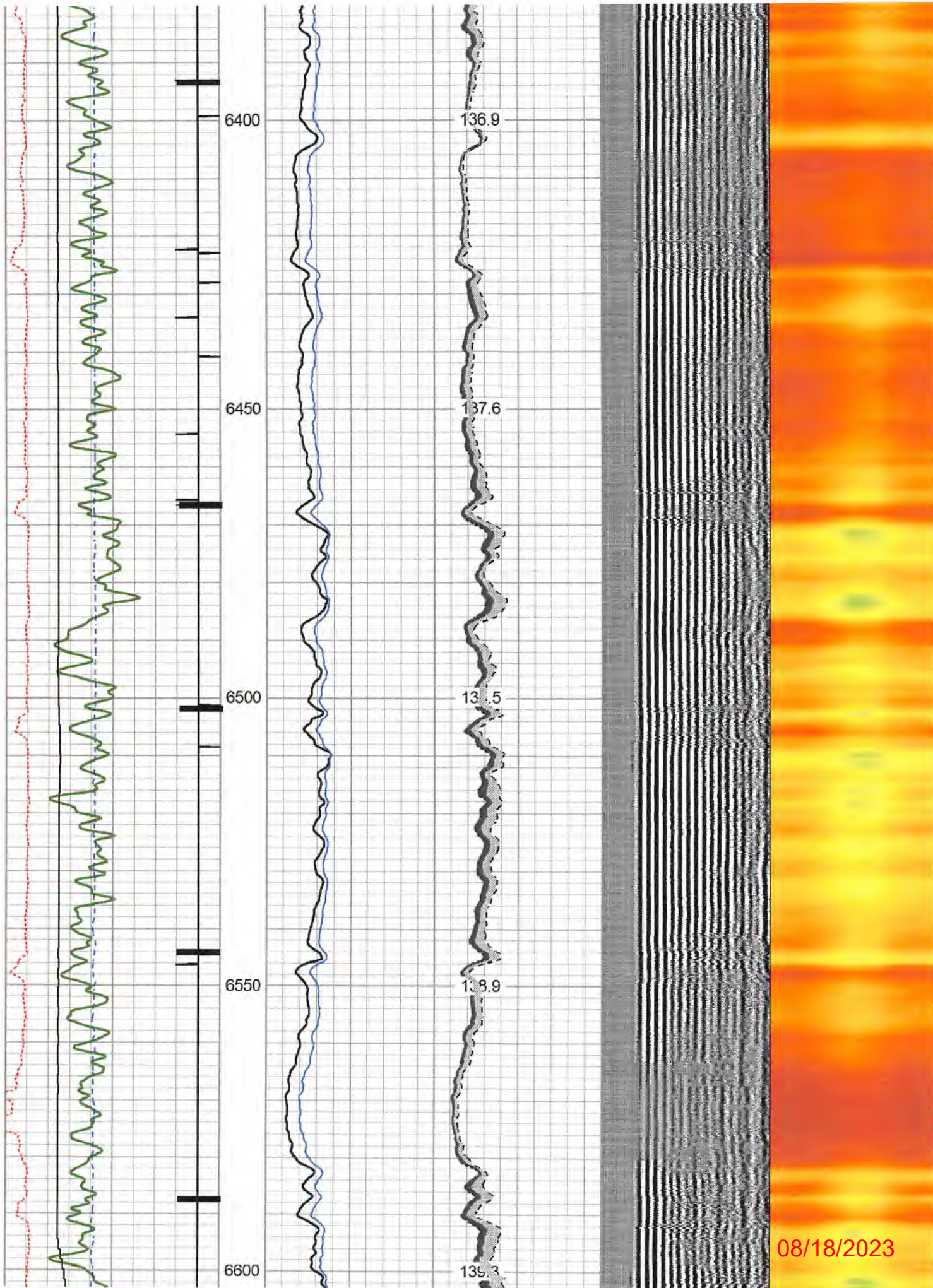


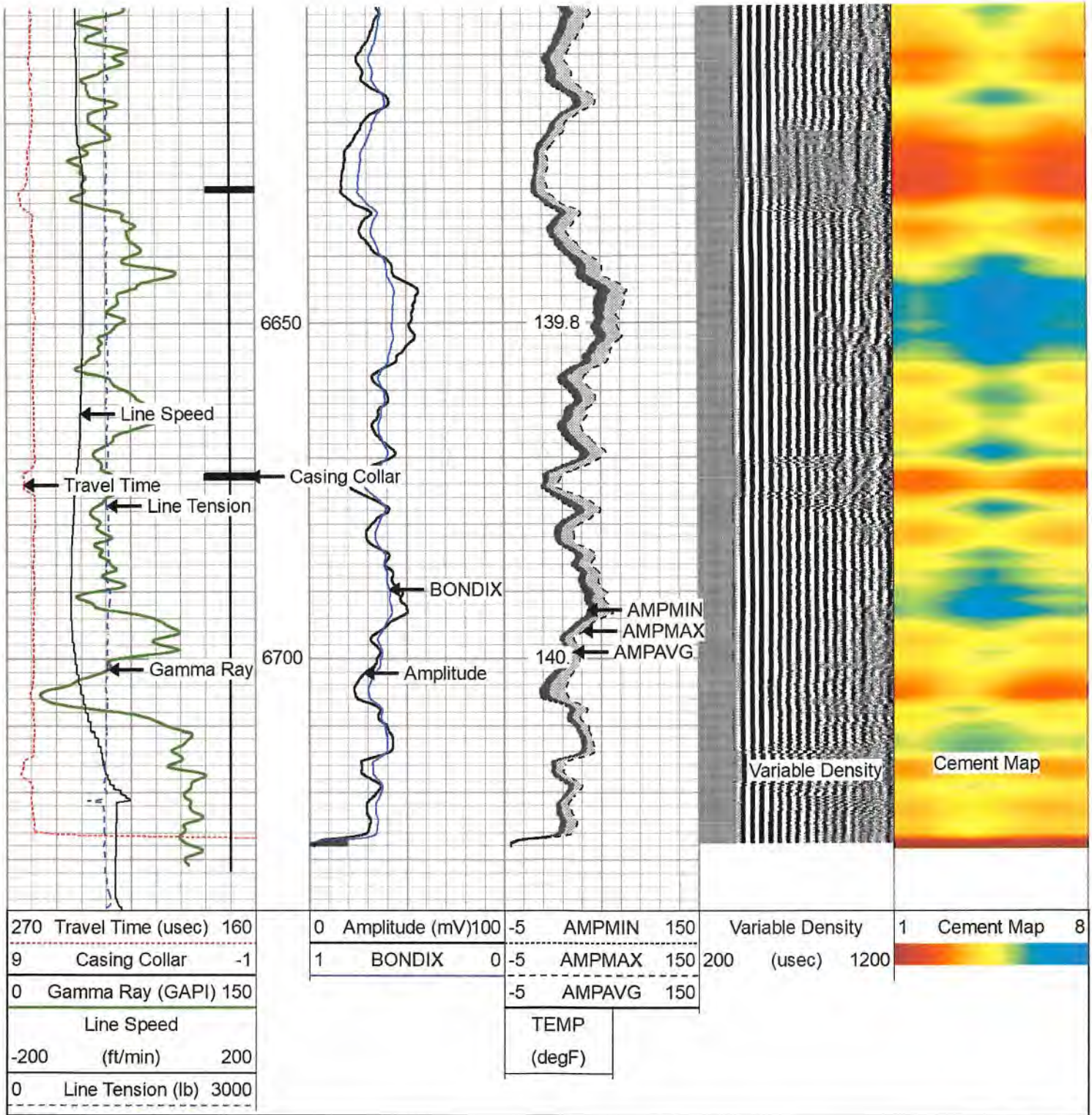
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Repeat Pass 0 PSI

Database File	antero_clutter_1h_rcbl_15_sep_2022.db		
Dataset Pathname	clutter_1H/run1/pass4		
Presentation Format	rcbl-bond index 1020		
Dataset Creation	Fri Sep 16 00:31:55 2022		
Charted by	Depth in Feet scaled 1:240		

270	Travel Time (usec)	160	0	Amplitude (mV)	100	-5	AMPMIN	150	Variable Density	1	Cement Map	8
9	Casing Collar	-1	1	BONDIX	0	-5	AMPMAX	150	200 (usec)	1200		
0	Gamma Ray (GAPI)	150				-5	AMPAVG	150				

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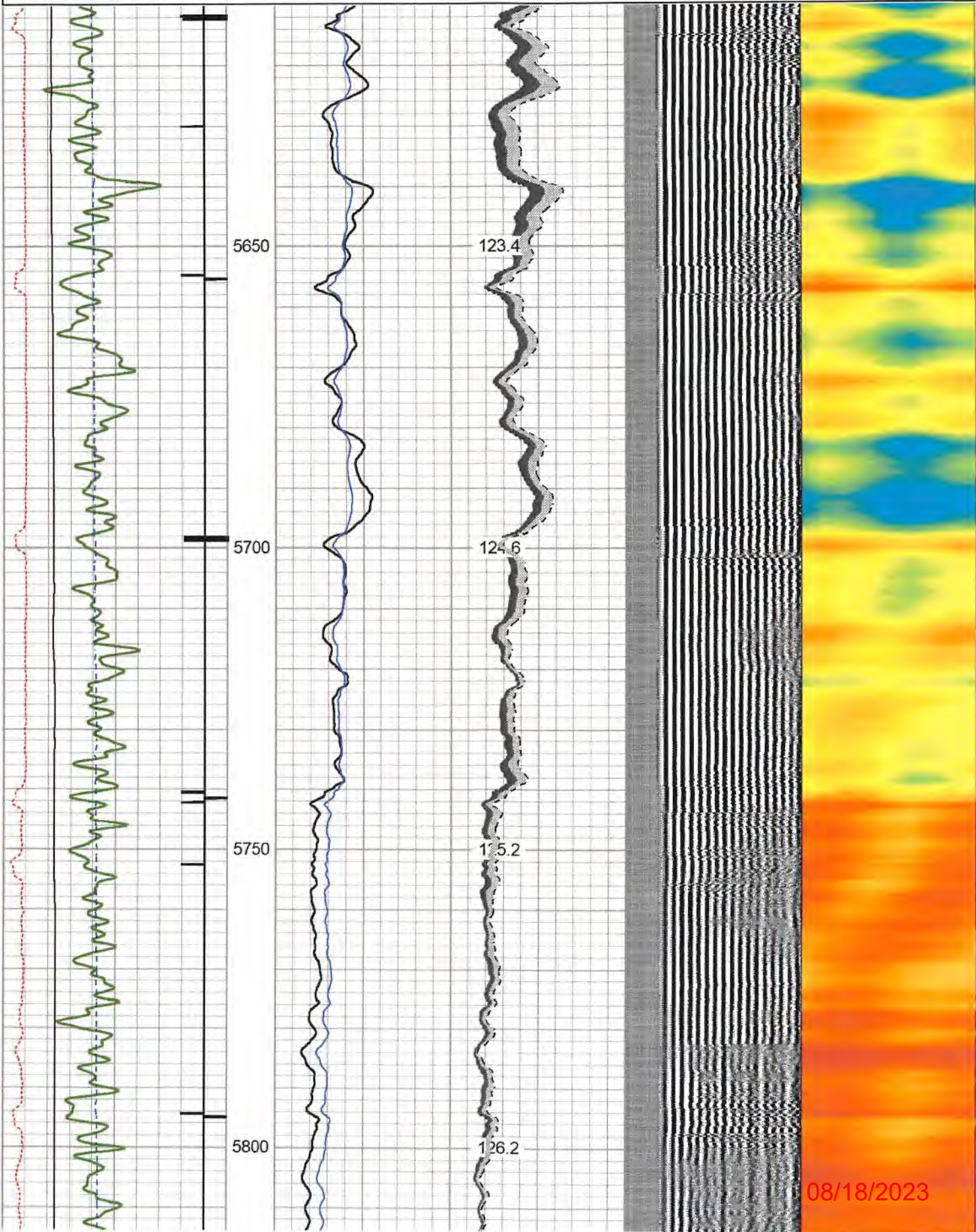
0 Gamma Ray (GAPI) 130

Line Speed
-200 (ft/min) 200

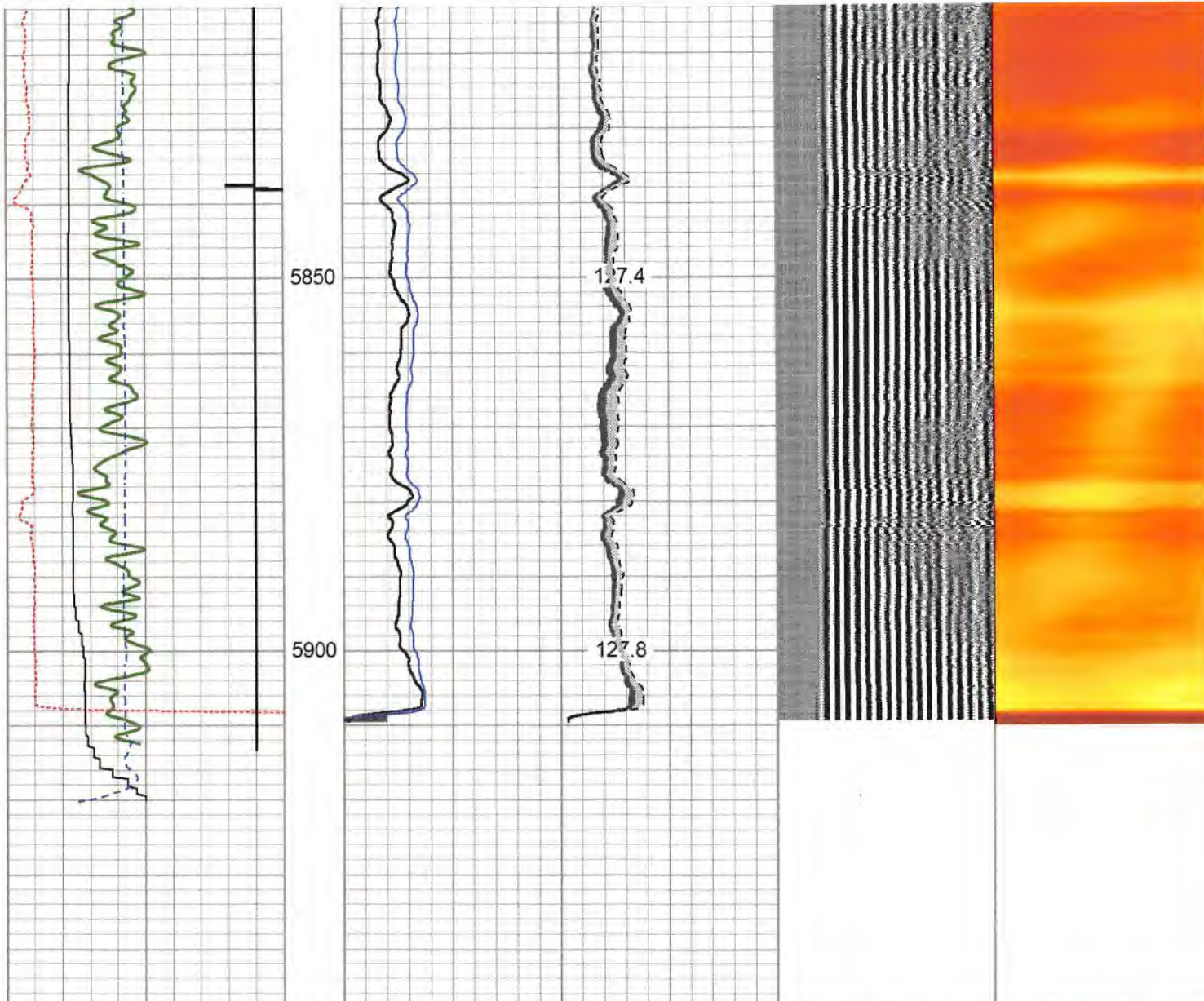
0 Line Tension (lb) 3000

-3 AWP AVG 130

TEMP
(degF)



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270	Travel Time (usec)	160	0	Amplitude (mV)	100	-5	AMPMIN	150	Variable Density	1	Cement Map	8
9	Casing Collar	-1	1	BONDIX	0	-5	AMPMAX	150	200	(usec)	1200	
0	Gamma Ray (GAPI)	150				-5	AMPAVG	150				
	Line Speed						TEMP					
-200	(ft/min)	200					(degF)					
0	Line Tension (lb)	3000										

Log Variables		DatabaseC:\ProgramData\Warrior\Data\antero_clutter_1h_rcbl_15_sep_2022.db Dataset field/clutter_1H/run1/pass7/_vars_					
Top - Bottom							
BHTEMP_Src	BOREID	BOTTEMP	CASEOD	CASETHCK	CASEWGHT	MAXAMPL	MINAMPL
TEMP	in 7.875	degF 160	in 5.5	in 0.415	lb/ft 23	mV 71.9	mV 3.4
MINATTN	PERFS	PPT	SRFTEMP	TDEPTH			
db/ft 9.6	No	usec 260	degF 74	ft 6700			

Variable Description

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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_clutter_1h_rcbl_15_sep_2022.db
 Dataset Pathname clutter_1H/run1/pass7
 Dataset Creation Fri Sep 16 00:40:36 2022

Gamma Ray Calibration Report

Serial Number: 275
 Tool Model: Probe
 Performed: Thu Apr 07 08:17:10 2016
 Calibrator Value: 100.0 GAPI
 Background Reading: 35.0 cps
 Calibrator Reading: 160.0 cps
 Sensitivity: 0.5000 GAPI/cps

Segmented Cement Bond Log Calibration Report

Serial Number: FW1312-32
 Tool Model: Probe275T
 Calibration Casing Diameter: 5.500 in
 Calibration Depth: 191.158 ft

Master Calibration, performed Fri Sep 16 00:13:48 2022:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.010	0.704	3.400	71.921	98.818	2.382
CAL	0.846	0.967				
5'	0.008	0.702	3.400	71.921	98.785	2.608
SUM						
S1	0.001	0.722	0.000	100.000	138.577	-0.101
S2	0.002	0.691	0.000	100.000	145.135	-0.243
S3	0.001	0.753	0.000	100.000	132.905	-0.120
S4	0.000	0.728	0.000	100.000	137.364	-0.042
S5	-0.000	0.681	0.000	100.000	146.902	0.009
S6	-0.000	0.671	0.000	100.000	149.002	0.002
S7	-0.000	0.689	0.000	100.000	145.086	0.062
S8	0.000	0.725	0.000	100.000	138.080	-0.042

Internal Reference Calibration, performed (Not Performed):

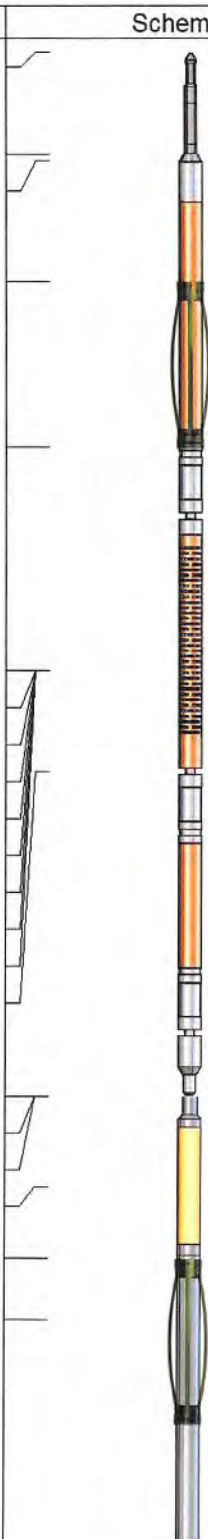
	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	0.846	0.967	1.000	0.000

Air Zero Calibration, performed Thu Sep 15 21:55:09 2022:


08/18/2023

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

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)	
CHD	18.07		CHD-Titan Standard 1 7/16" Cable Head	1.02	1.44	1.00	
RBT	17.05						
HeadVolt	16.99						
CENT	15.78			CENT-Overbody Antelope (SP-919-0233)	1.67	4.88	5.00
Temp	14.14						
WVFS8	11.91			RBT-Probe275T (FW1312-32) Probe 2.75" Radial with Integral Temperature Sub	9.39	2.75	90.00
WVFS7	11.91						
WVFS6	11.91						
WVFS5	11.91						
WVFS4	11.91						
WVFS3	11.91						
WVFS2	11.91						
WVFS1	11.91						
WVF3FT	11.91						
WVF5FT	10.91						
GR	7.66						
WVFCAL	7.66						
HEADVOLT	7.66						
CCL	6.75						
CENT	6.03						
GR	5.42		GR-Probe (275) Probe 2 3/4" Logging Gamma Ray	4.78	2.75	57.00	
			CENT-Overbody Antelope (SP-919-0233)	1.67	4.88	5.00	

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CENT	2.88		CENT-Probe275 2.75" Centralizer	2.88	2.75	20.00
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Dataset: antero_clutter_1h_rcbl_15_sep_2022.db: field/clutter_1H/run1/pass7
 Total length: 18.07 ft
 Total weight: 178.00 lb
 O.D.: 4.88 in

 Nine	Company	Antero Resources
	Well	Elden Cluster 1H
	Field	River Front
	County	Tyler
	State	WV