



**RADIAL CEMENT BOND LOG  
GAMMA RAY / CCL / VDL**

Company ANTERO RESOURCES CORPORATION  
Well LINDSEY UNIT 2 H  
Field TYLER  
County TYLER  
State W.V.

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Well LINDSEY UNIT 2 H  
Field TYLER  
County TYLER  
State W.V.

Location: API #: \_\_\_\_\_  
SEC TWP RGE  
Permanent Datum G.L. Elevation 827'  
Log Measured From K.B. OF 30'  
Drilling Measured From K.B.  
Other Services  
Elevation  
K.B. 857'  
D.F. 857'  
G.L. 827'

Date	5/1/19						
Run Number	ONE						
Depth Driller	17454'						
Depth Logger	7103'						
Bottom Logged Interval	7103'						
Top Log Interval	SURFACE						
Open Hole Size	8.5"						
Type Fluid	WATER						
Density / Viscosity	N/A						
Max. Recorded Temp.	145 DEG						
Estimated Cement Top	2350'						
Time Well Ready	N/A						
Time Logger on Bottom	N/A						
Equipment Number	624874						
Location	BRIDGEPORT W.V.						
Recorded By	S.MAXWELL						
Witnessed By	J.BURKS						
Borehole Record		Casing Record					
Run Number	Bit	From	To	Size	Weight	From	To
				5.5"	23	17454'	SURFACE

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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**

THANK YOU FOR USING KLX ENERGY SERVICES  
LOG WAS RAN ON 5.5" CASING WITH 1500 PSI ON WELL  
ZERO AT K.B. OF 30'  
MARKER JOINT @ 6012'-6022'  
LOG WAS SHIFTED DOWN HOLE 22'

RECEIVED  
Office of Oil and Gas  
APR 07 2023  
WV Department of  
Environmental Protection



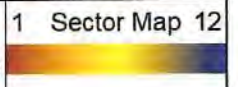
**MAIN PASS**

Database File lindsey2h.db  
 Dataset Pathname pass6.3  
 Presentation Format antero  
 Dataset Creation Thu May 16 10:59:05 2019  
 Charted by Depth in Feet scaled 1:240

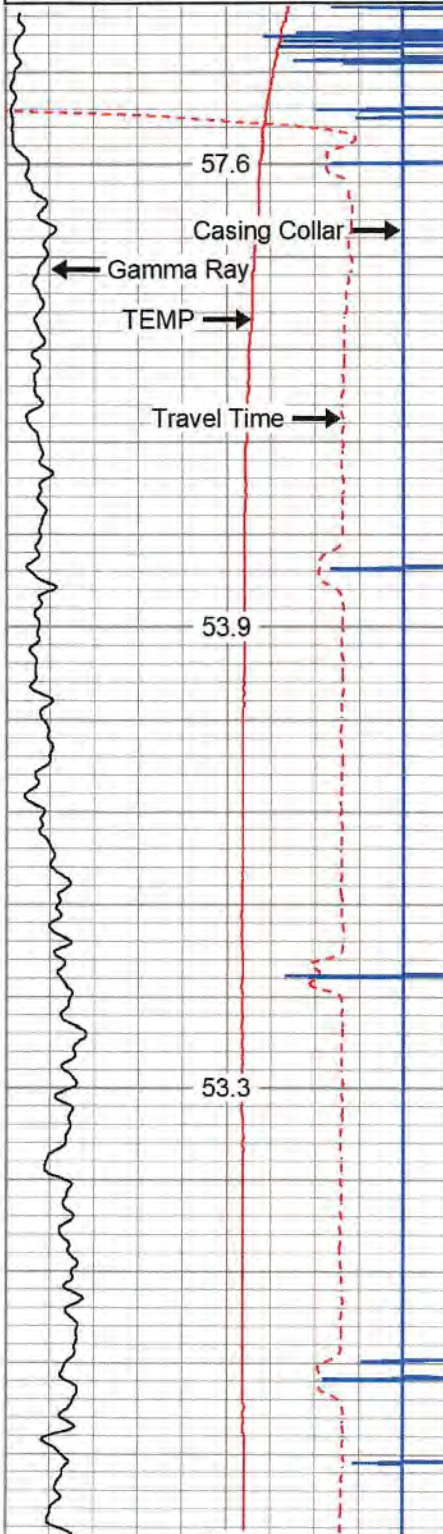
280	Travel Time (usec)	180
9	Casing Collar	-1
0	Gamma Ray (GAPI)	180
0	TEMP (degF)	100
180	GR (GAPI)	360

0	Amplitude (mV)	100
0	Amp X5 (mV)	20
1	BONDIX	0

Sector Amp AVG	VDL	1	Sector Map	12
Sector Amp MAX	200 (usec)	1200		
Sector Amp MIN				



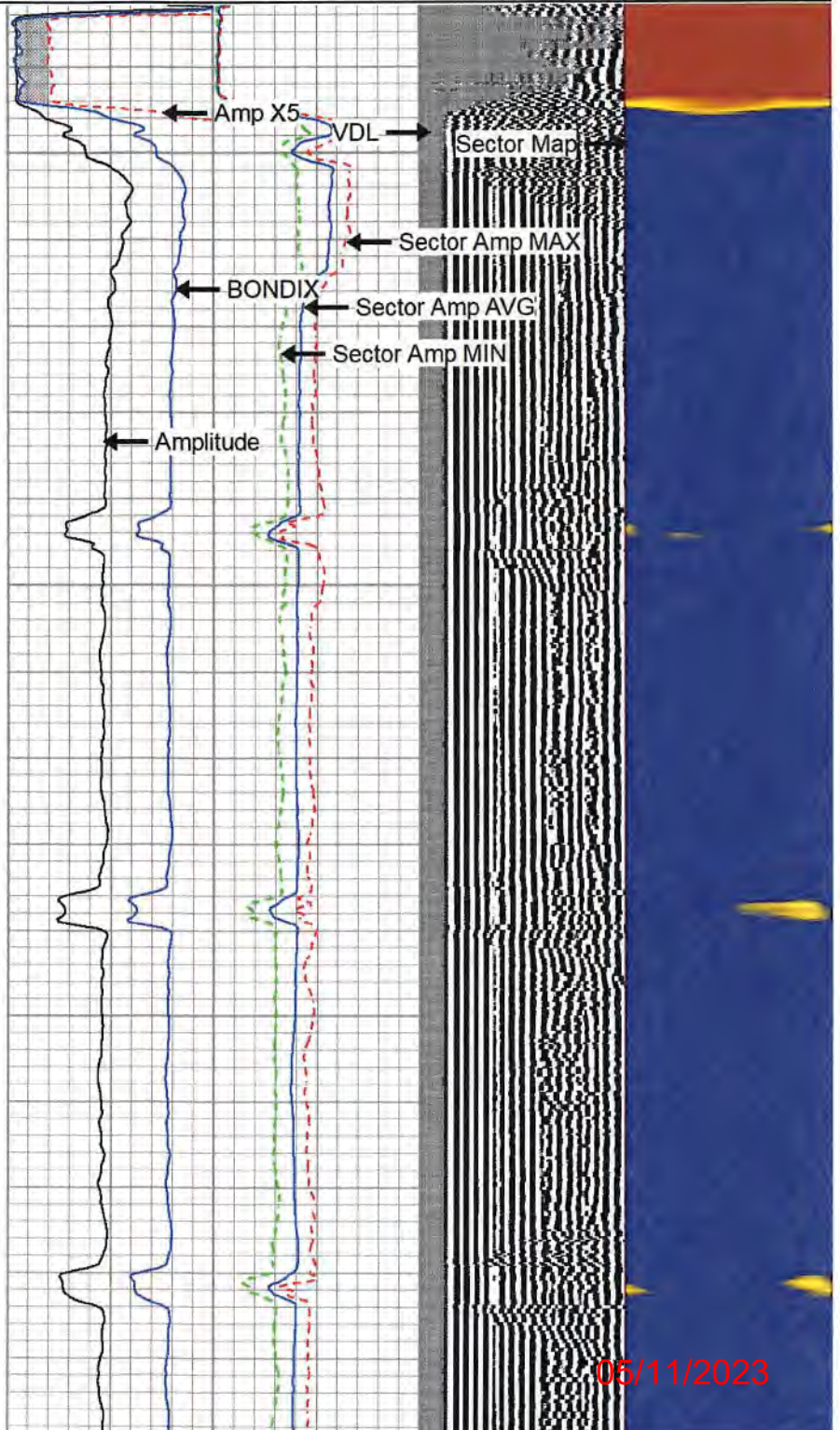
TEMP (degF)



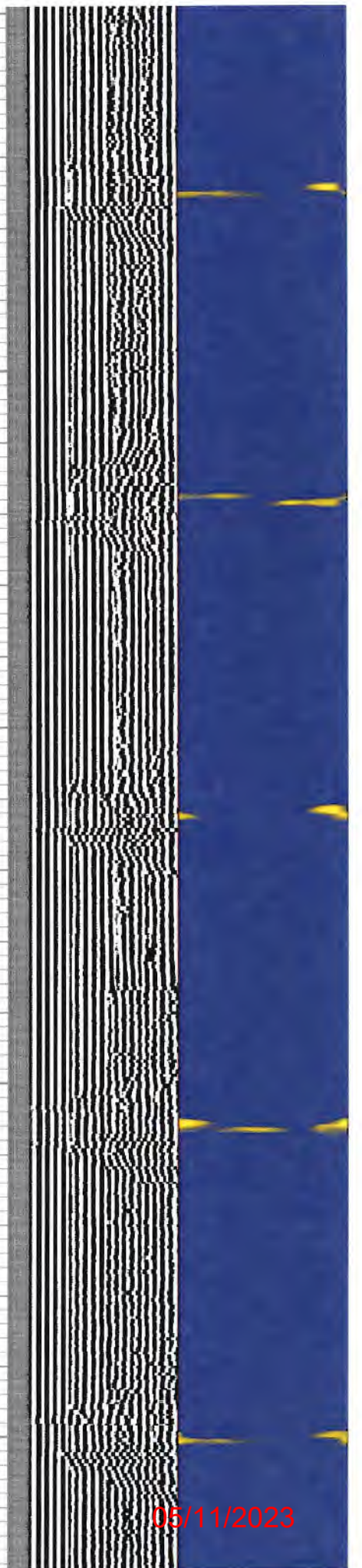
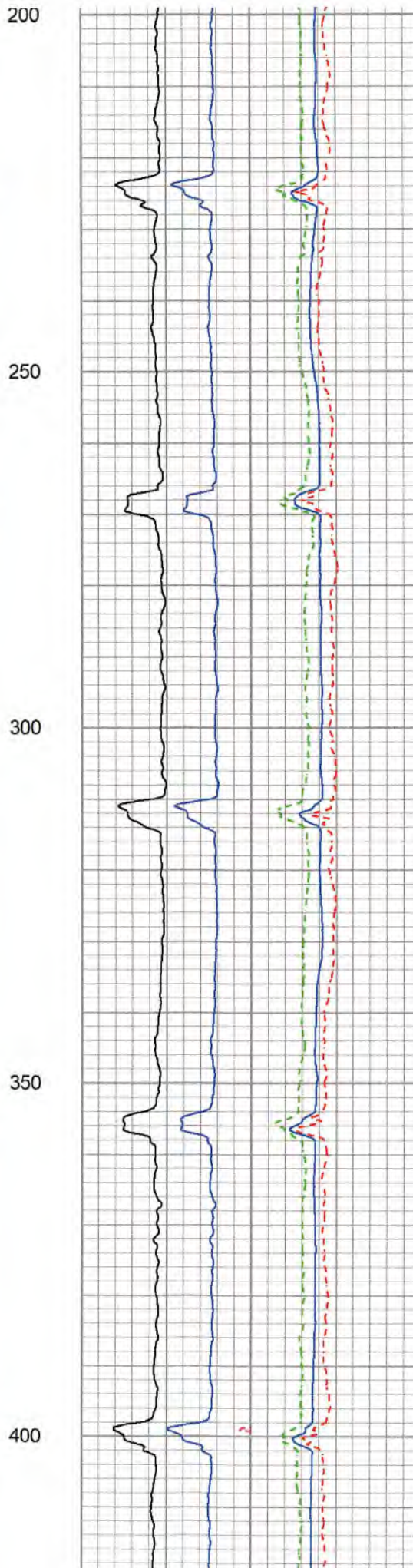
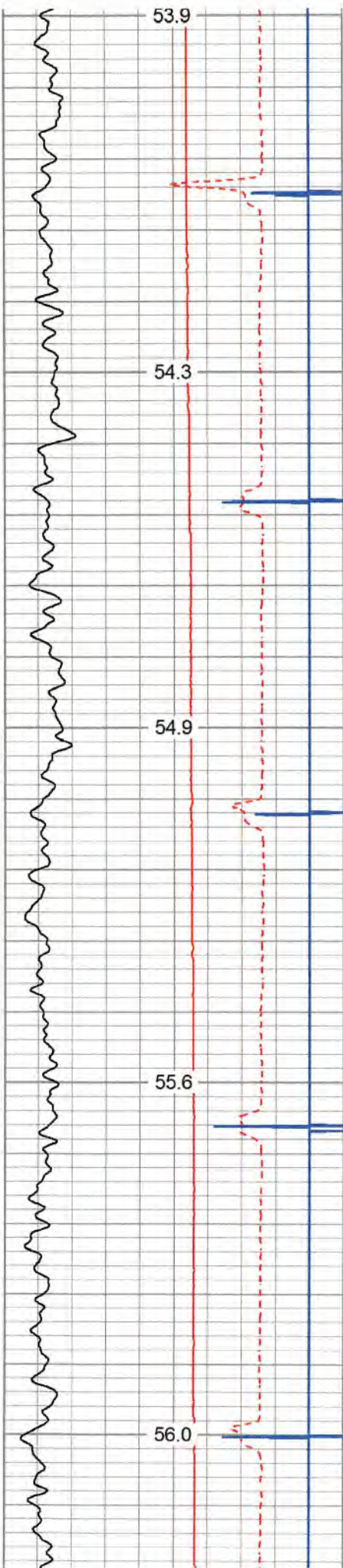
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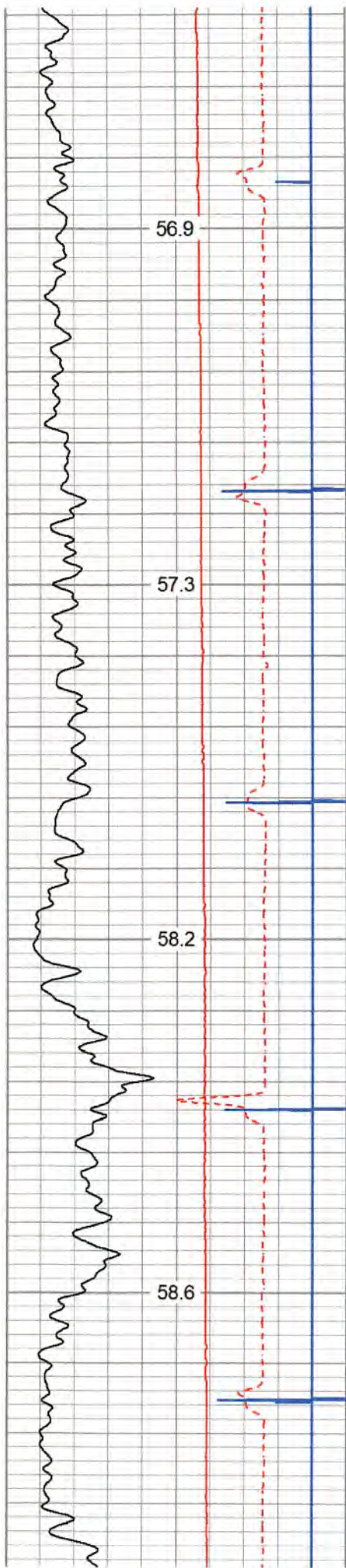
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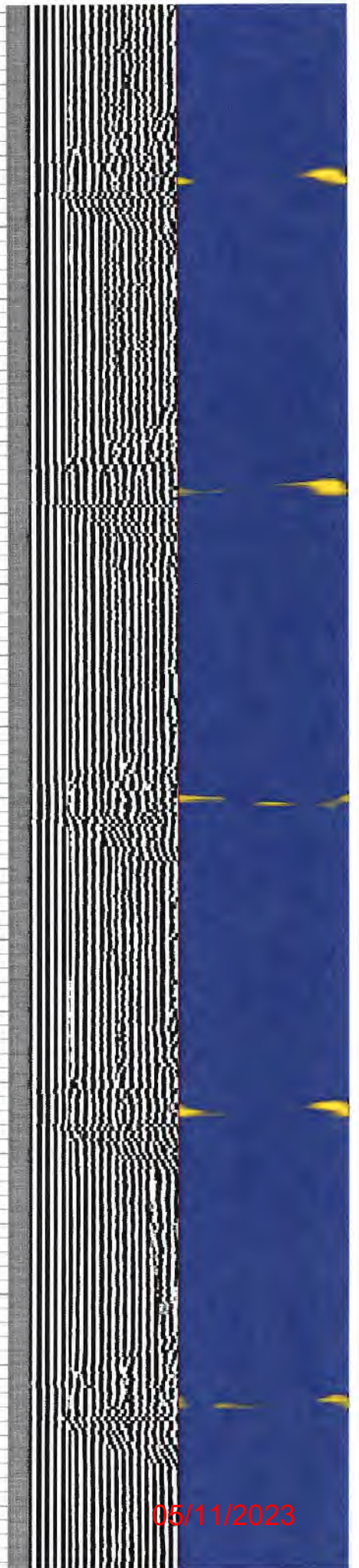
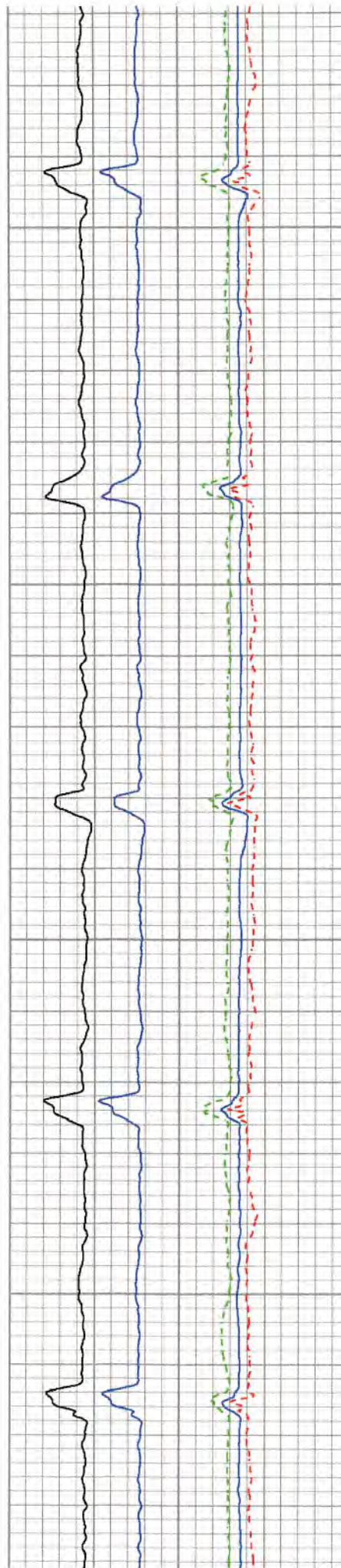


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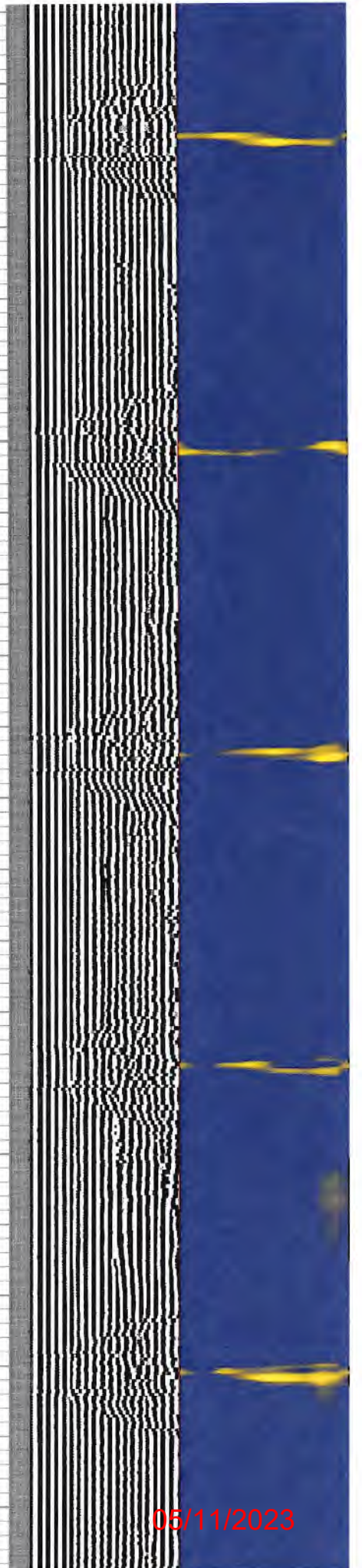
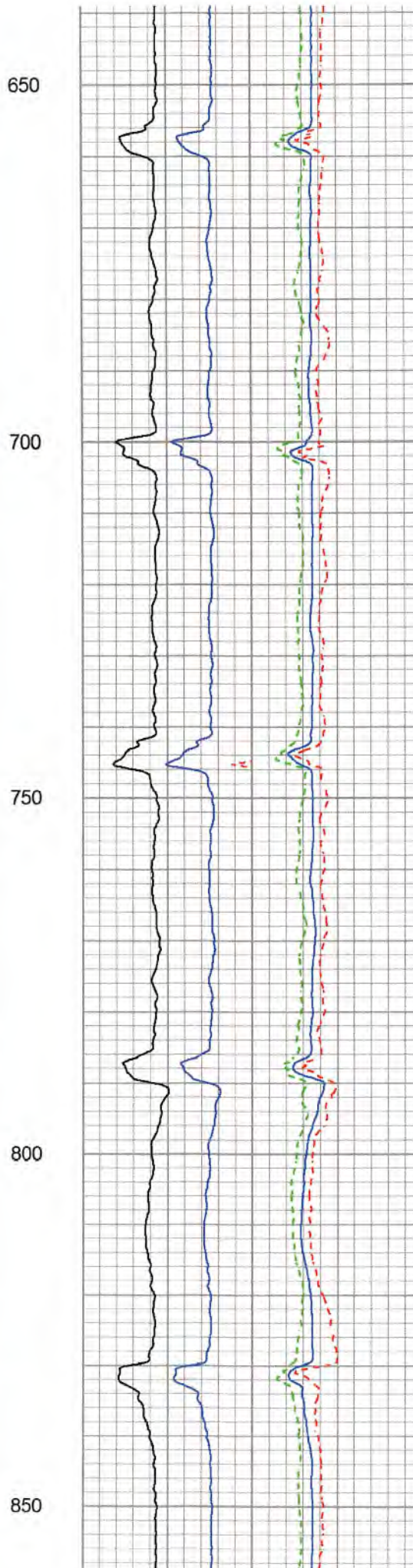
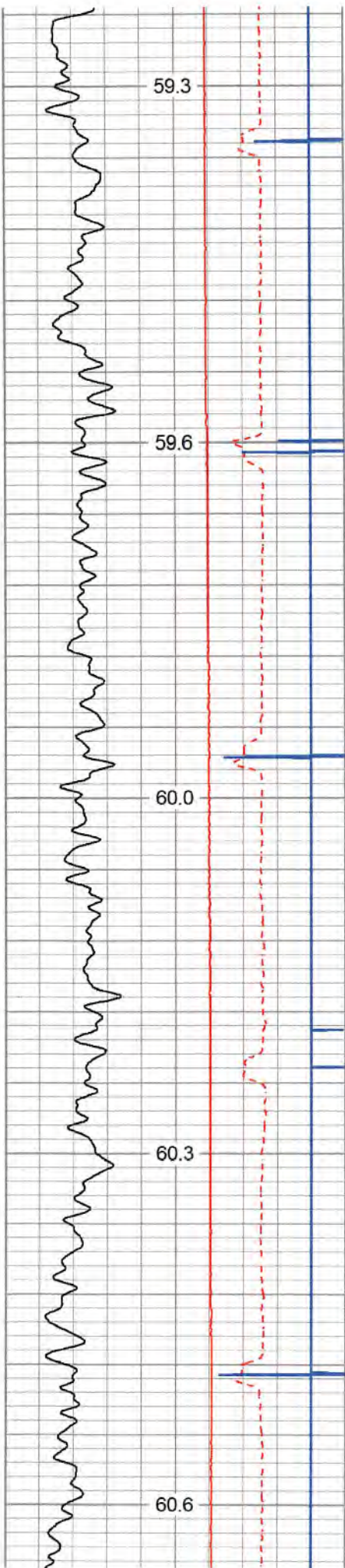
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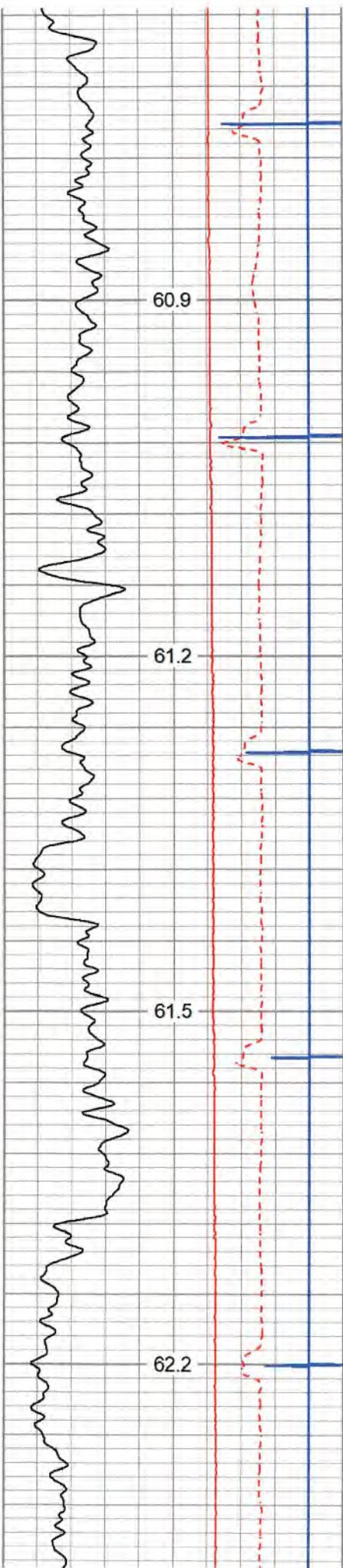
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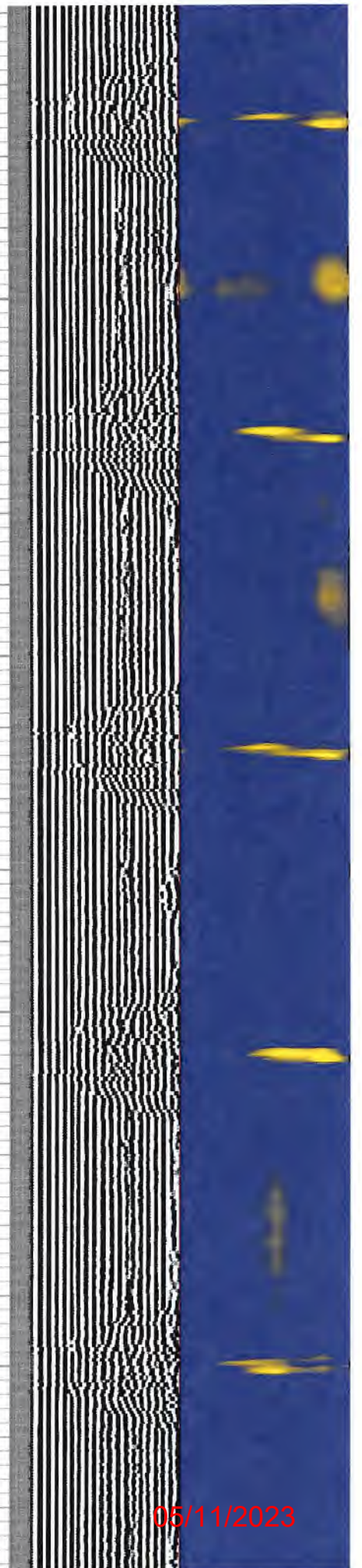


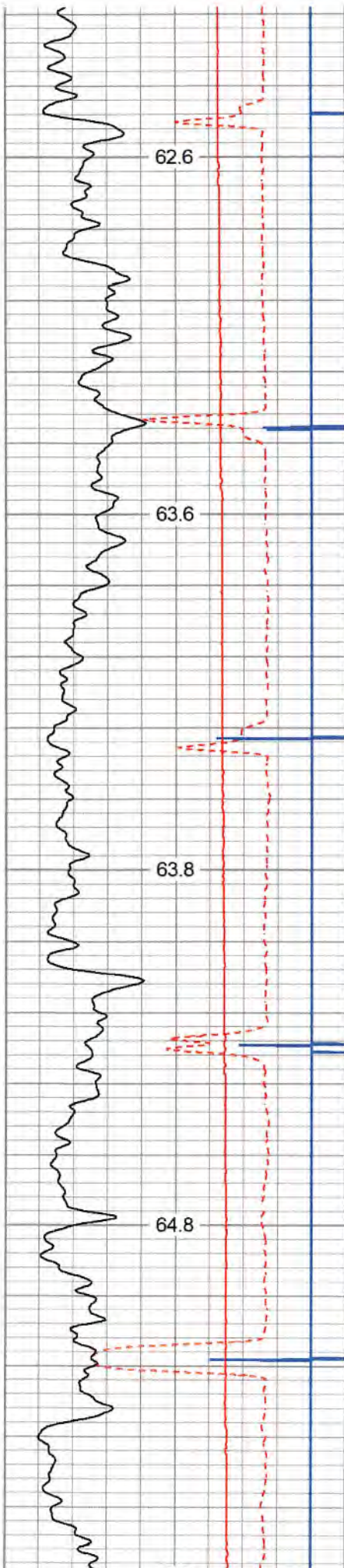
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1000

1050



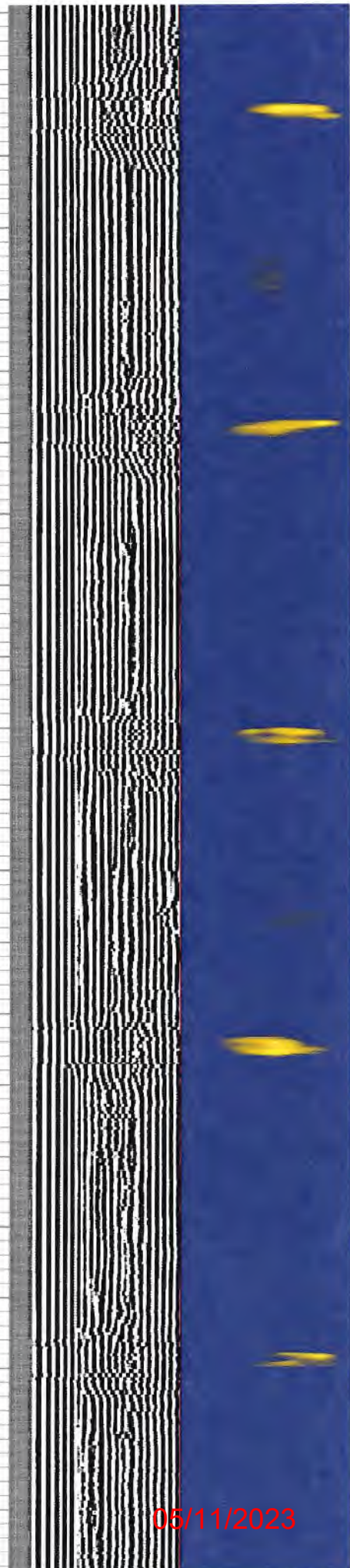
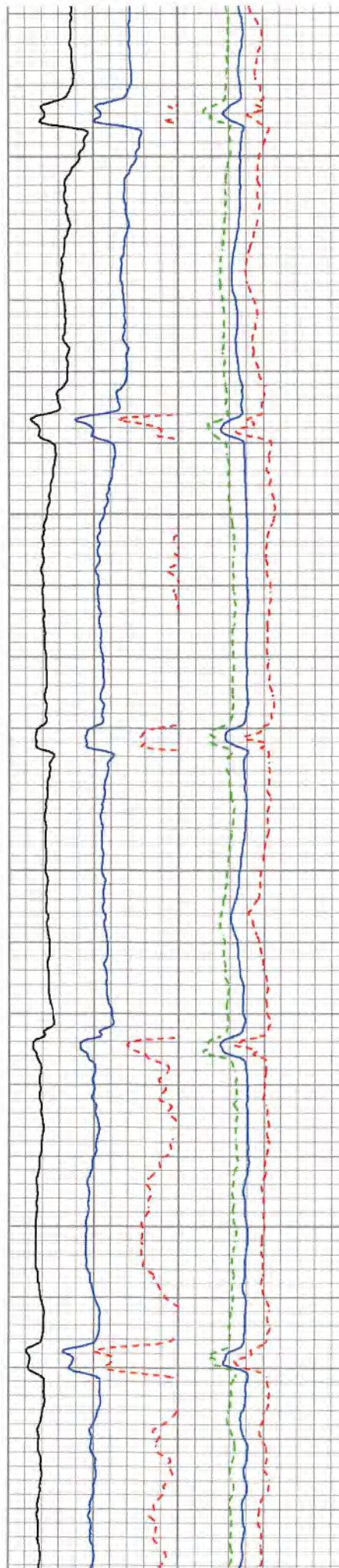


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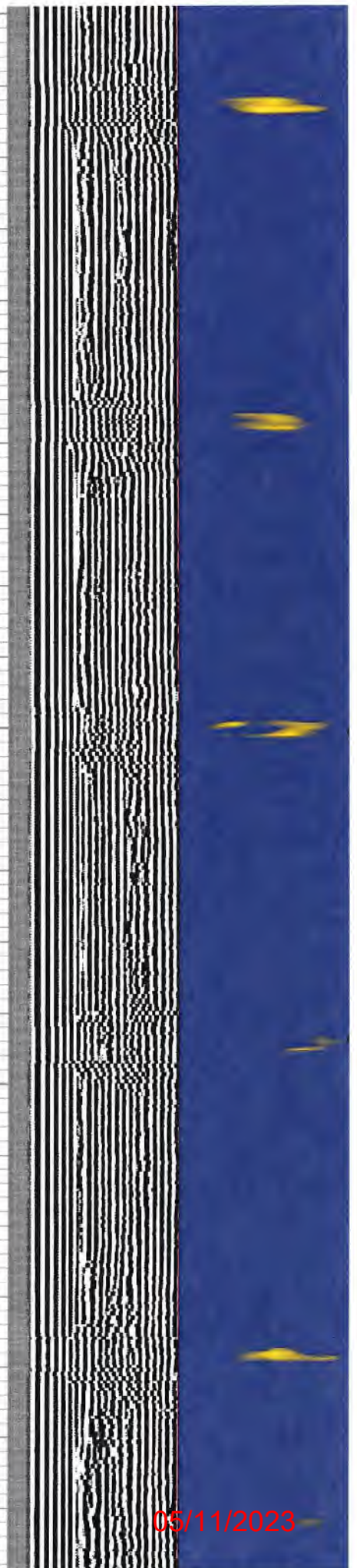
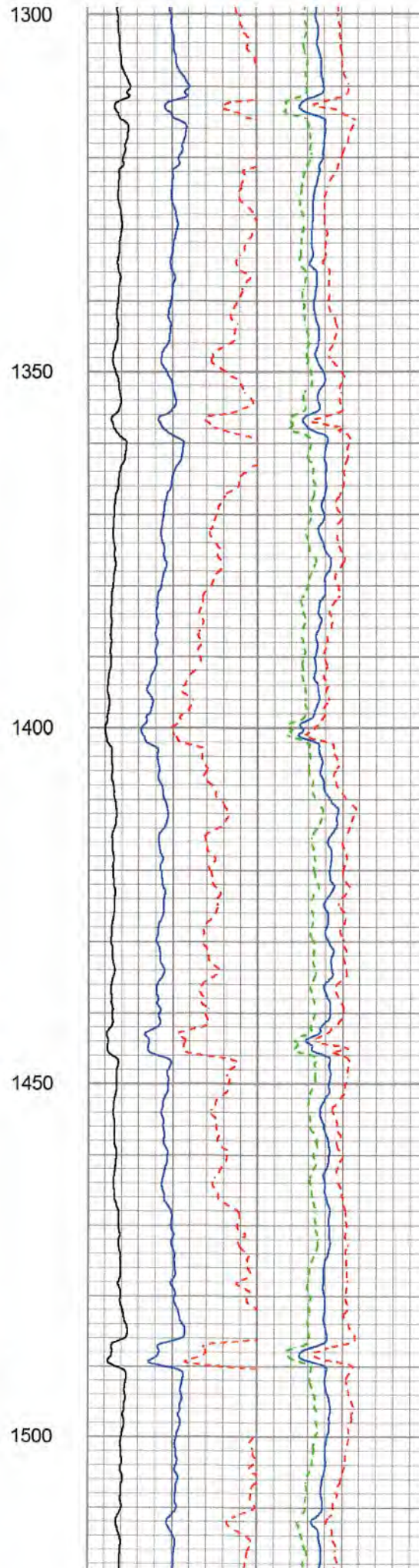
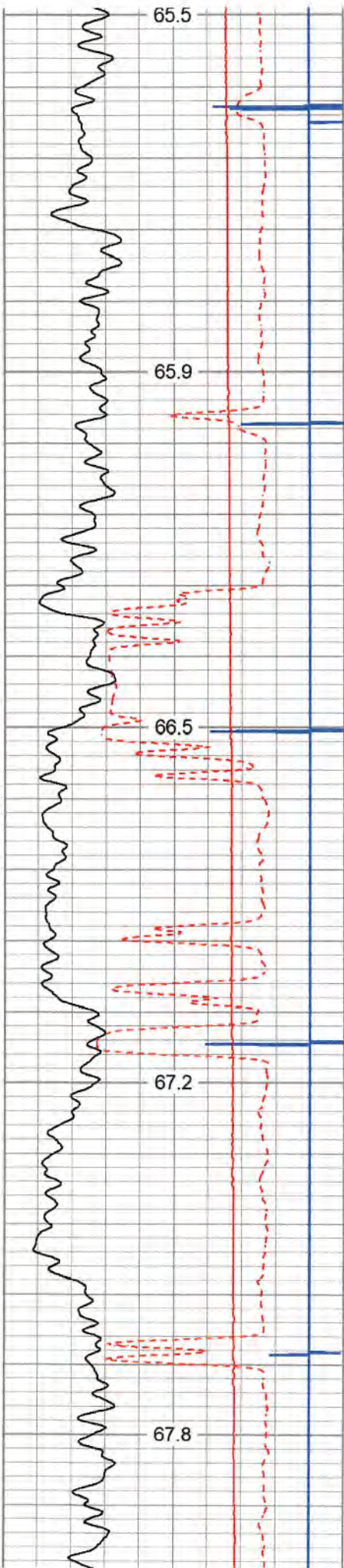
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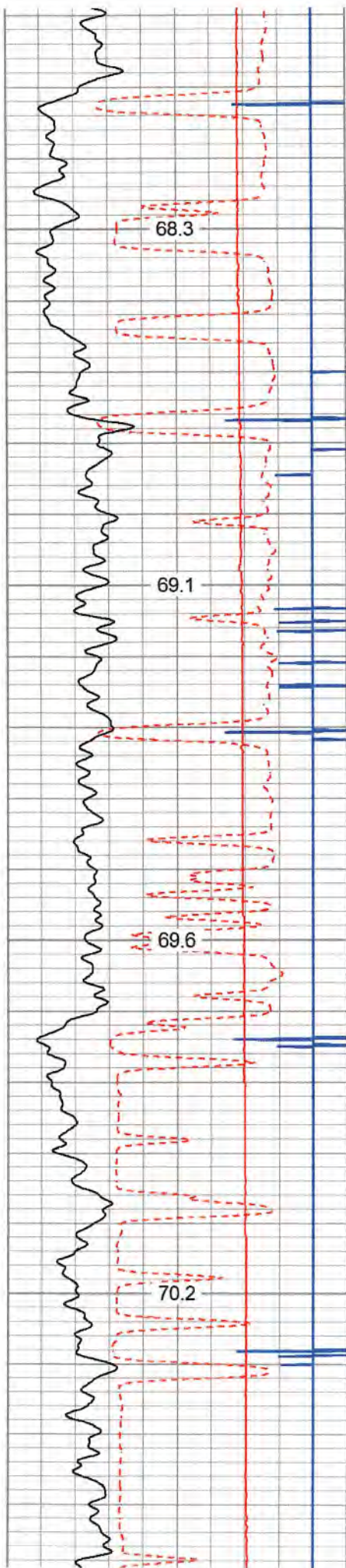
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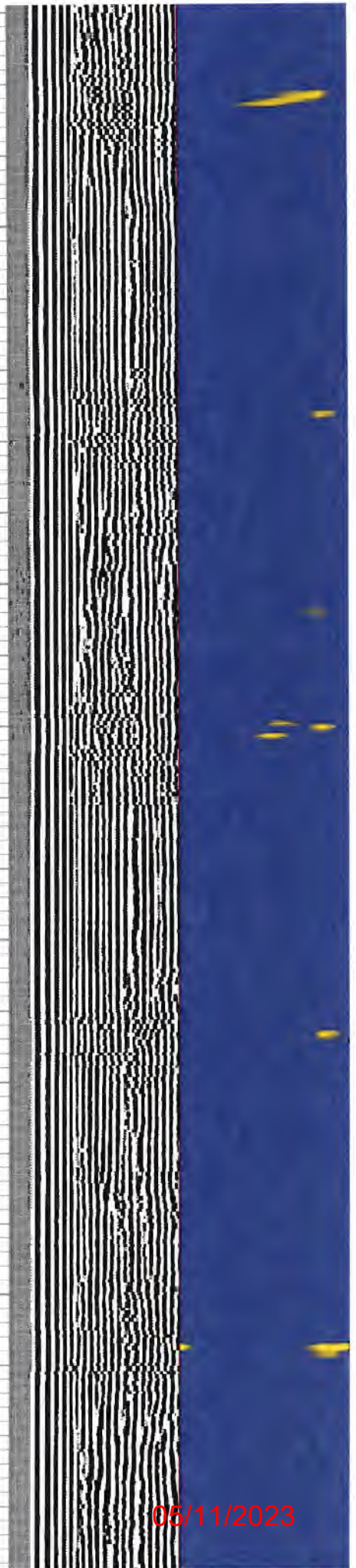
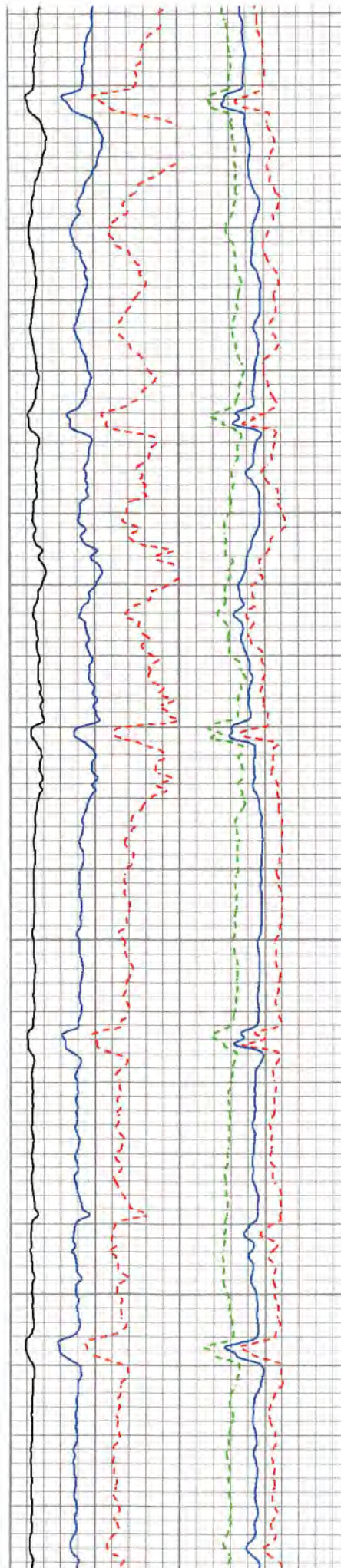


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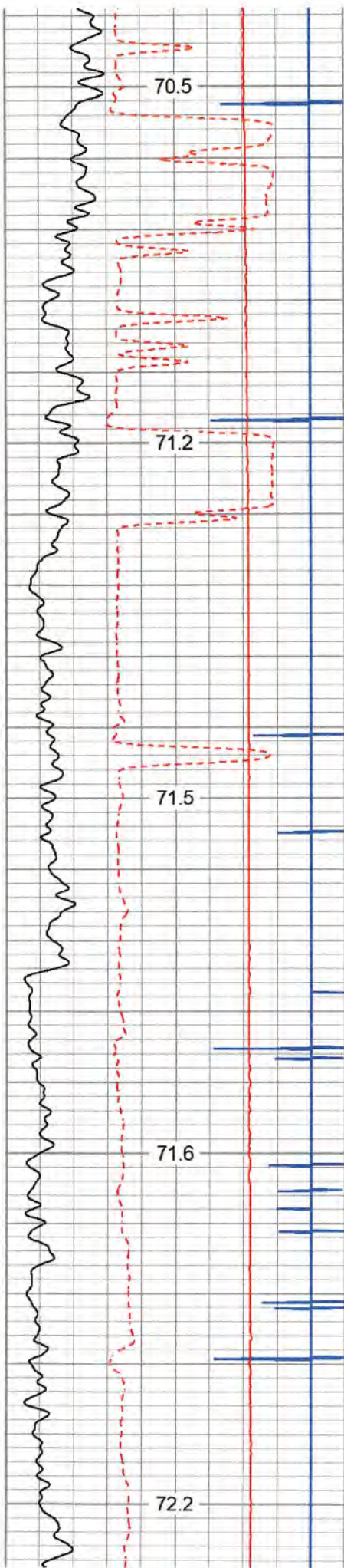
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1650

1700



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1750

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1900

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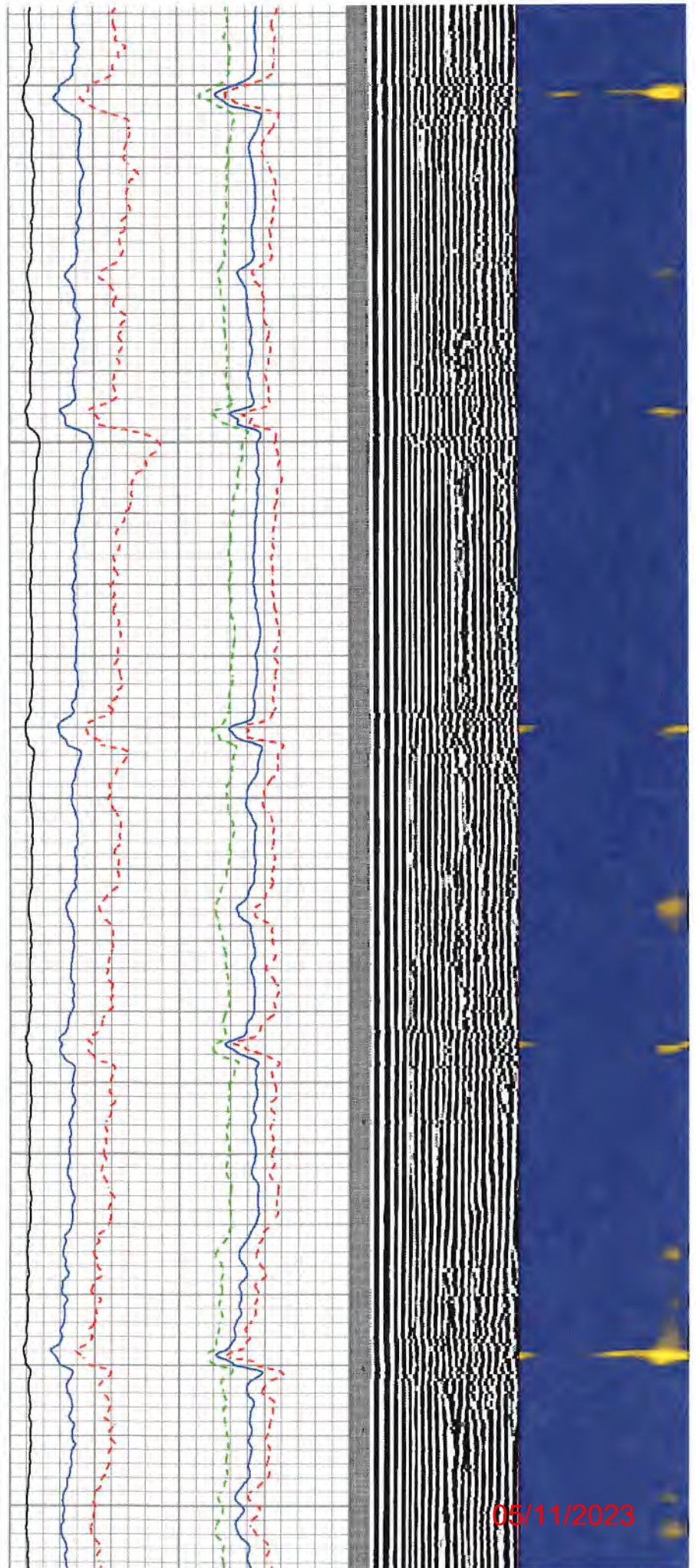
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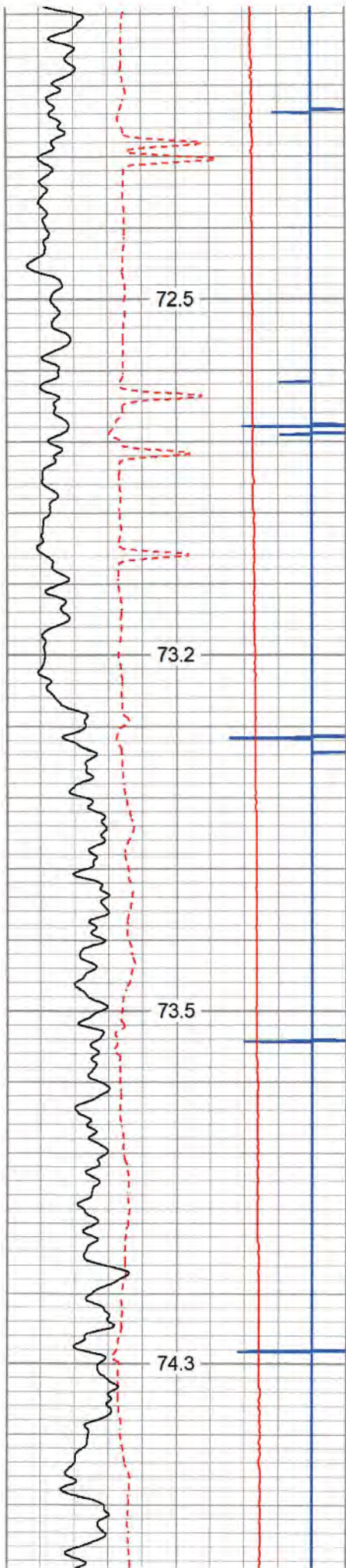
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71.6

72.2



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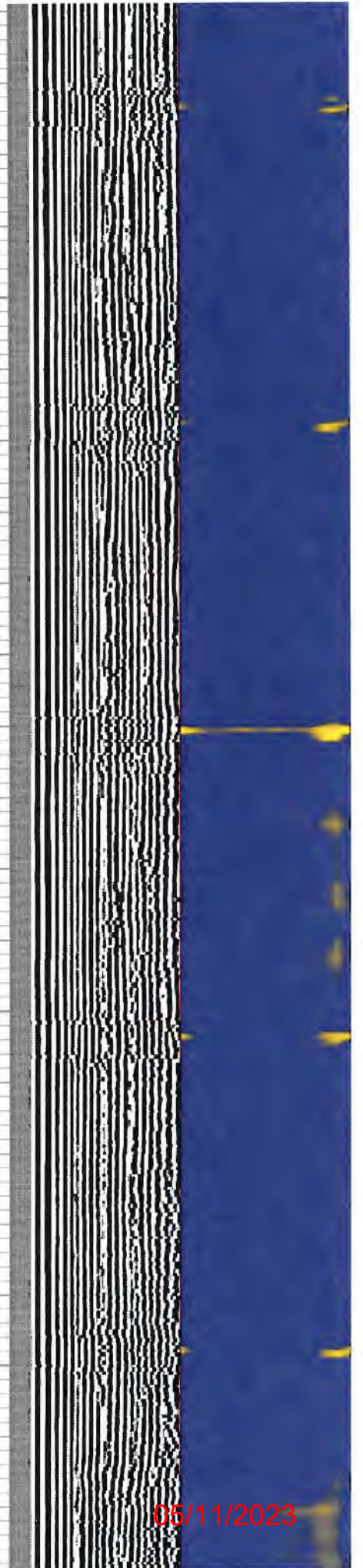
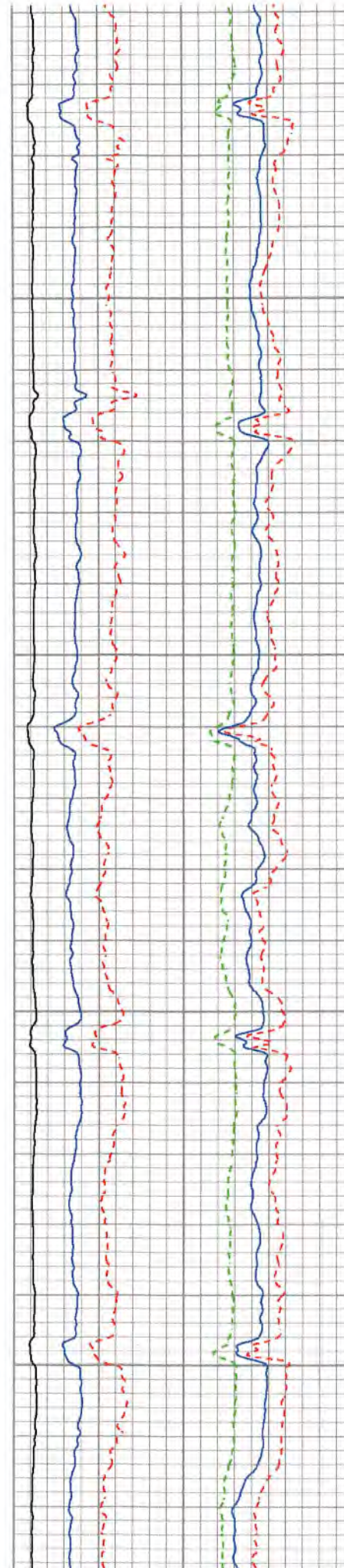


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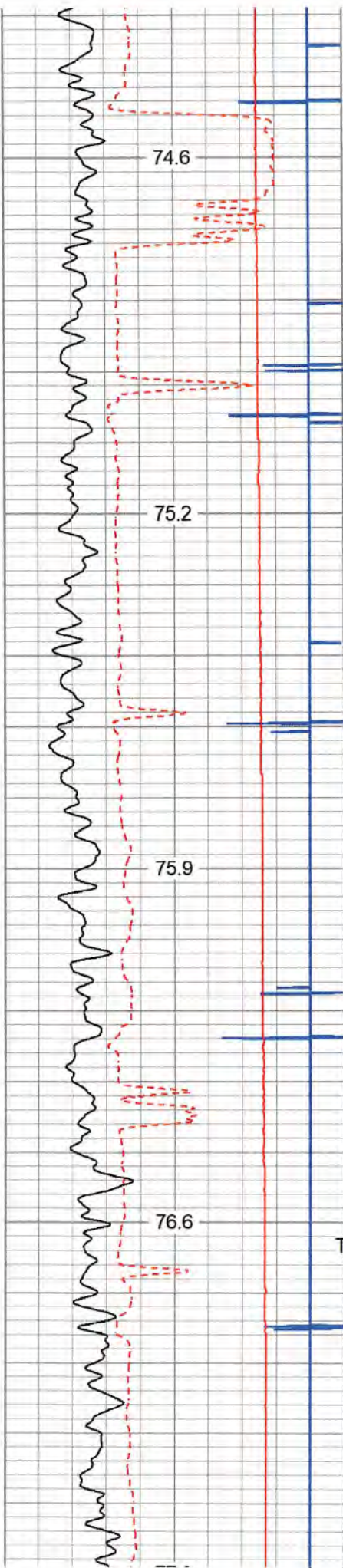
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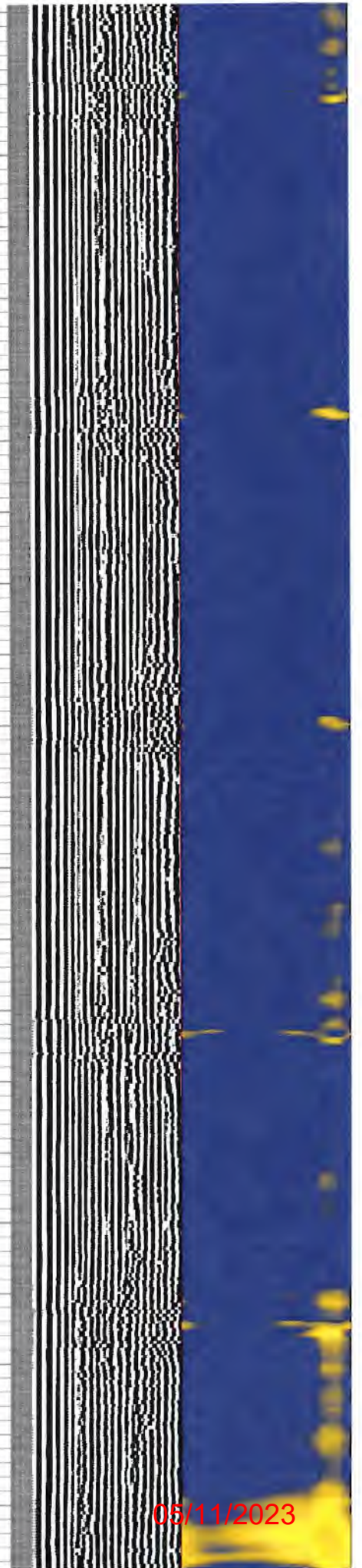
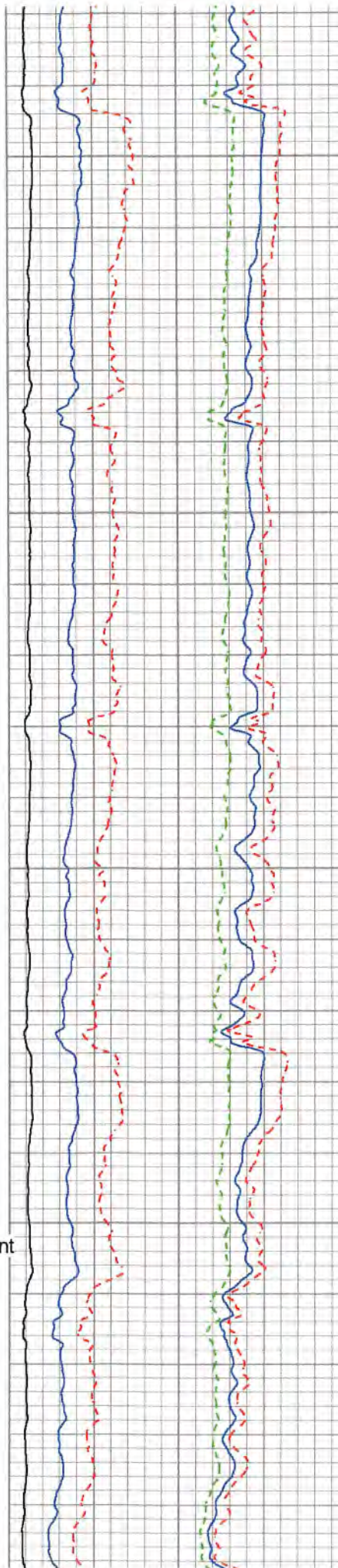
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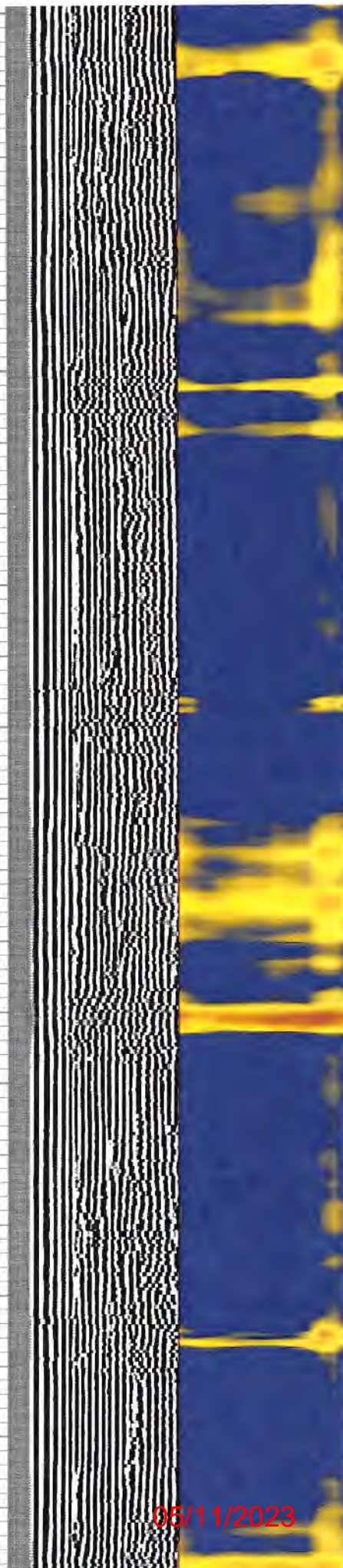
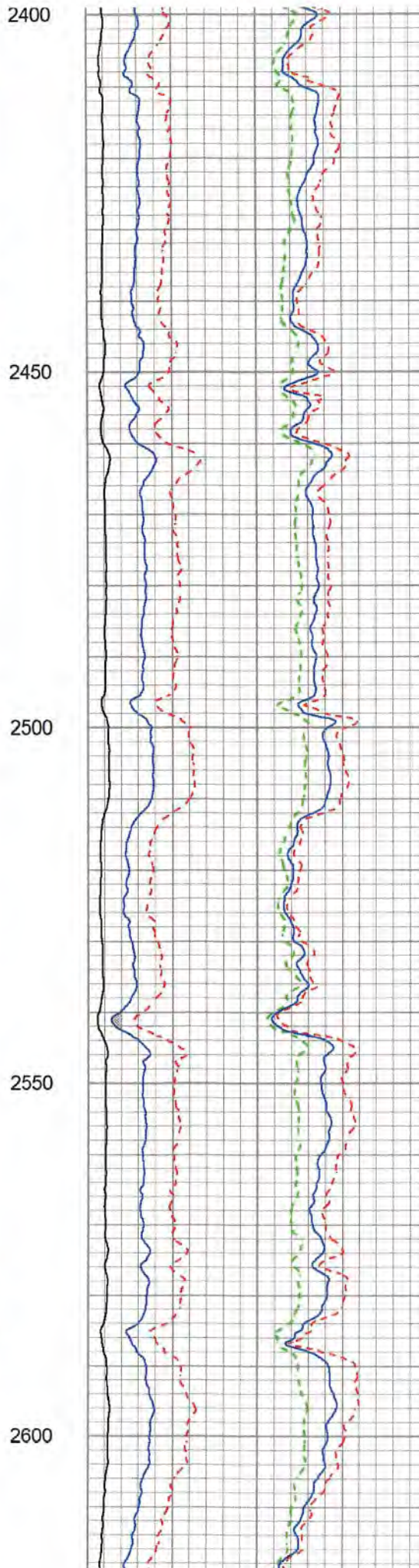
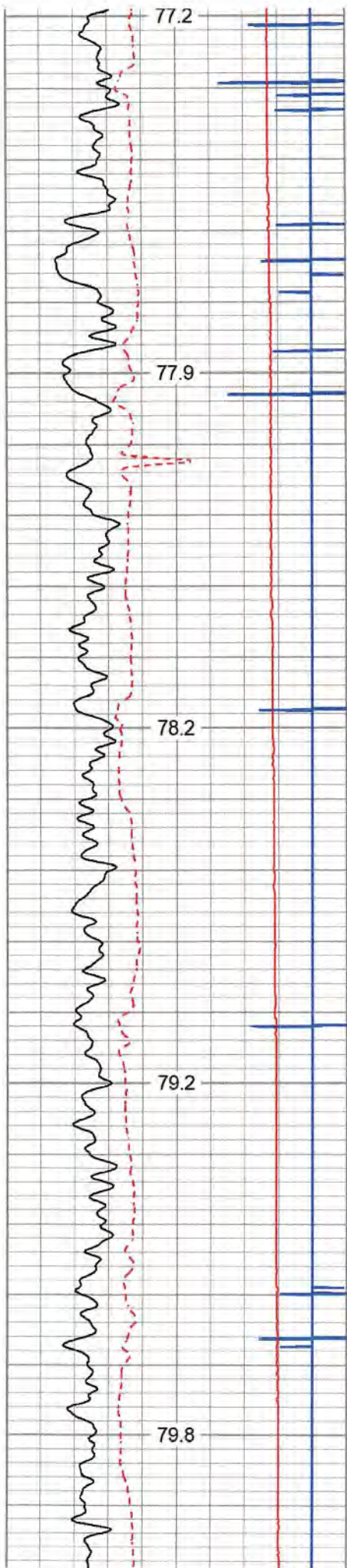
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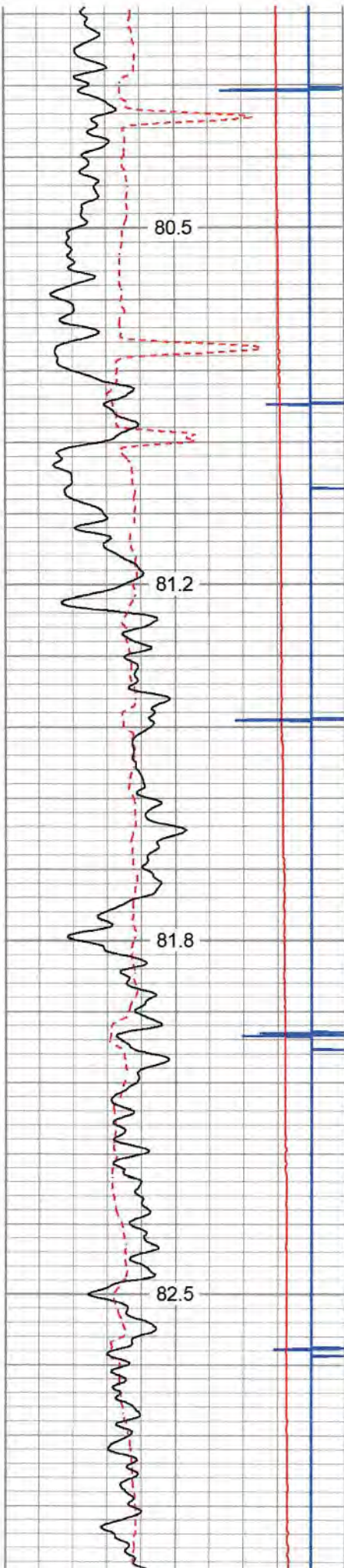
Top of Cement



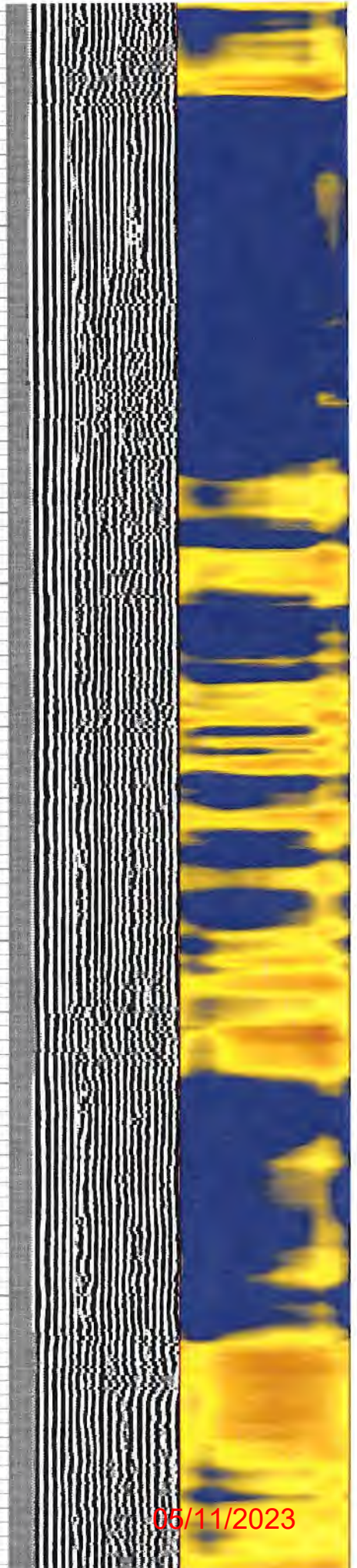
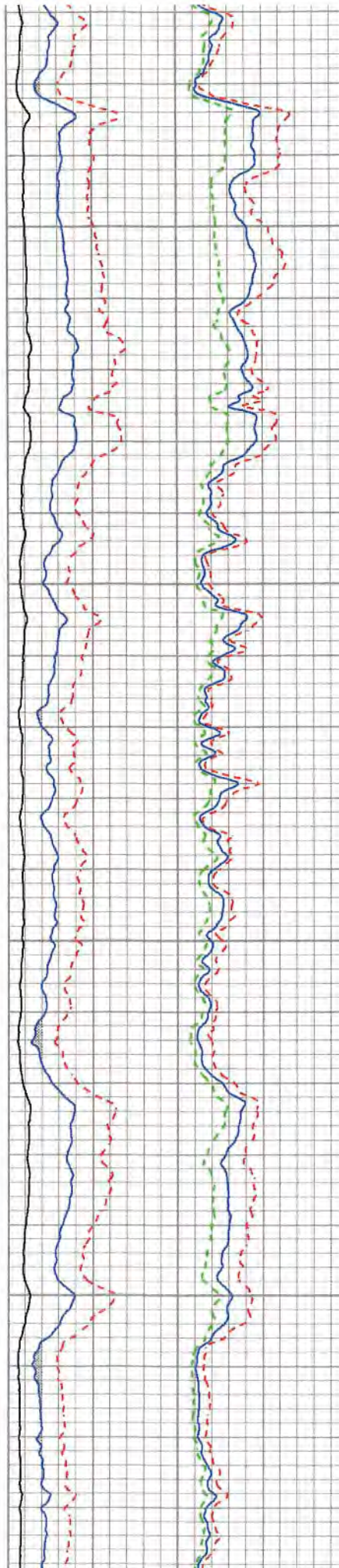
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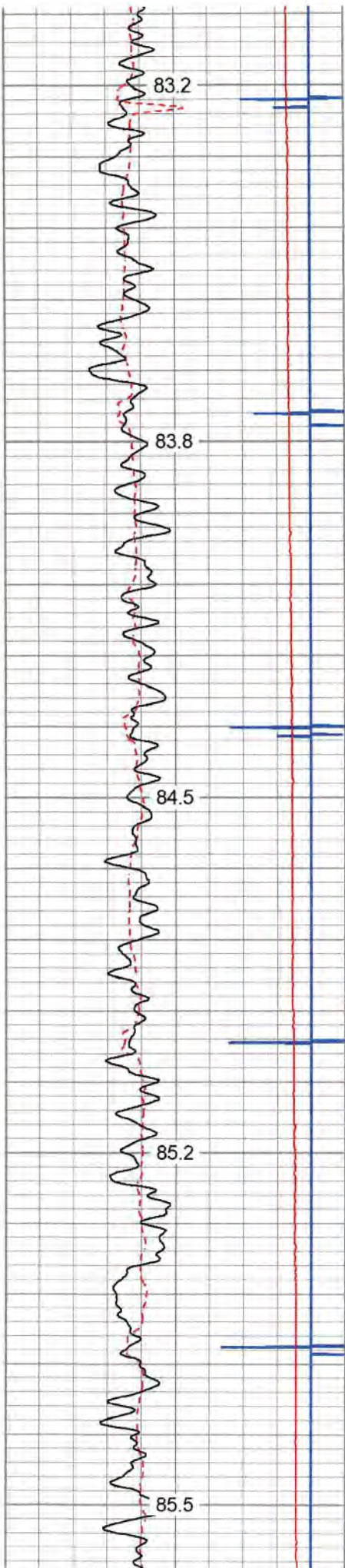
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2650  
2700  
2750  
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06/11/2023



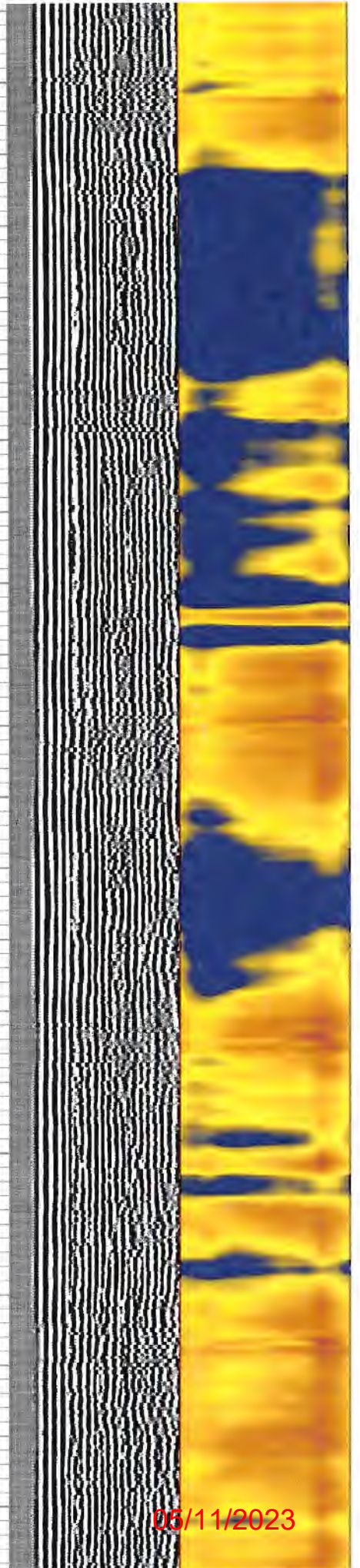
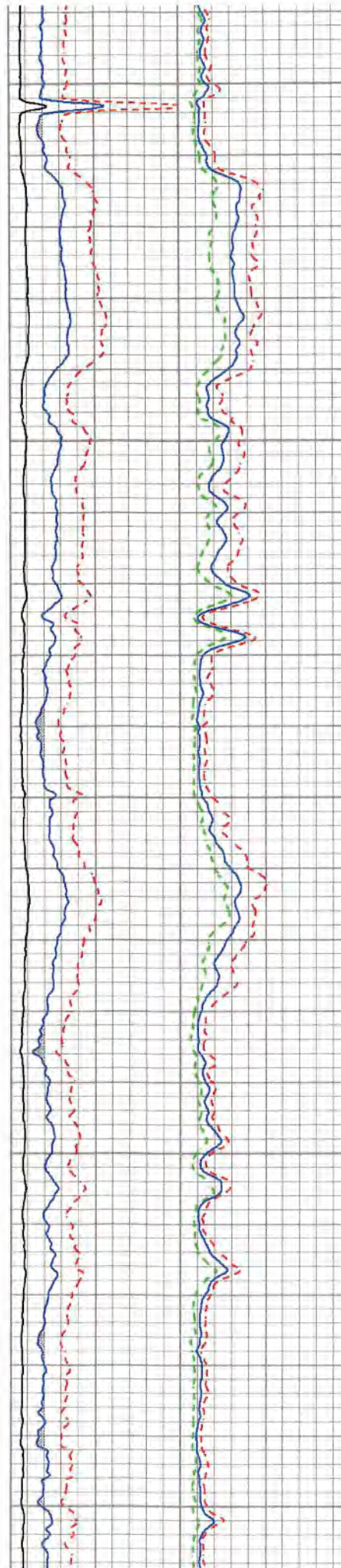
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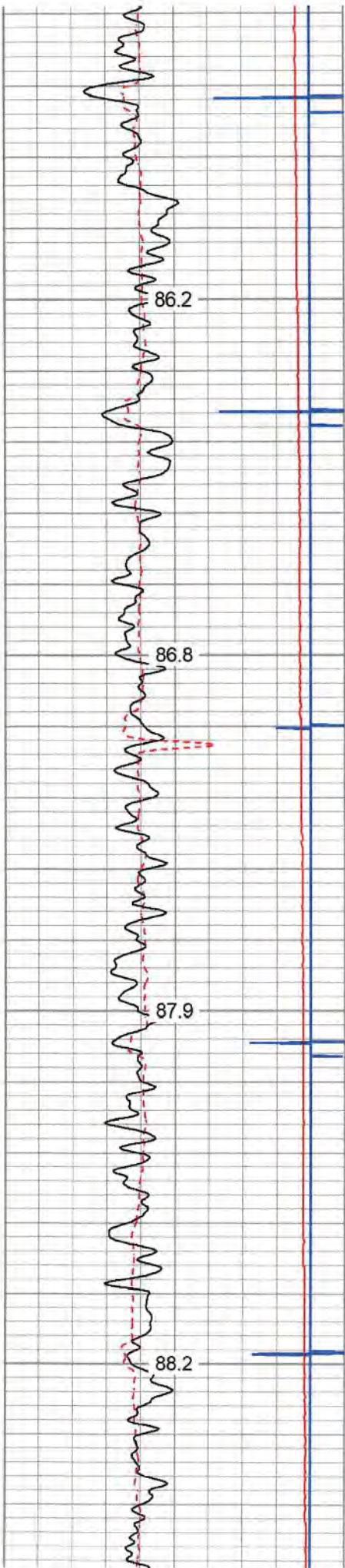
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3050



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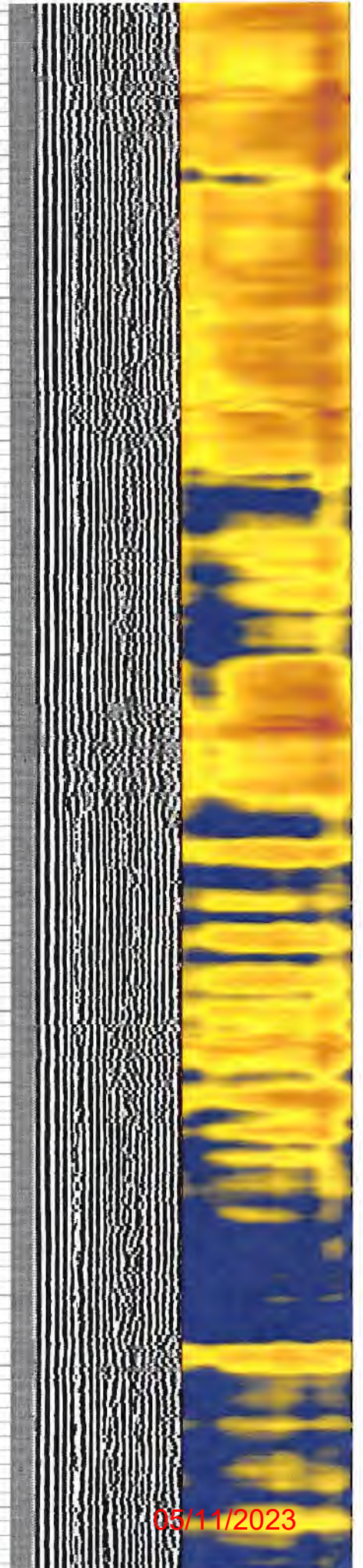
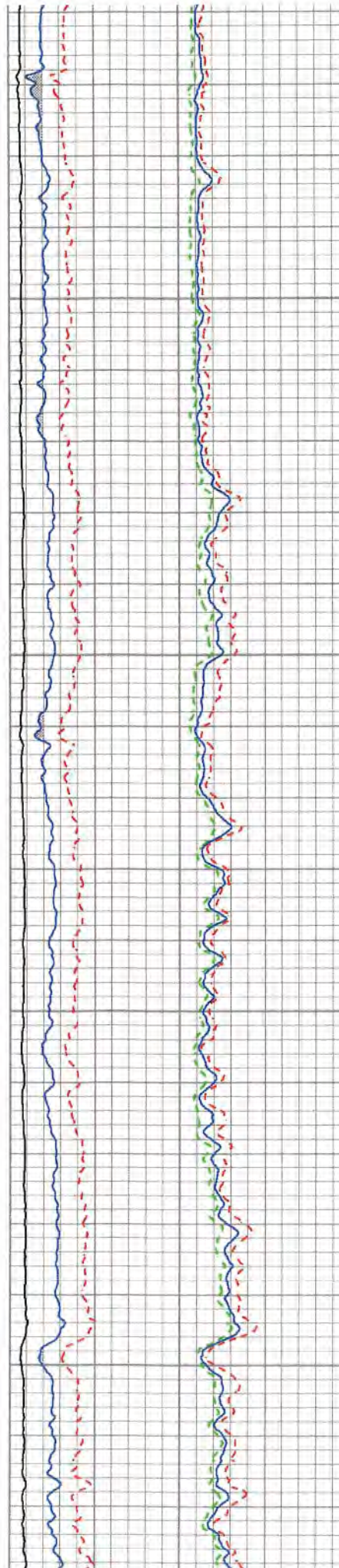


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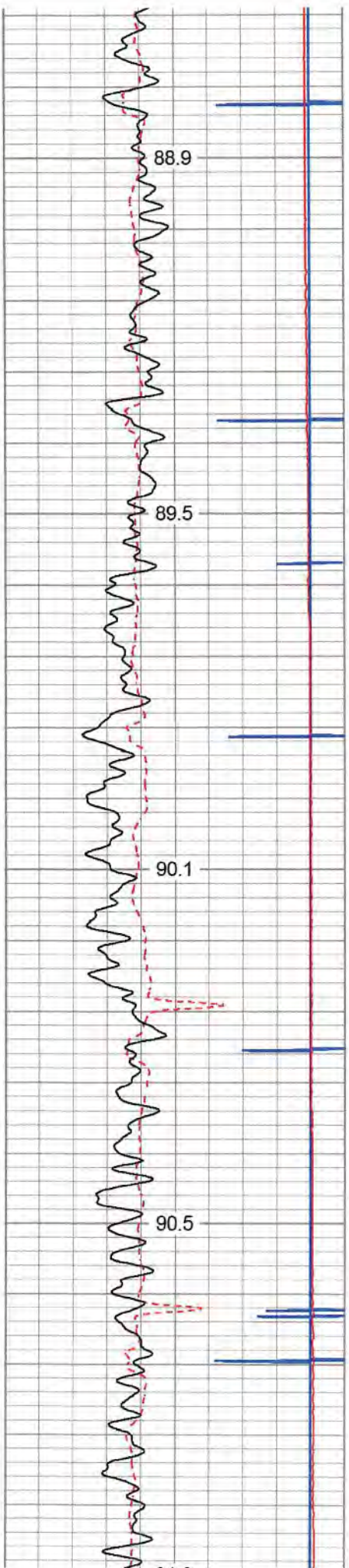
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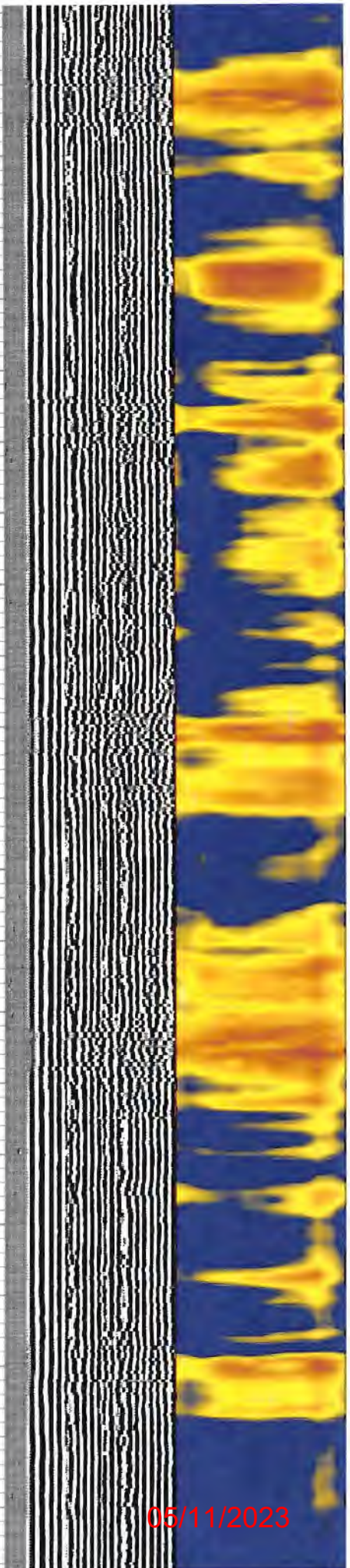
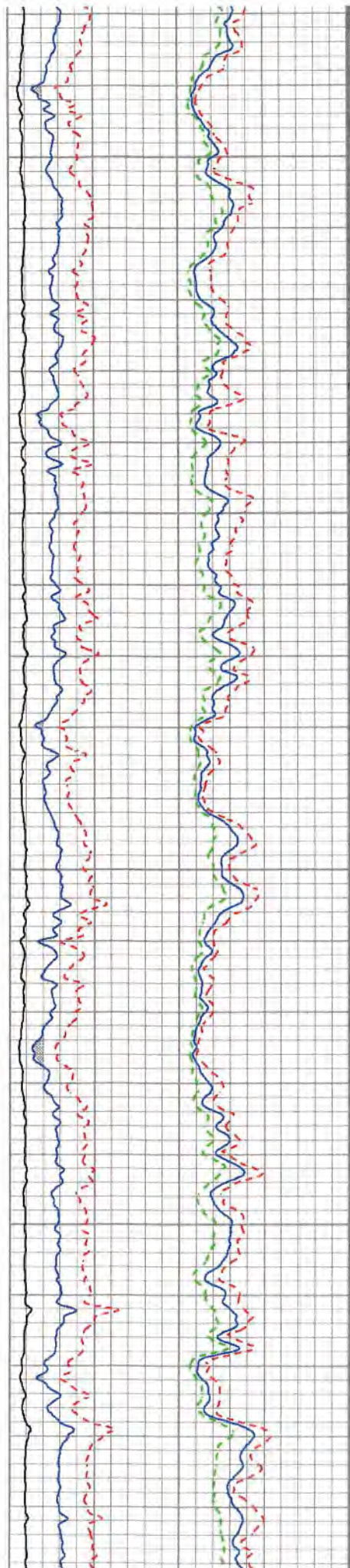


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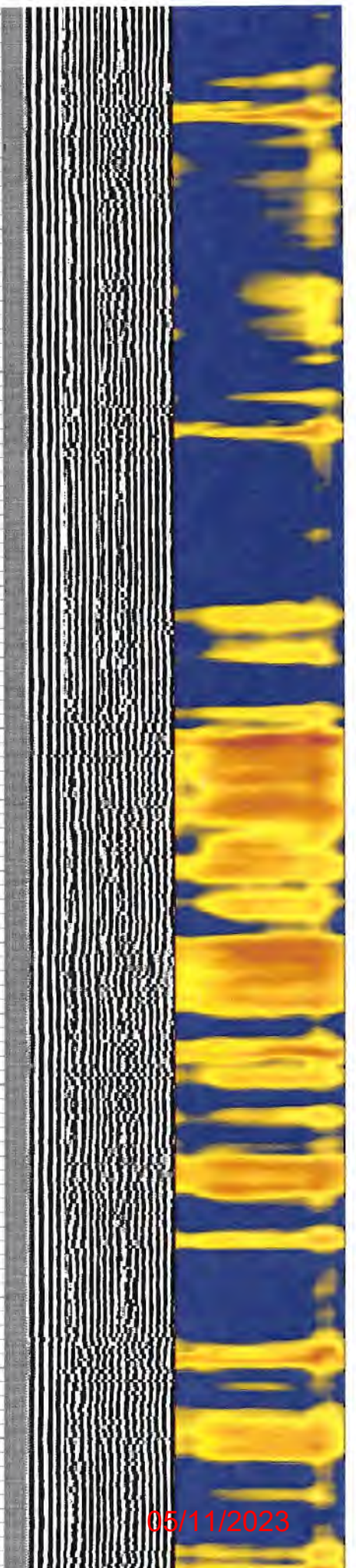
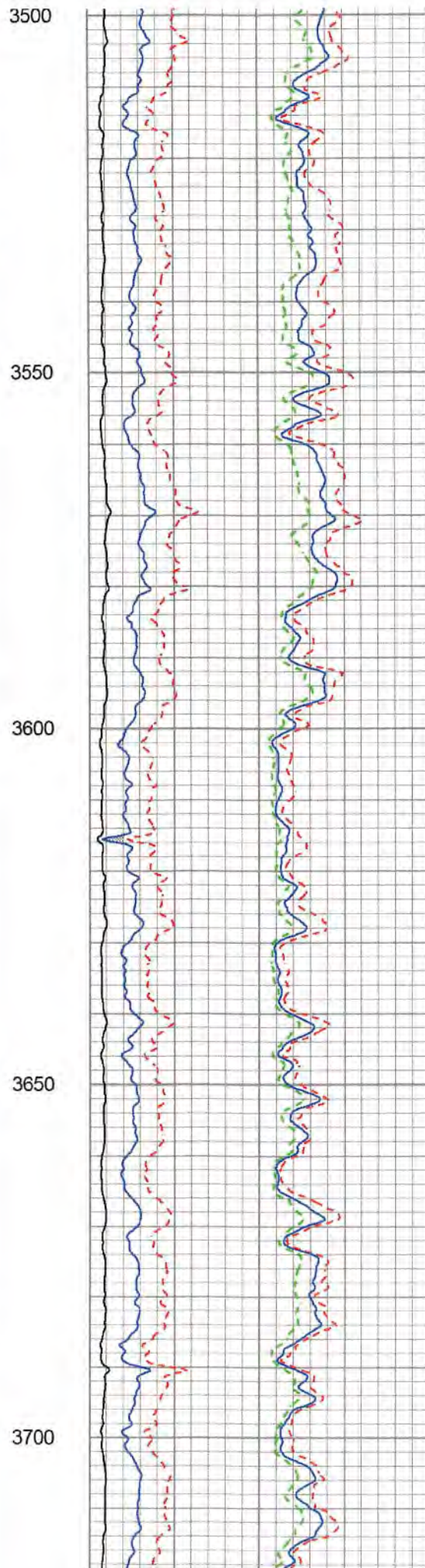
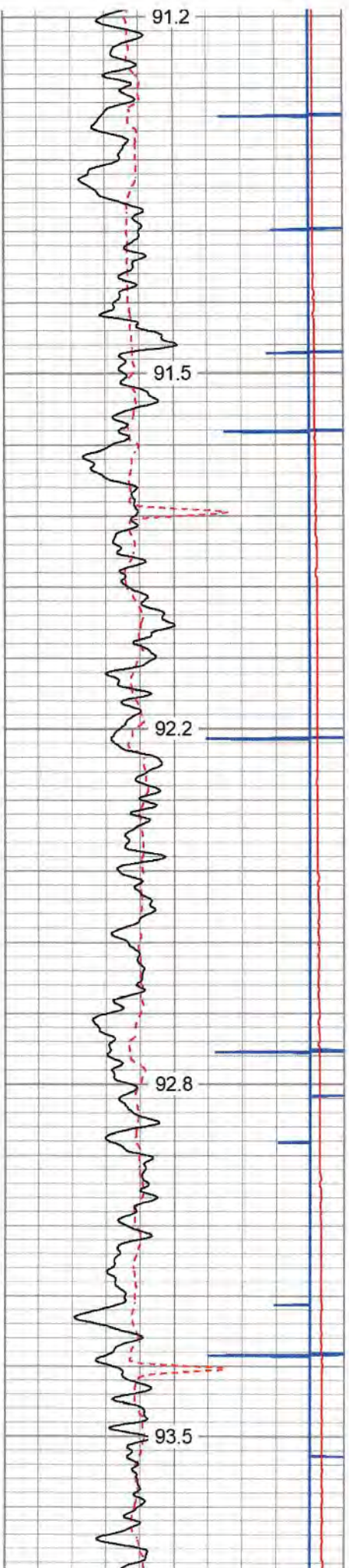
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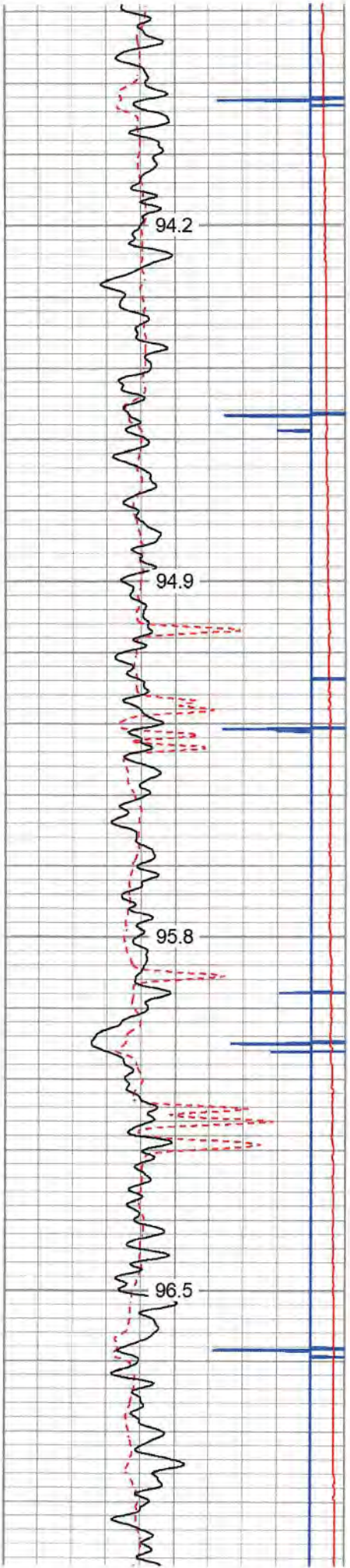
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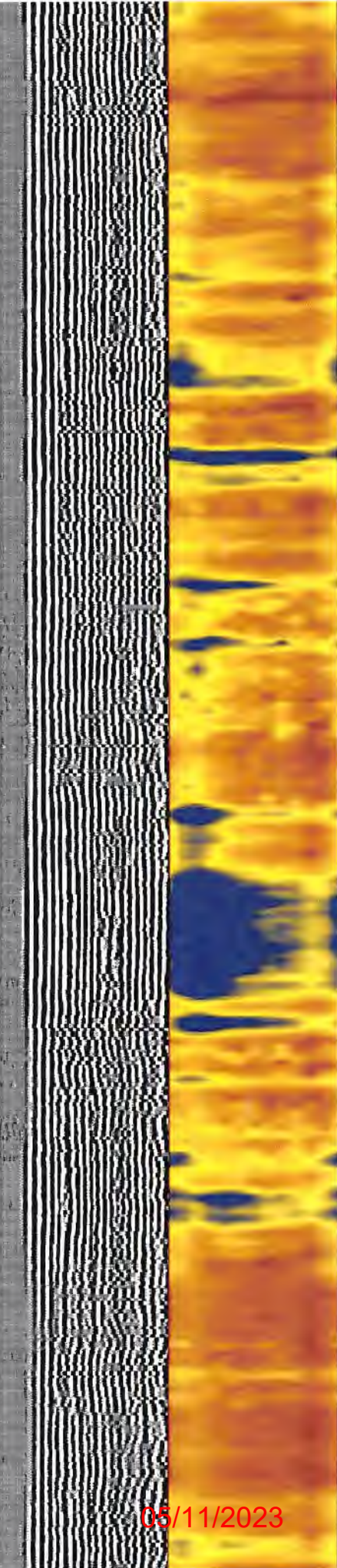
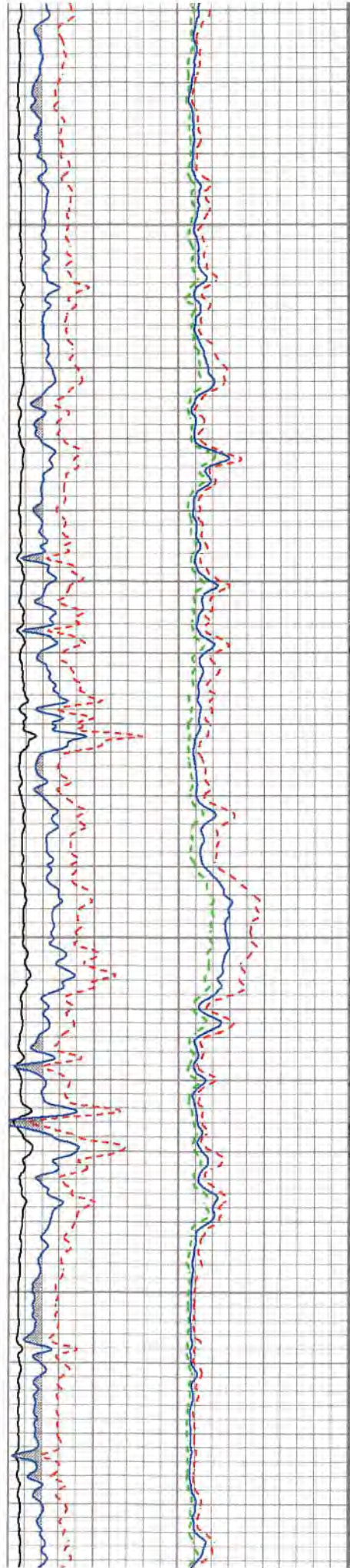


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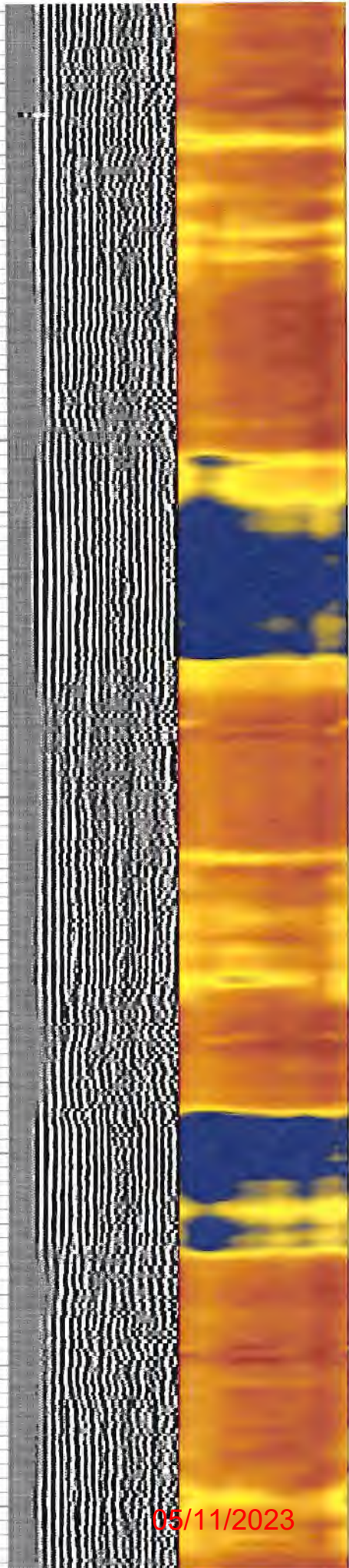
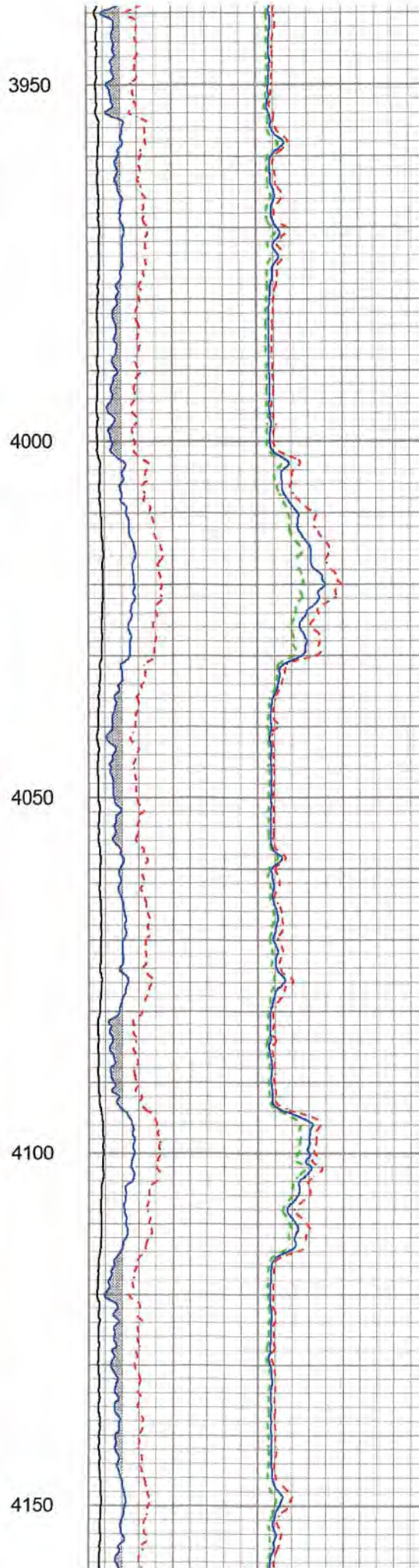
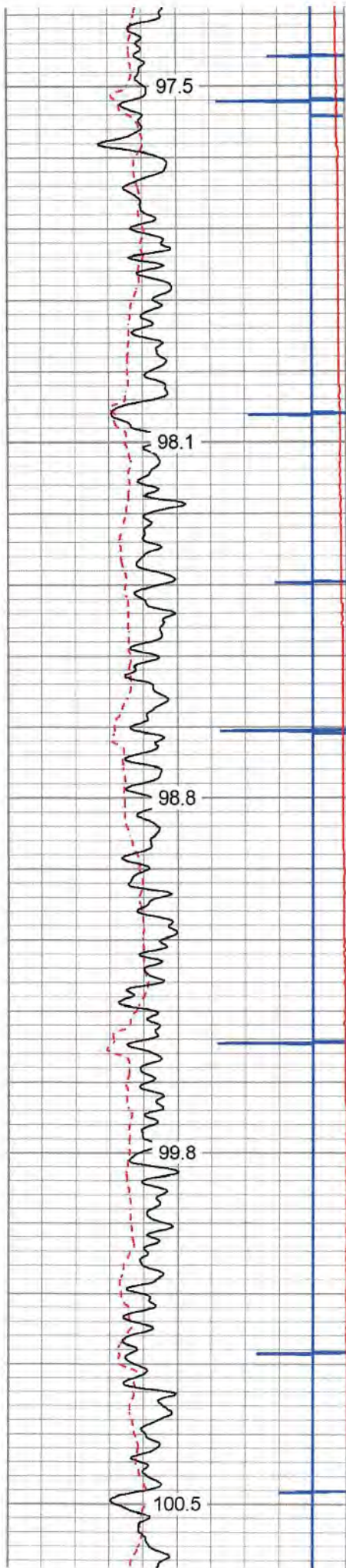
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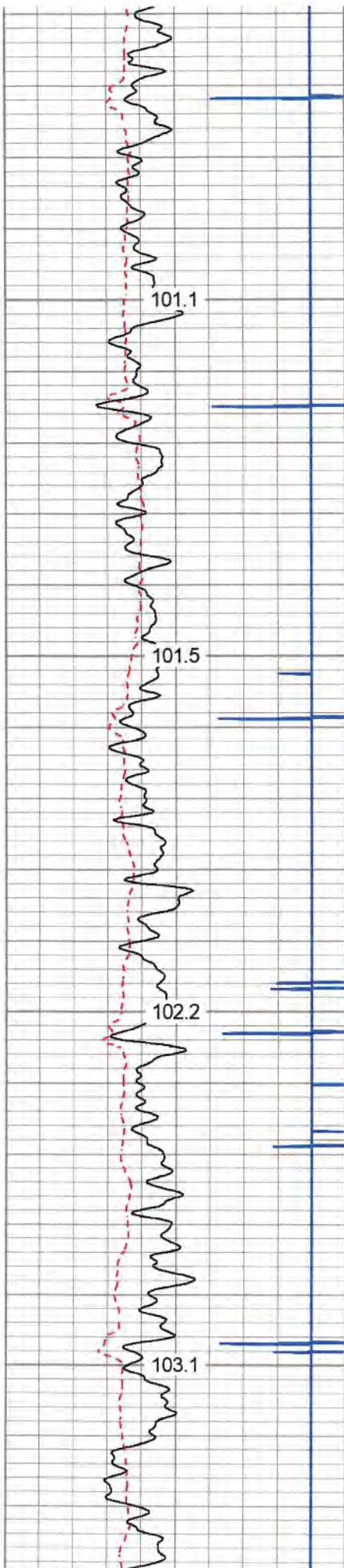
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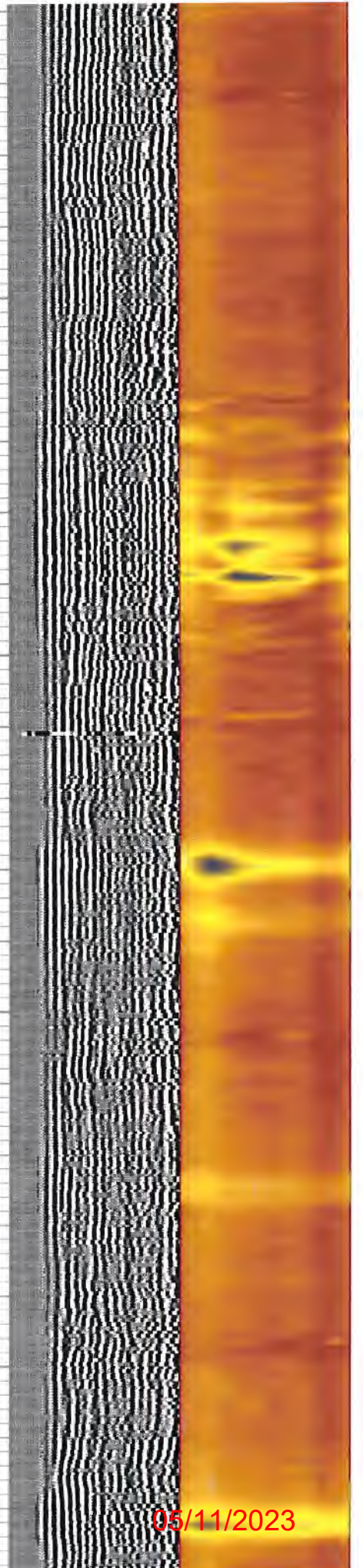
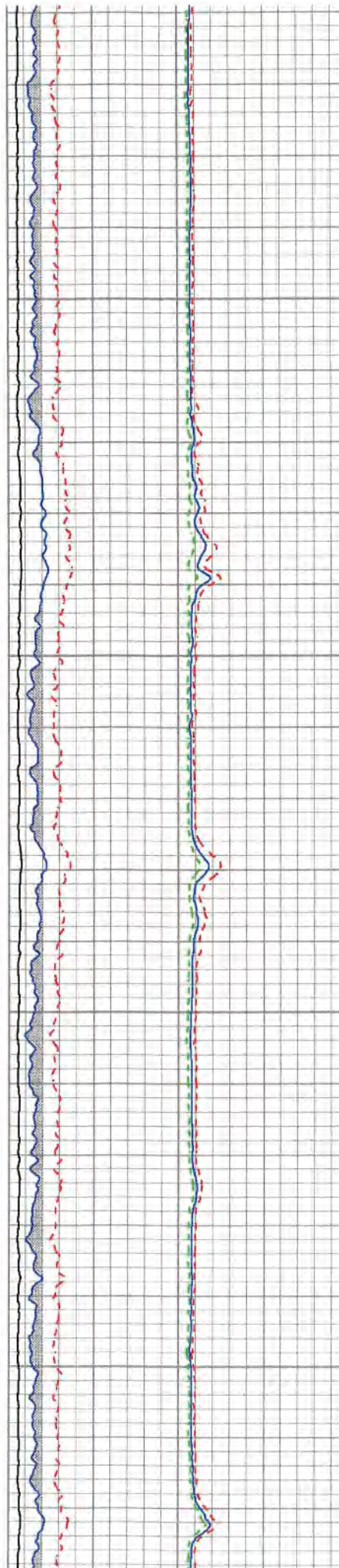
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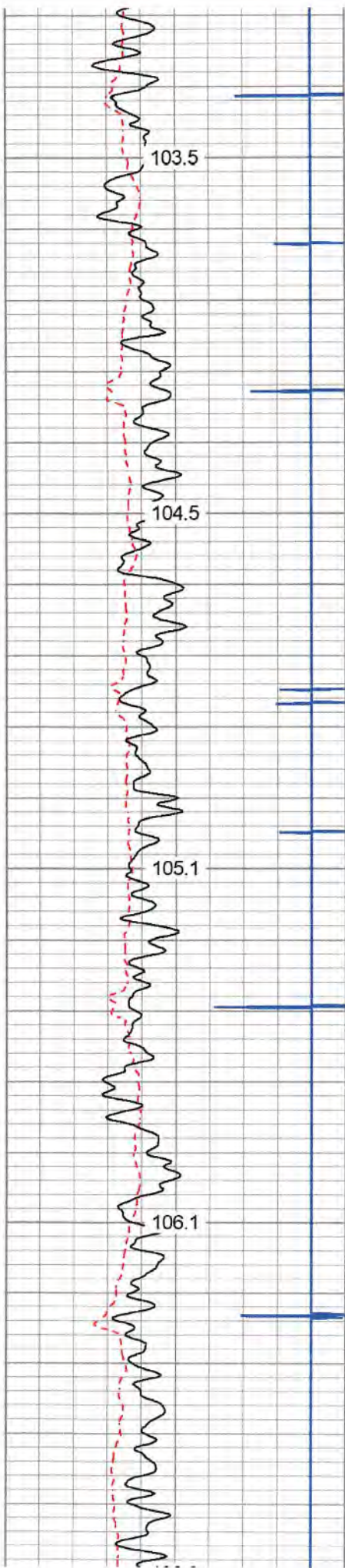
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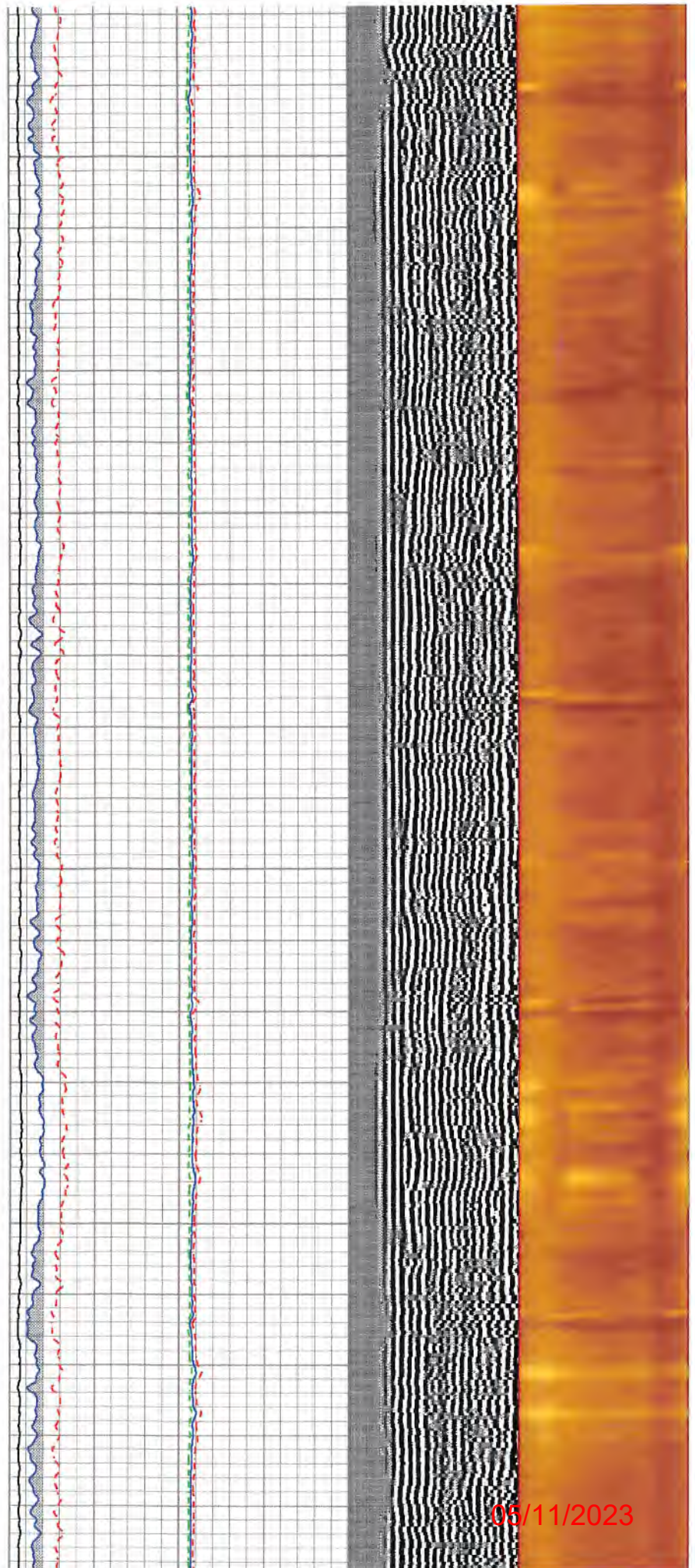


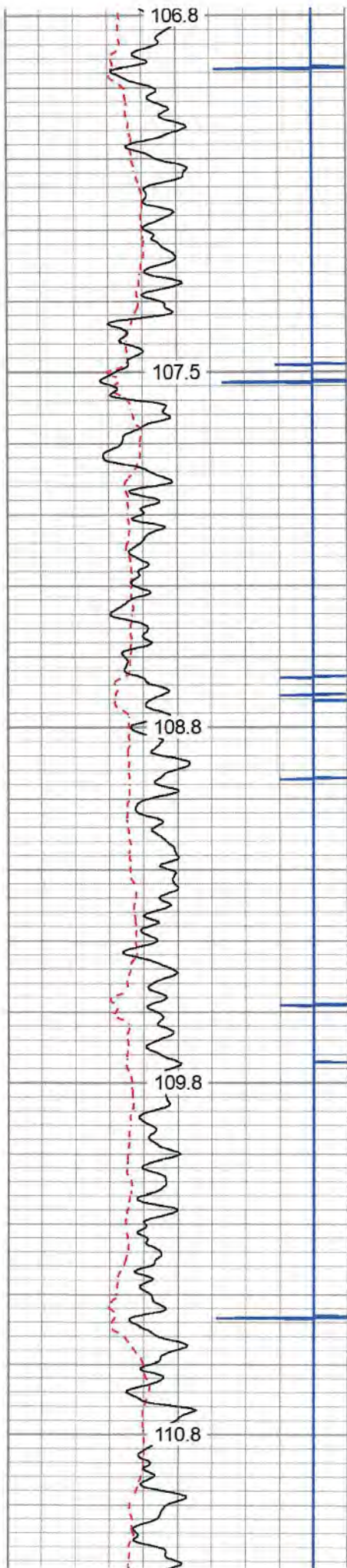
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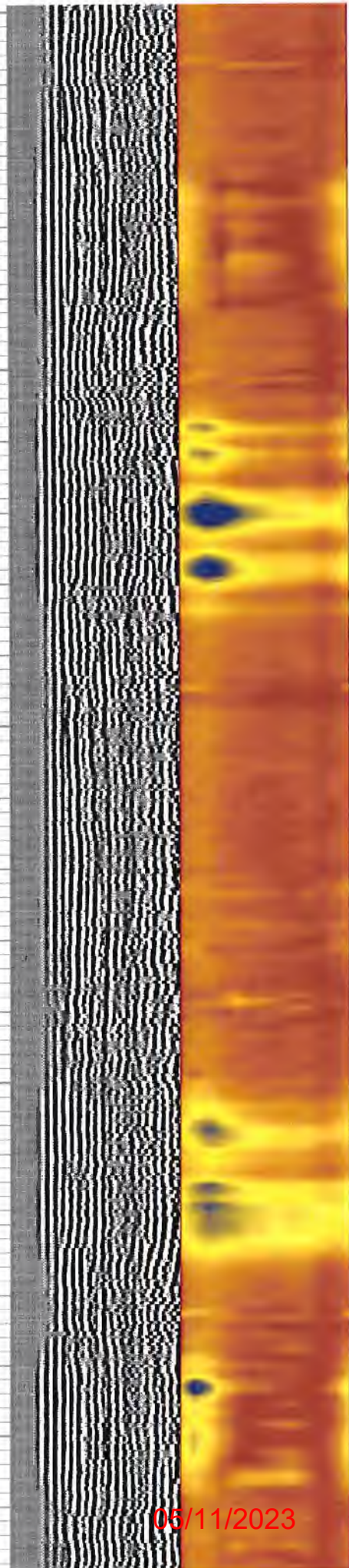
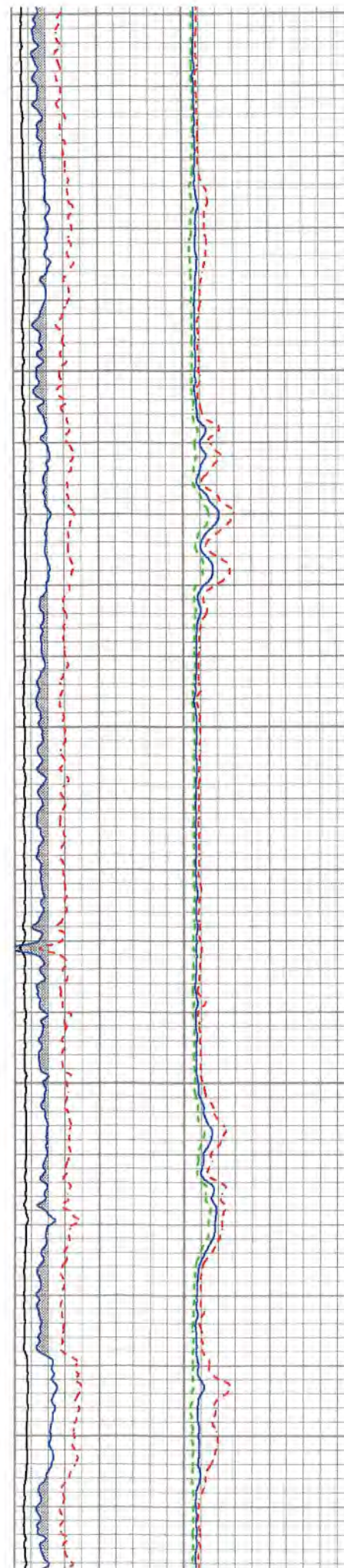
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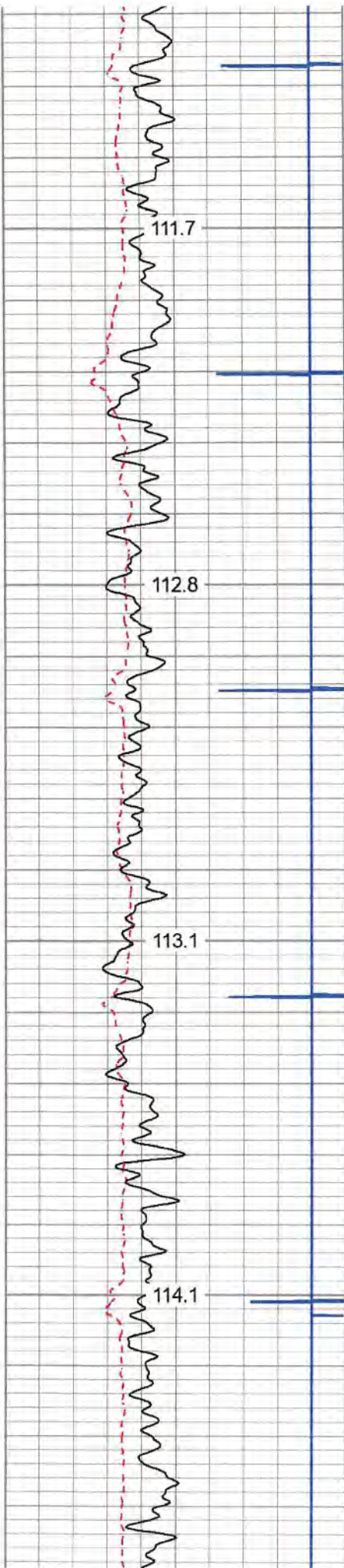




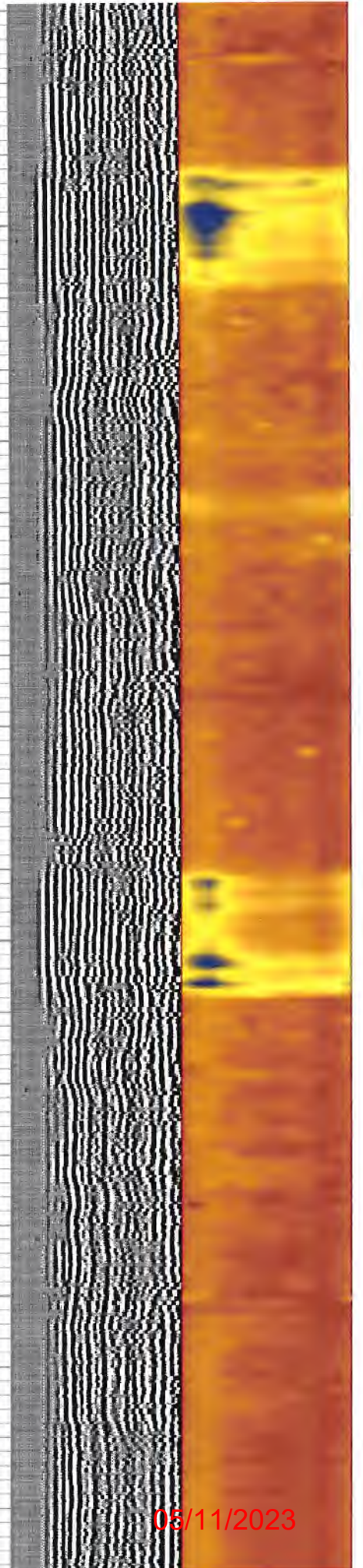
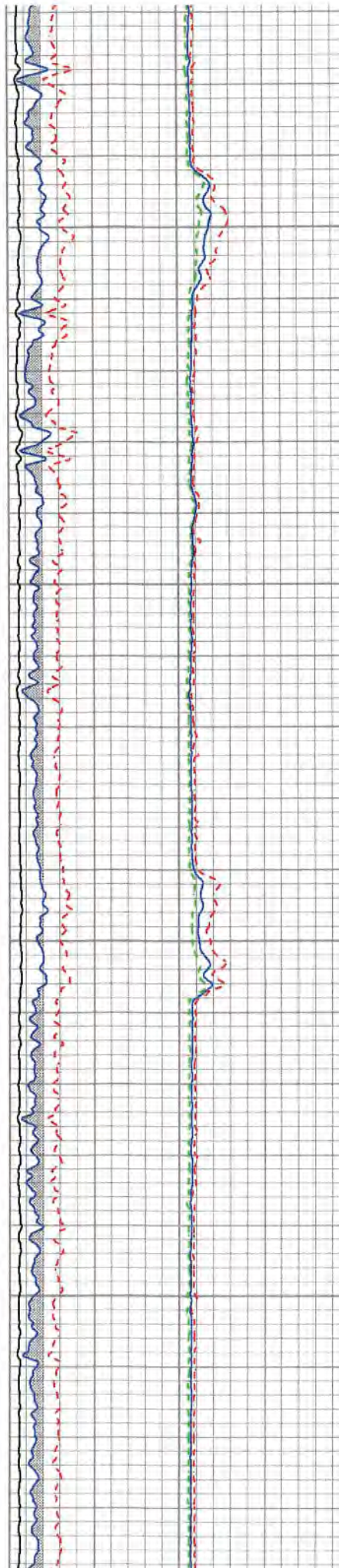
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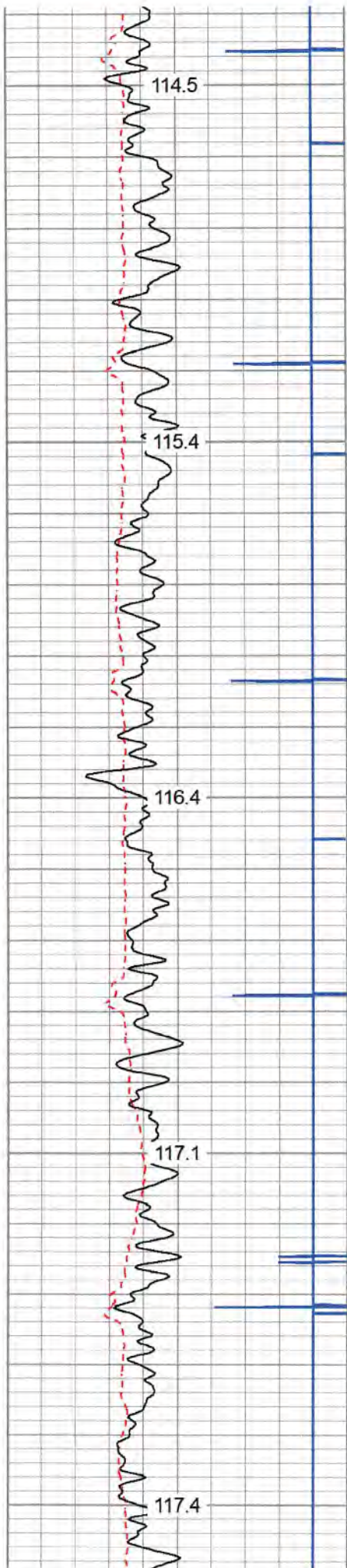


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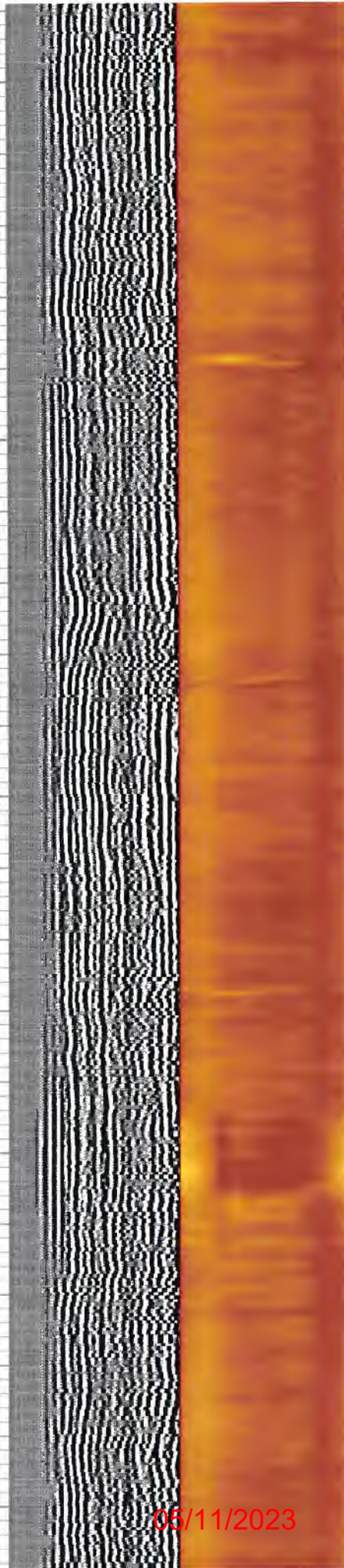
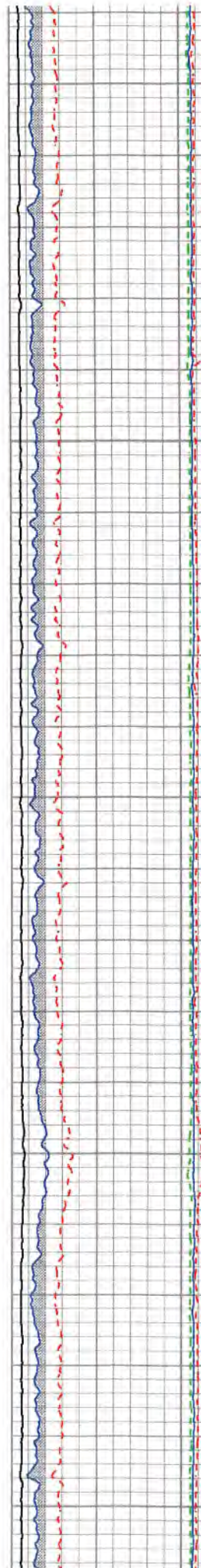
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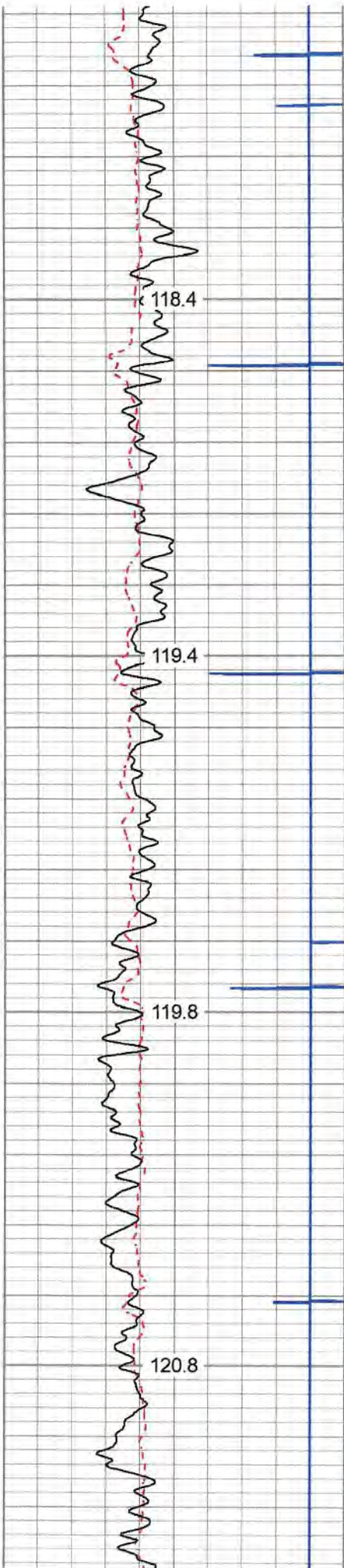
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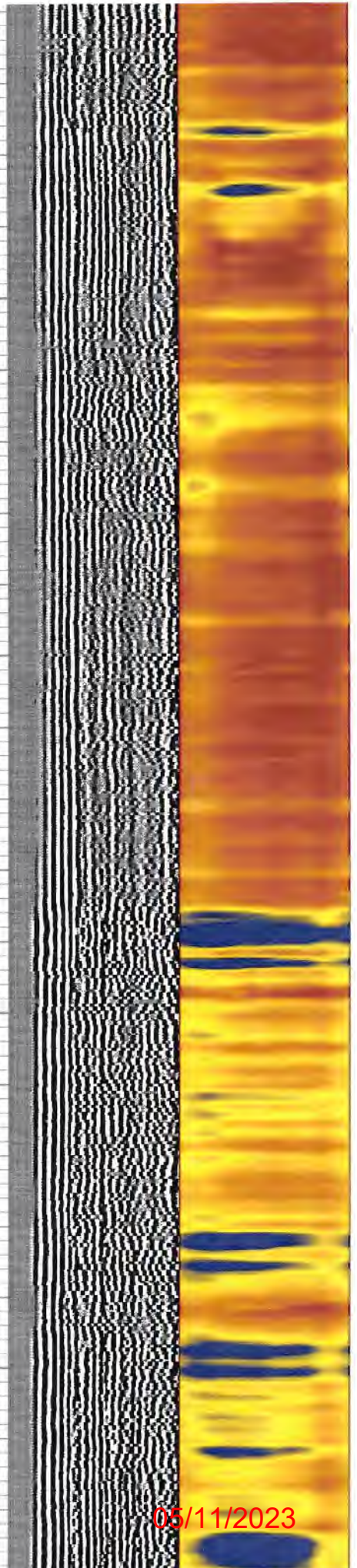
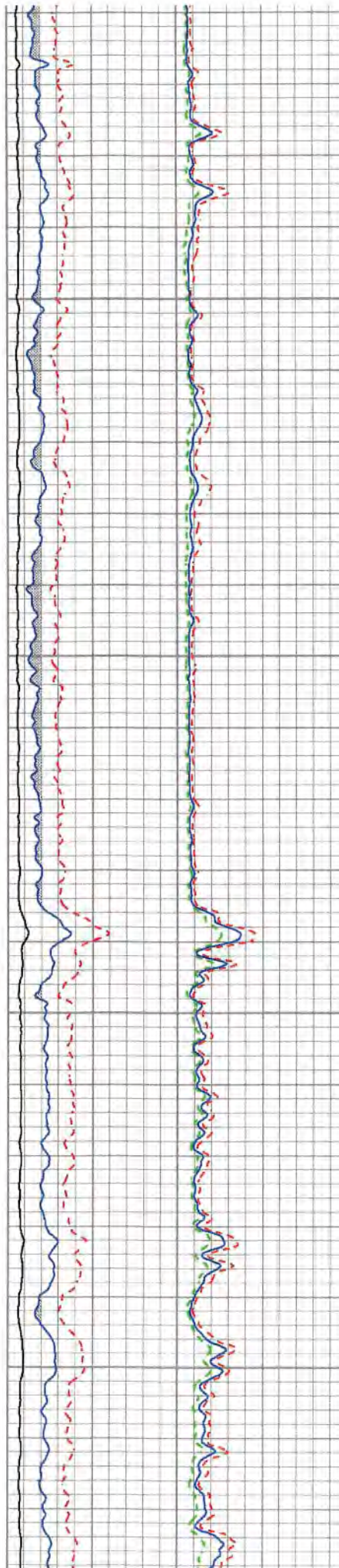


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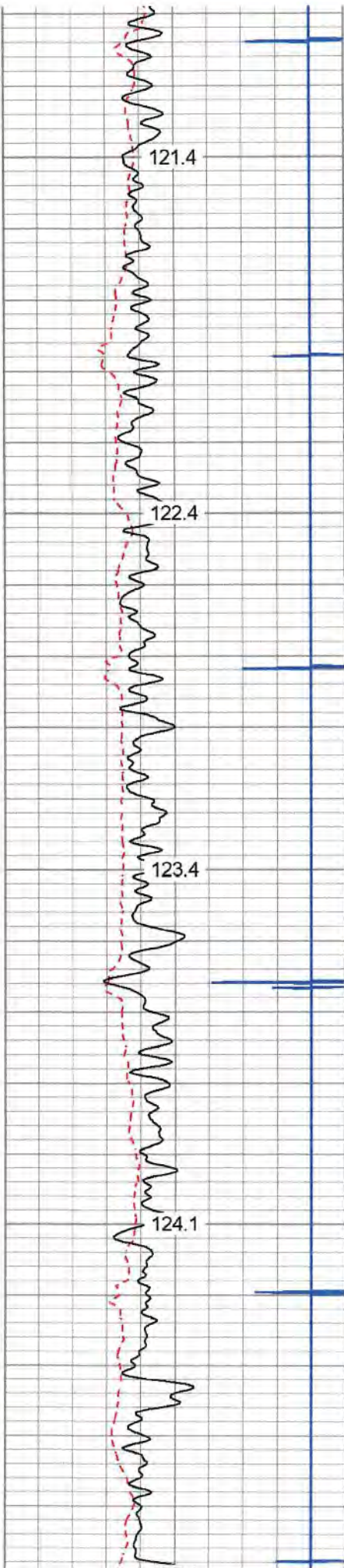
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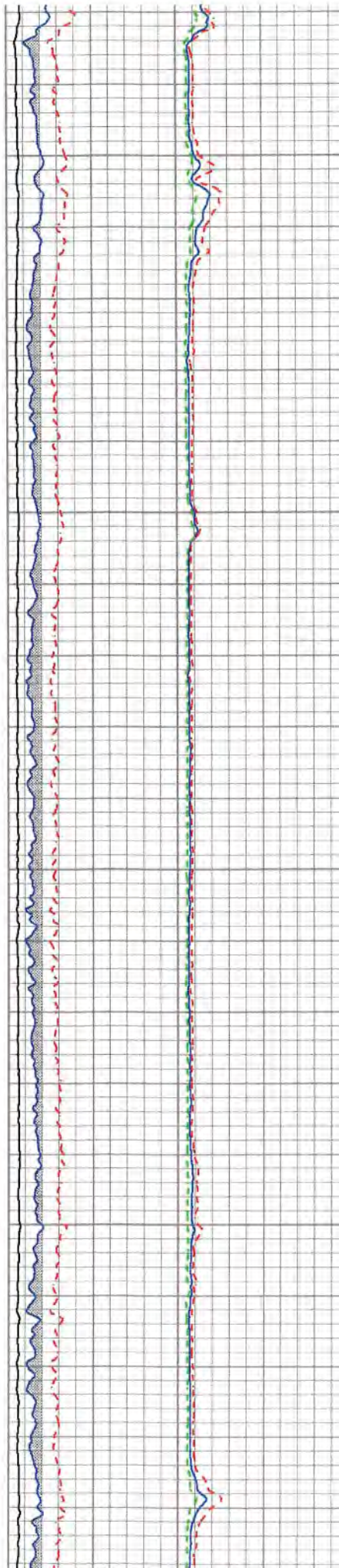


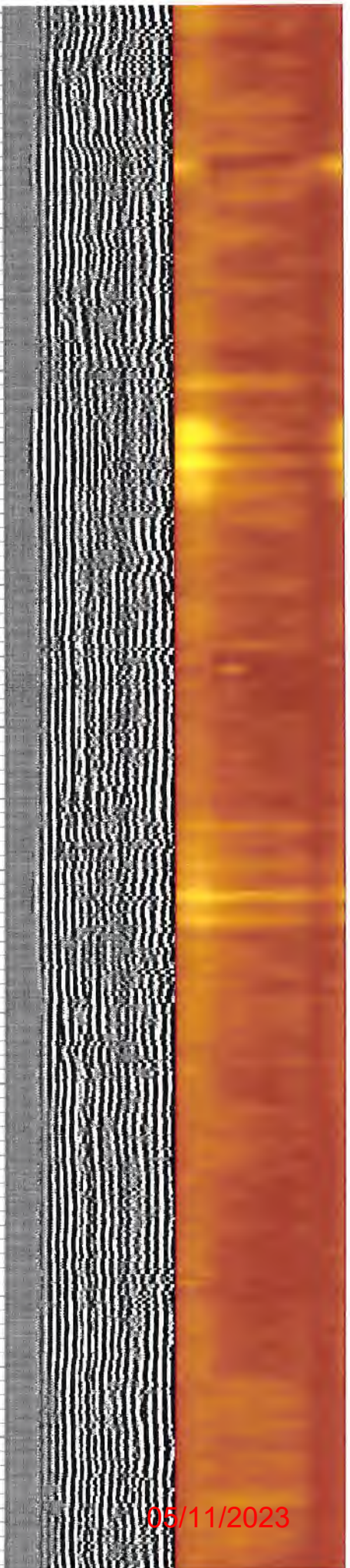
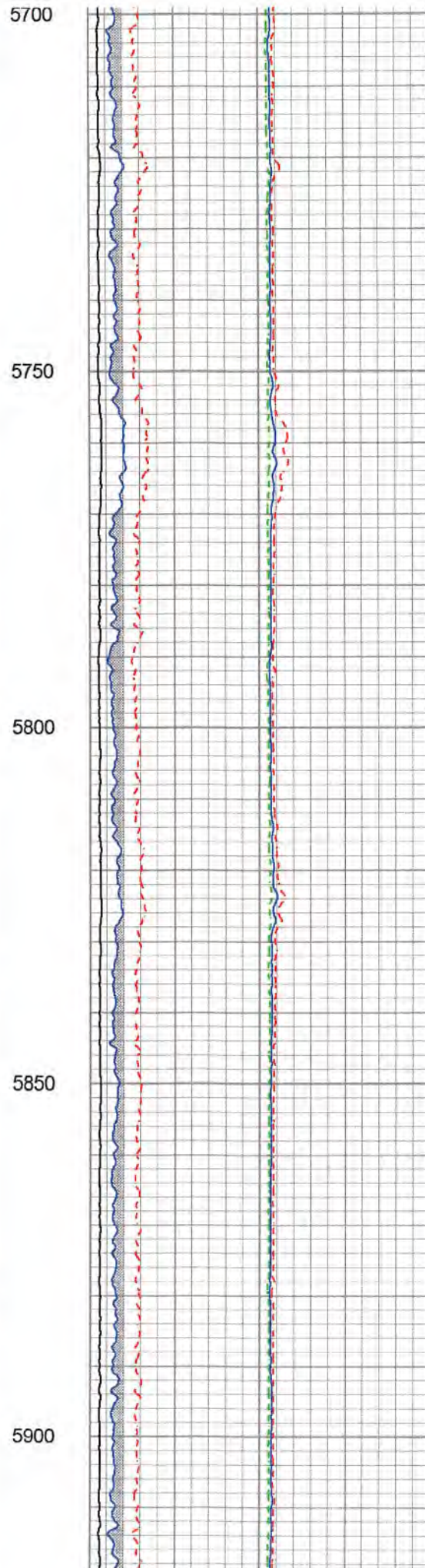
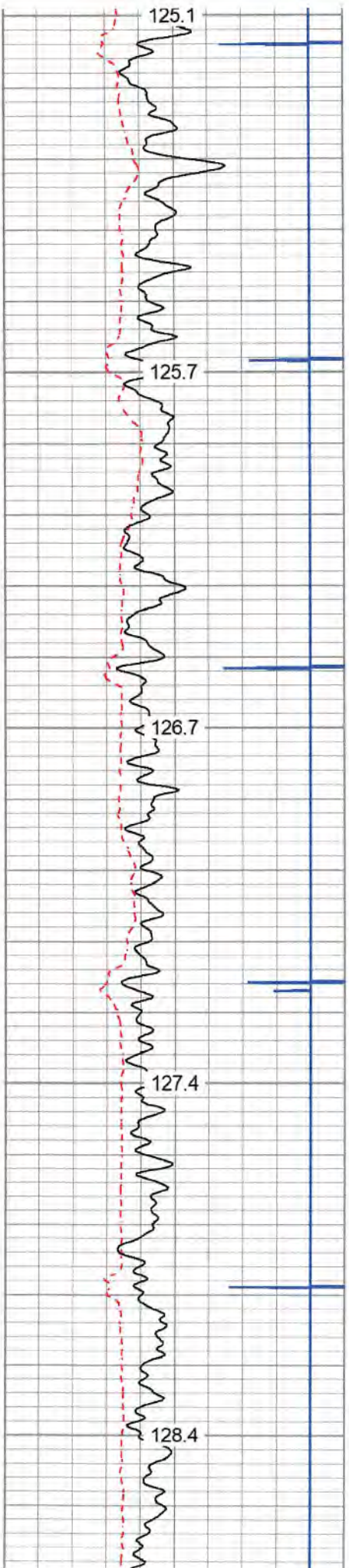
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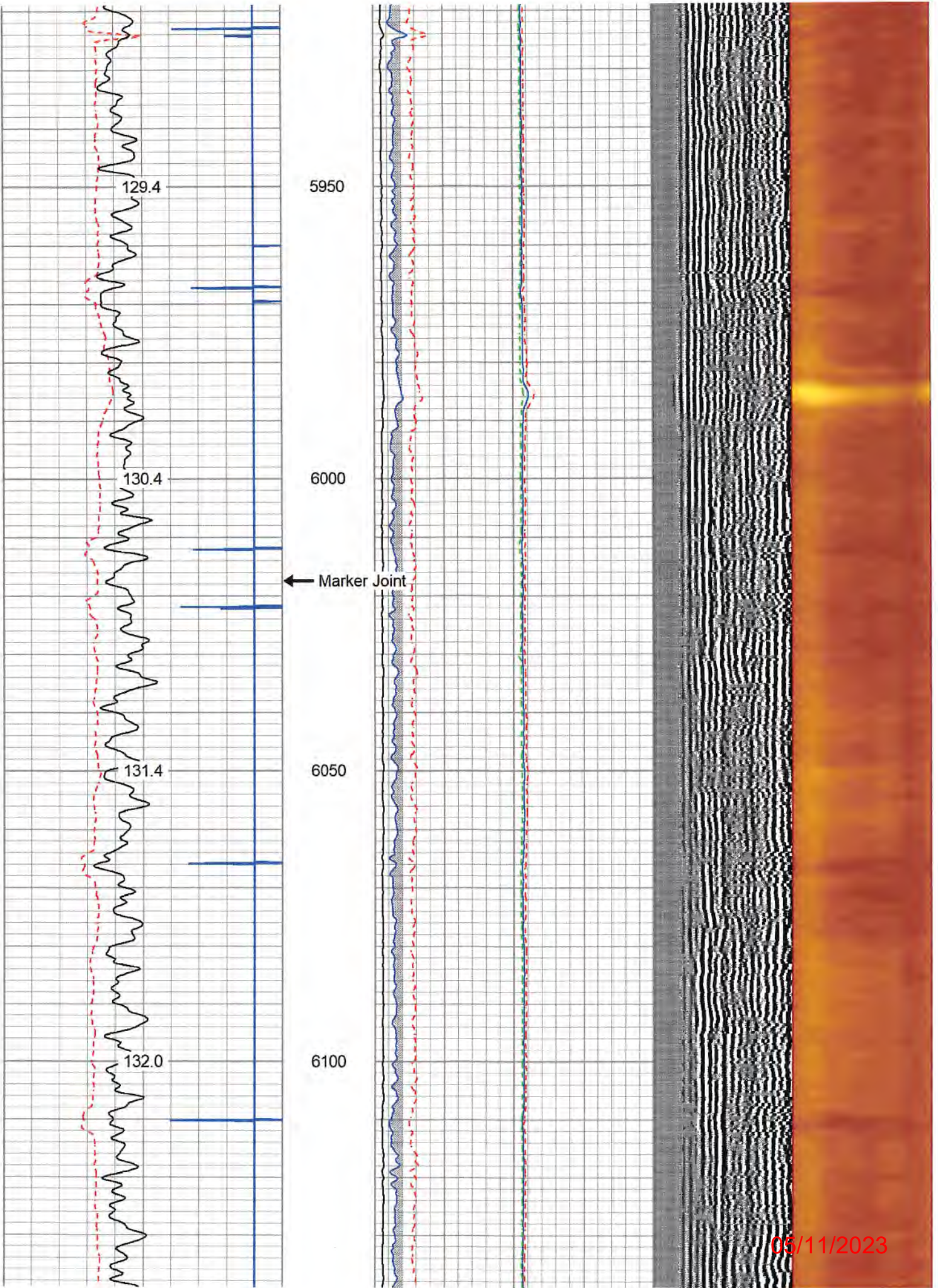
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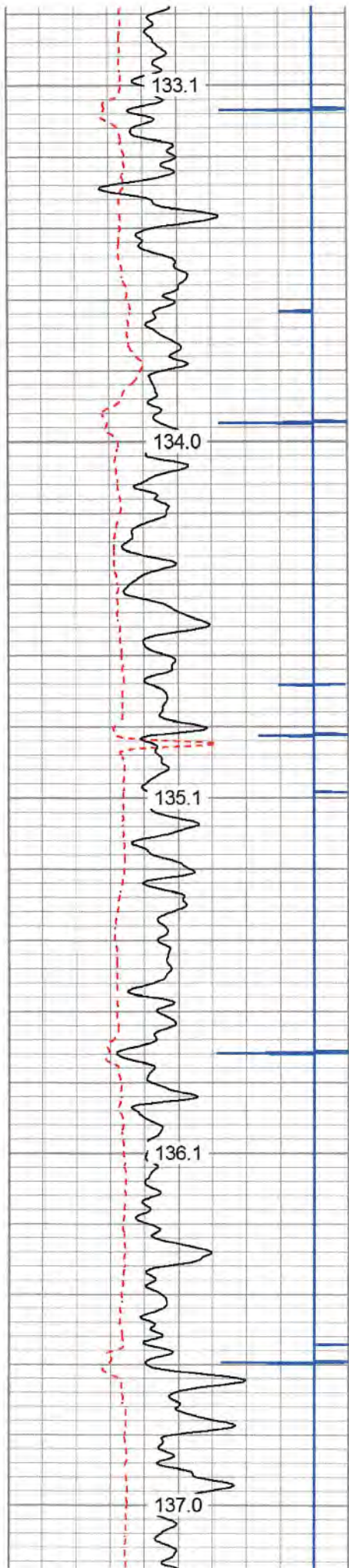
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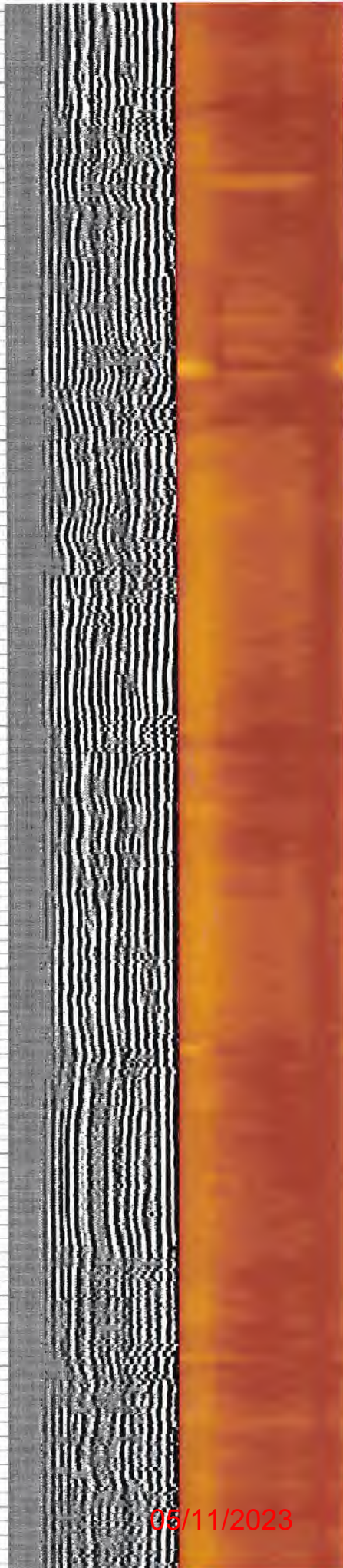
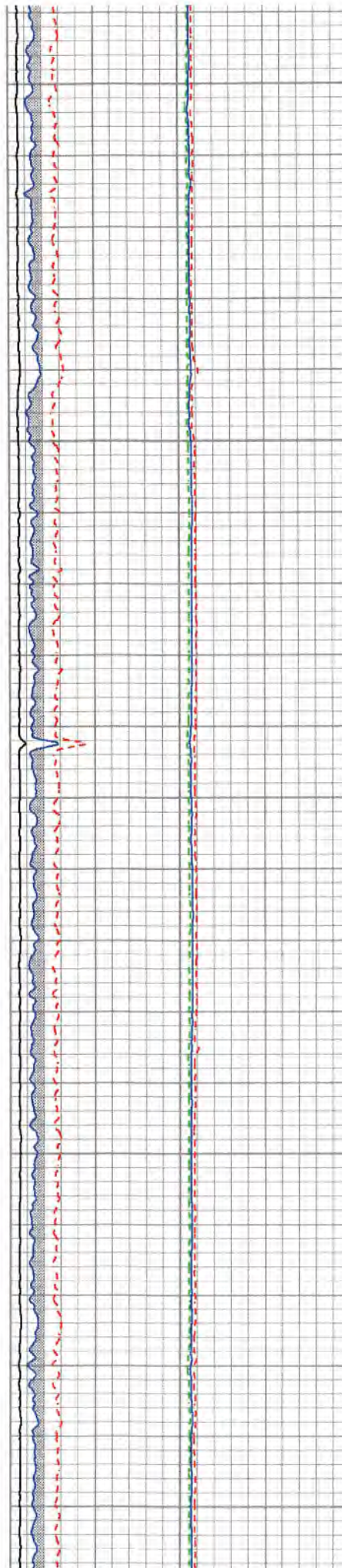
6150

6200

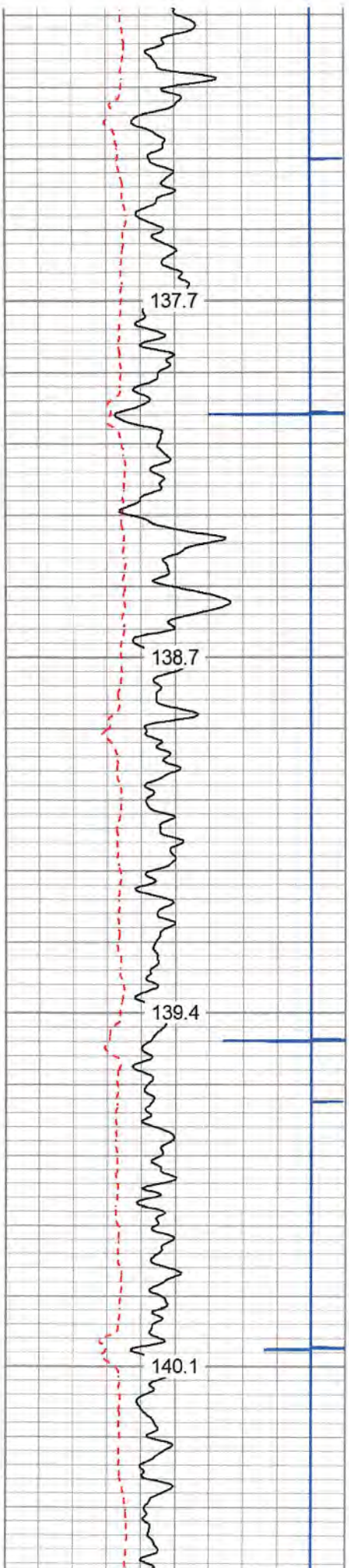
6250

6300

6350



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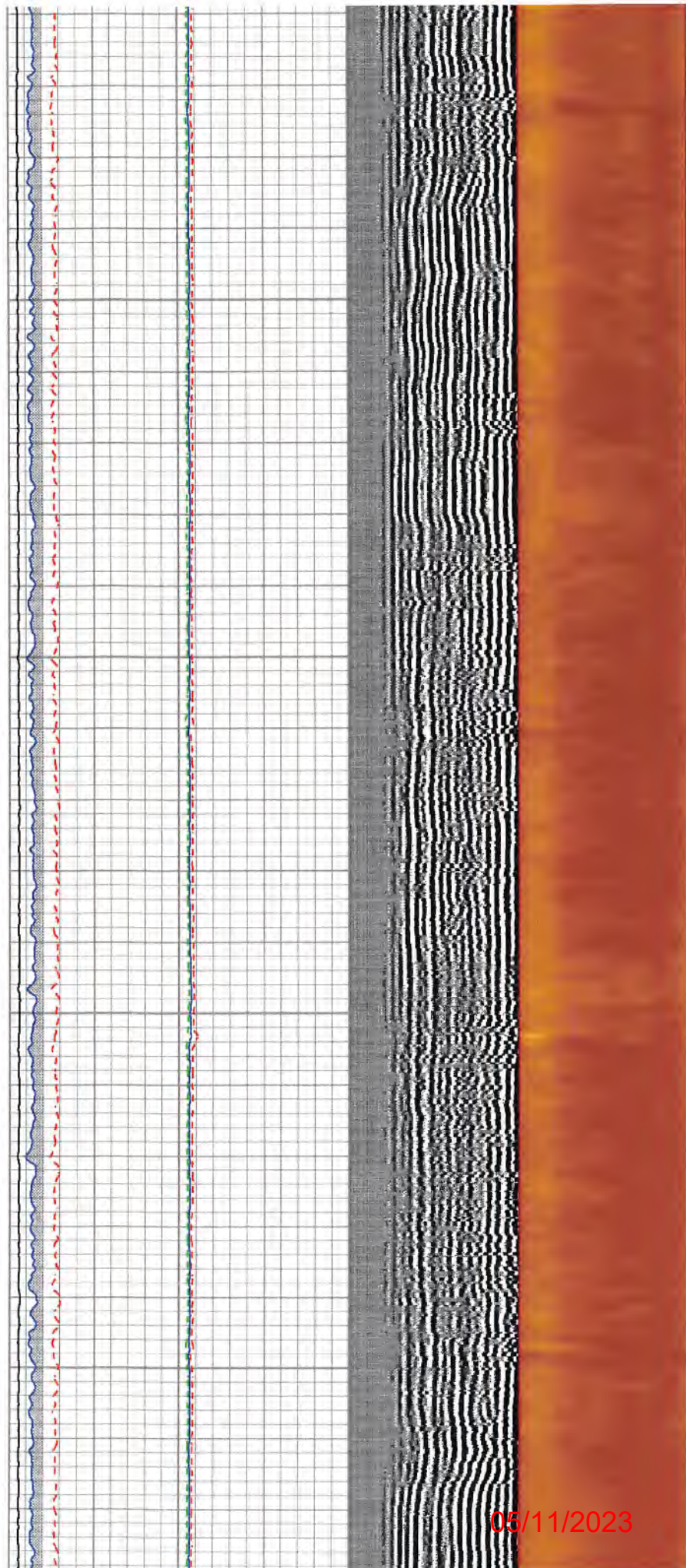


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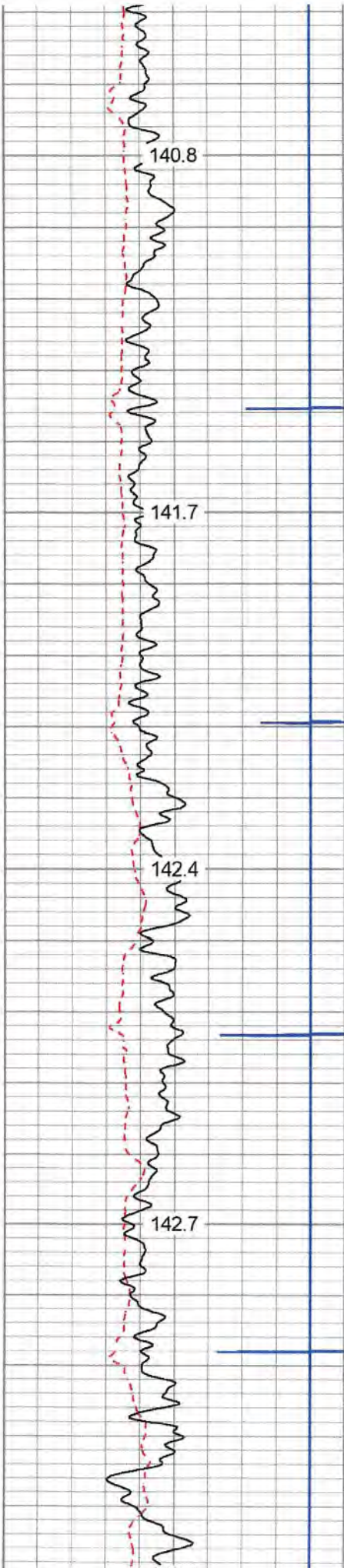
6450

6500

6550



05/11/2023

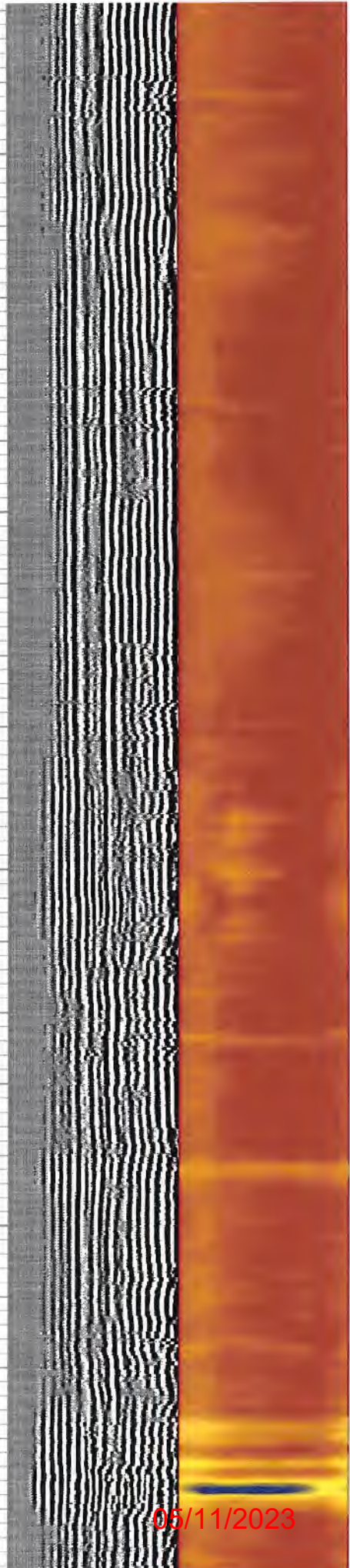
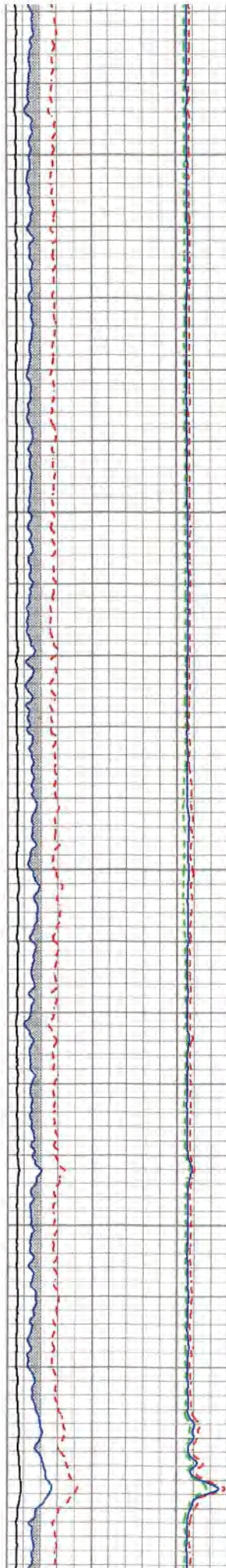


6600

6650

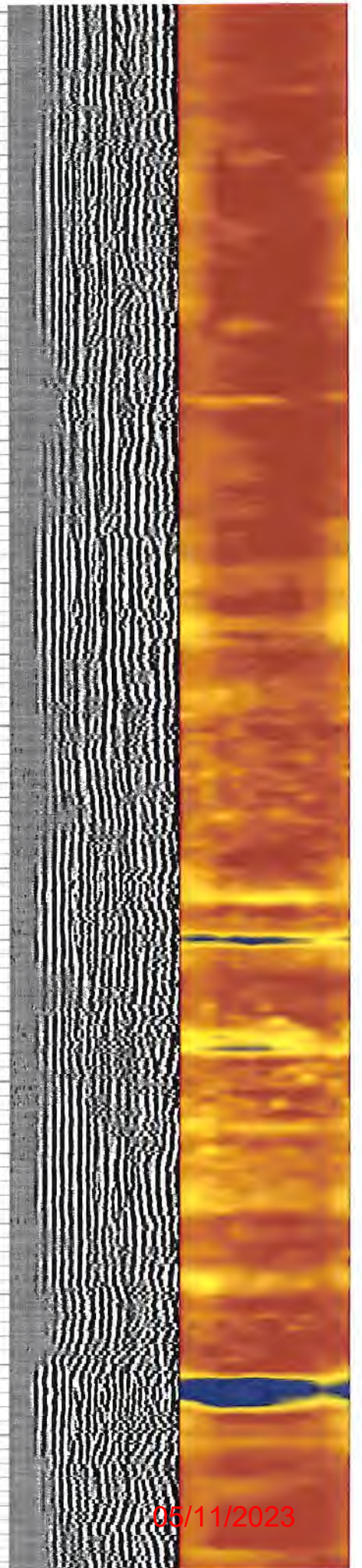
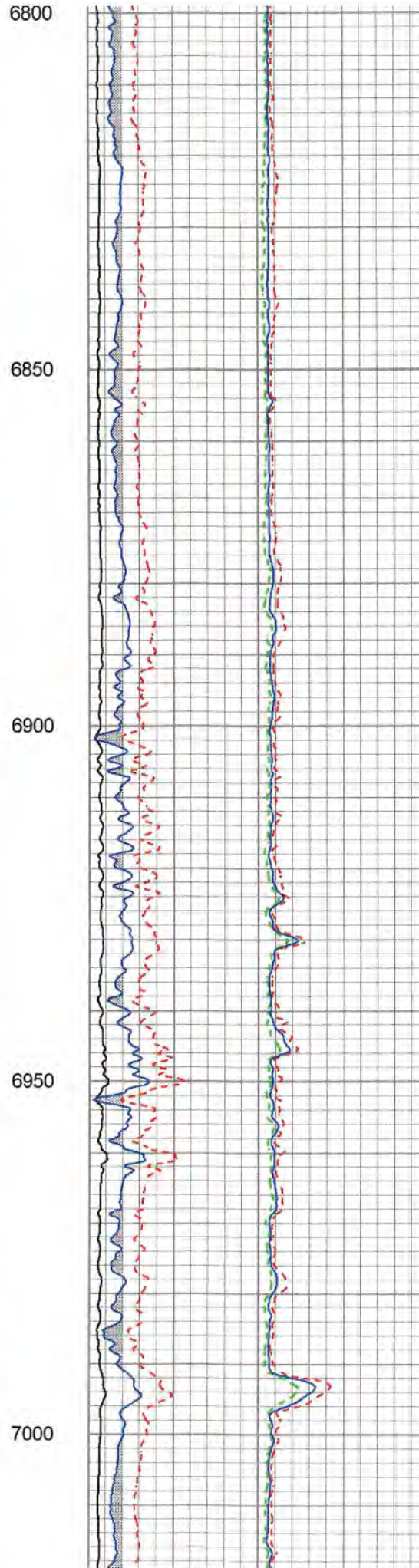
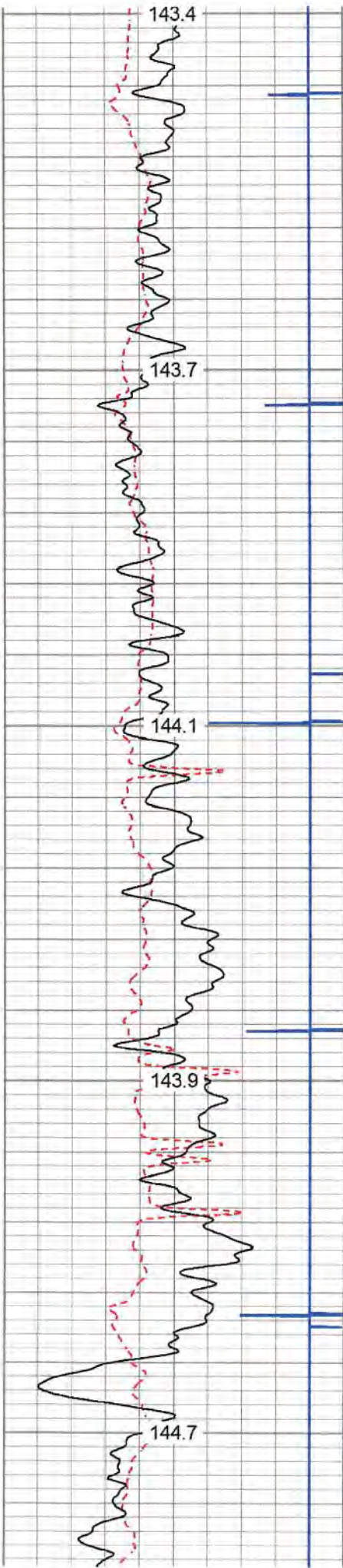
6700

6750

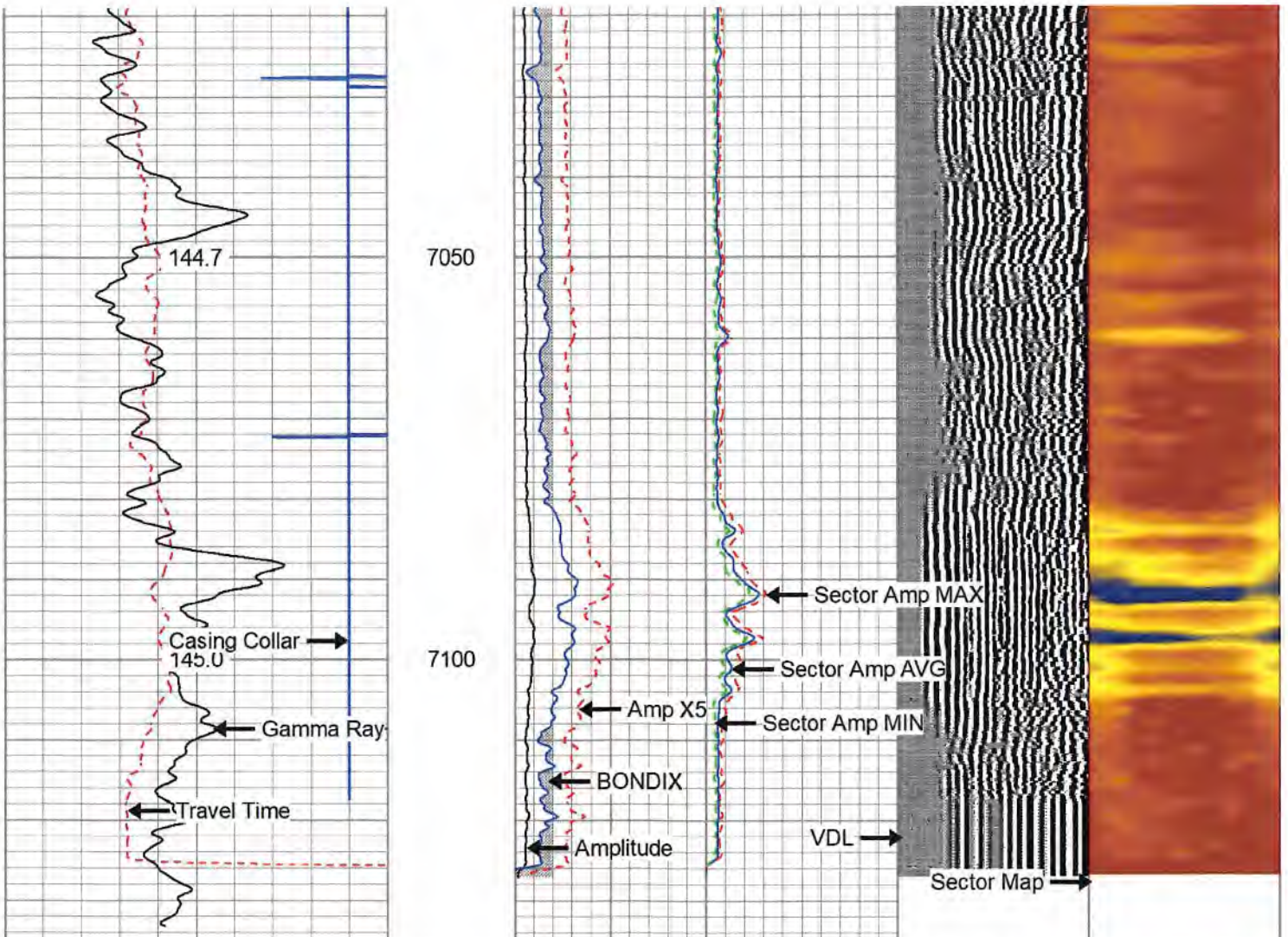


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280	Travel Time (usec)	180	Amplitude	Sector Amp AVG	VDL	1	Sector Map	12
9	Casing Collar	-1	0 (mV)	Sector Amp MAX	200 (usec)	1200		
0	Gamma Ray (GAPI)	180	Amp X5	Sector Amp MIN				
0	TEMP (degF)	100	0 (mV)	0				
180	GR (GAPI)	360	1 BONDIX	0				
	TEMP (degF)							

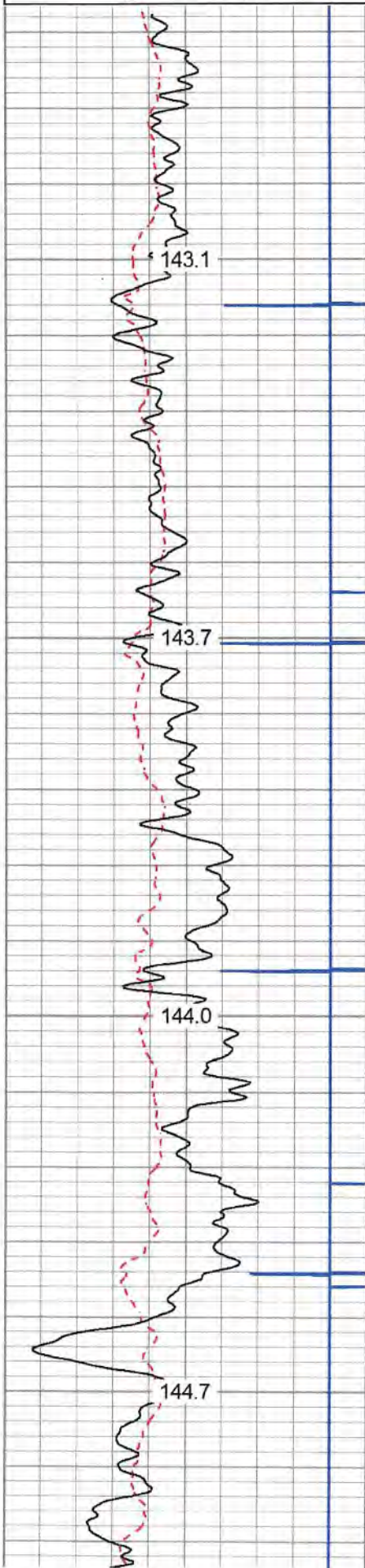
# REPEAT PASS

Database File      lindsey2h.db  
 Dataset Pathname    pass5.1  
 Presentation Format   antero  
 Dataset Creation    Thu May 16 11:01:55 2019  
 Charted by          Depth in Feet scaled 1:240

280	Travel Time (usec)	180	Amplitude	Sector Amp AVG	VDL	1	Sector Map	12
9	Casing Collar	-1	0 (mV)	Sector Amp MAX	200 (usec)	1200		
0	Gamma Ray (GAPI)	180	Amp X5	Sector Amp MIN				
0	TEMP (degF)	100	0 (mV)	0				
180	GR (GAPI)	360	1 BONDIX	0				

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TEMP  
(degF)

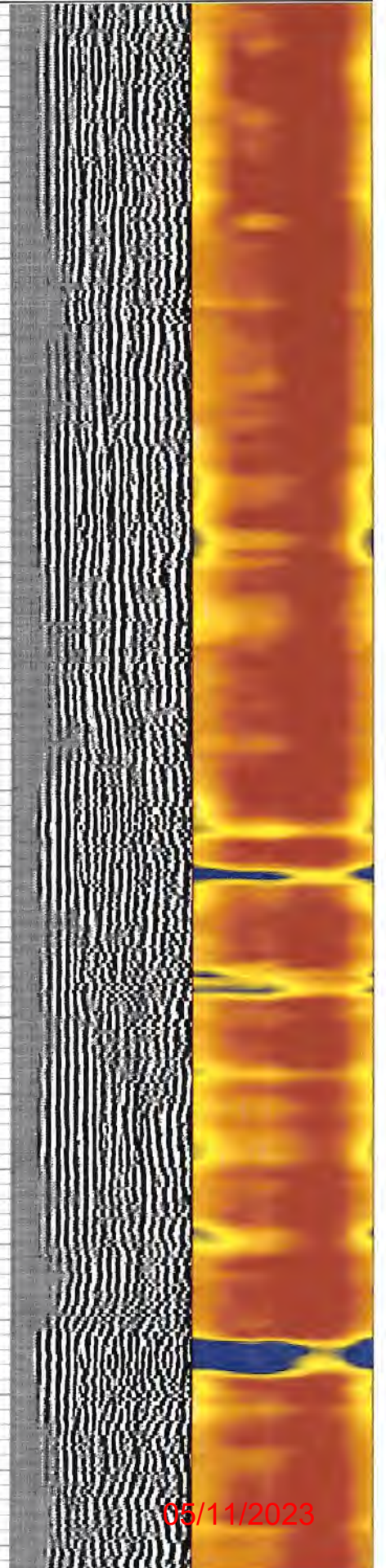
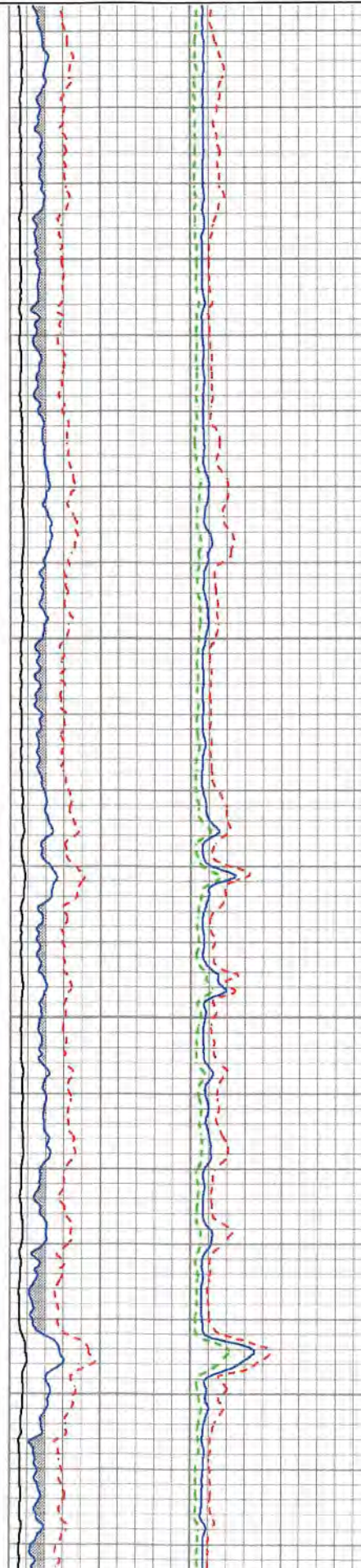


6850

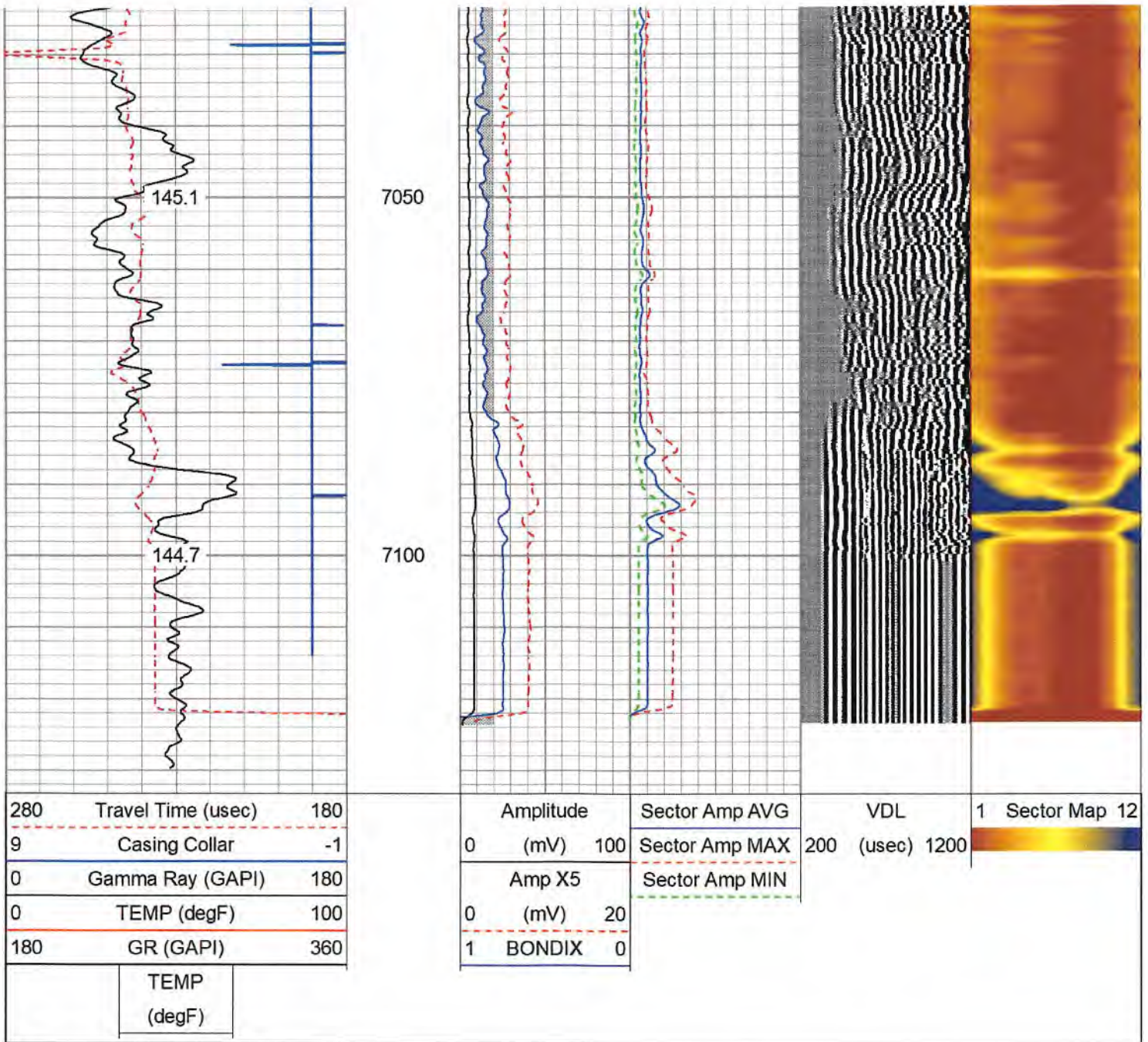
6900

6950

7000



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Calibration Report

Database File lindsey2h.db  
 Dataset Pathname pass6.3  
 Dataset Creation Thu May 16 10:59:05 2019

Gamma Ray Calibration Report

Serial Number: 0111  
 Tool Model: Tek-Co 2 3/4  
 Performed: Thu Mar 28 13:44:53 2019

Calibrator Value: 1.0 GAPI

Background Reading: 0.0 cps  
 Calibrator Reading: 1.0 cps

Sensitivity: 0.5000 GAPI/cps

Segmented Cement Bond Log Calibration Report

05/11/2023

Serial Number: T12\_01

Tool Model: Tek12  
 Calibration Casing Diameter: 5.500 in  
 Calibration Depth: 249.225 ft

Master Calibration, performed (Derived):

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	-0.003	0.741	3.500	71.921	91.942	1.349
CAL	0.000	0.569				
5'	-0.012	0.275	3.500	71.921	238.405	6.280
SUM						
S1	0.000	1.155	0.000	100.000	86.566	-0.001
S2	0.000	0.901	0.000	100.000	111.030	-0.001
S3	0.000	0.781	0.000	100.000	127.985	-0.001
S4	0.000	0.804	0.000	100.000	124.367	-0.001
S5	0.000	0.830	0.000	100.000	120.540	-0.001
S6	0.000	0.884	0.000	100.000	113.069	-0.001
S7	0.000	0.917	0.000	100.000	108.996	-0.001
S8	0.000	0.912	0.000	100.000	109.661	-0.001
S9	0.000	0.824	0.000	100.000	121.387	-0.001
S10	0.000	0.916	0.000	100.000	109.145	-0.001
S11	0.000	1.161	0.000	100.000	86.150	-0.001
S12	0.000	1.297	0.000	100.000	77.123	-0.001

Temperature Calibration Report

Serial Number: T12\_01  
 Tool Model: Tek12  
 Performed: Fri Oct 22 17:21:06 2010

	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: 2

Log Variables

DatabaseC:\ProgramData\Warrior\Data\lindsey2h.db  
 Dataset field/well/run1/pass6.3/\_vars\_

Top - Bottom

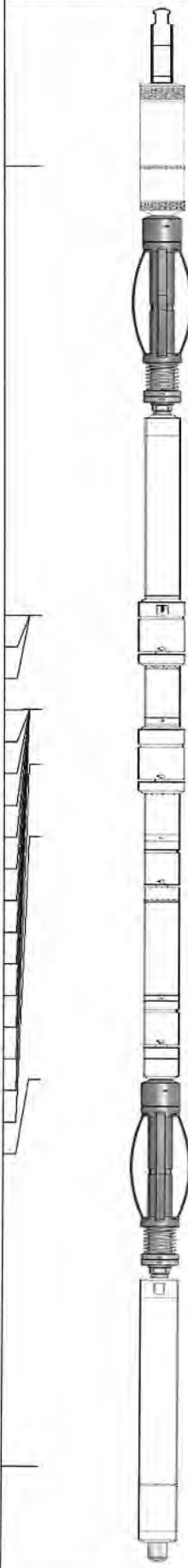
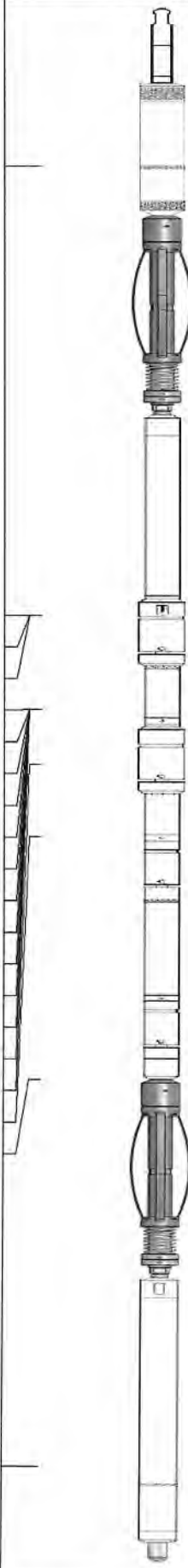
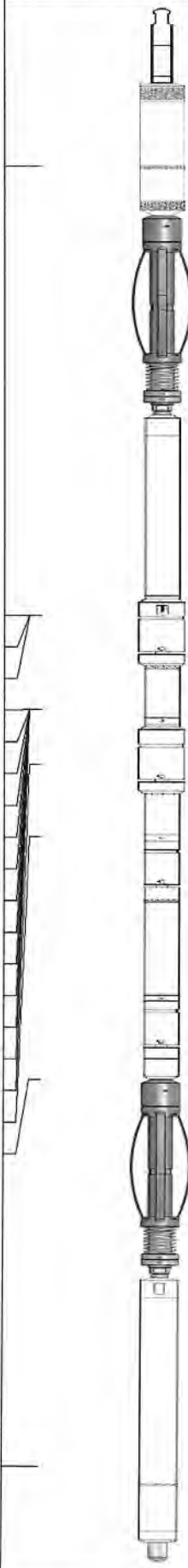
BHTEMP_Src	BOREID	BOTTEMP	CASEOD	CASETHCK	CASEWGHT	MAXAMPL	MINAMPL
TEMP	in 8.5	degF 100	in 5.5	in 0	lb/ft 23	mV 71.9	mV 3.5
MINATTN	PERFS	PPT	SRFTEMP	TDEPTH			
db/ft 0.8	No	usec 219	degF 0	ft 0			

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

05/11/2023

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
CCL	19.20		Titan-1.4375 1 7/16 Titan Type II Cable Head	1.03	1.44	5.00
			CCL-312tekco (101) Tekco 3 1/8" 450 Deg. "F" SmCo Logging CCL	1.82	3.12	25.00
			Tek-2.75 2 3/4" Tekco Adjustable Centralizer	2.73	2.75	25.00
TEMP	13.04		SCBL-Tek12 (T12_01) Tekco 400 Deg F 12 Sector RIB with Temp	9.13	3.25	135.00
WVFSYNC	13.04					
WVFCAL	13.04					
WVFS12	11.75					
WVFS11	11.75					
WVFS10	11.75					
WVFS9	11.75					
WVFS8	11.75					
WVFS7	11.75					
WVFS6	11.75					
WVFS5	11.75					
WVFS4	11.75					
WVFS3	11.75					
WVFS2	11.75					
WVFS1	11.75					
WVF3FT	11.00					
WVF5FT	10.00					
WVFTEMP	6.67	Tek-2.75 2 3/4" Tekco Adjustable Centralizer	2.73	2.75	25.00	
GR	1.31		GR-Tek-Co 2 3/4 (0111) Tekco 2 3/4" 400 Deg. F Logging Gamma Ray	3.67	2.75	40.00
			Titan-1.4375_Cap Titan 1 7/16" Cap	0.27	1.44	1.00

Dataset: lindsey2h.db: field/well/run1/pass6.3  
Total length: 21.37 ft  
Total weight: 256.00 lb

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Total height  
O.D.: 3.25 in



Company	ANTERO RESOURCES CORPORATION	
Well	LINDSEY UNIT 2 H	
Field	TYLER	
County	TYLER	
State	W.V.	Country