



Radial Cement Bond Log
Gamma Ray / CCL
Temperature

Company Antero Resources Corporation
 Well Tamarind Unit 1H
 Field Mountain
 County Tyler
 State West Virginia Country USA

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Location: API #: 47-095-02398
 Latitude: 39.35898
 Longitude: -80.97551
 SEC TWP RGE
 Permanent Datum Ground Level Elevation 1,178 ft
 Log Measured From Kelly Bushing
 Drilling Measured From Kelly Bushing

Other Services
 Elevation
 K.B. 1,210 ft
 D.F. 1,210 ft
 G.L. 1,178 ft

Date	3 - Mar - 2018			
Run Number	One			
Depth Driller	14,236 ft			
Depth Logger	6,774 ft			
Bottom Logged Interval	6,760 ft			
Top Log Interval	Surface			
Open Hole Size	-			
Type Fluid	Fresh Water			
Density / Viscosity	8.3 lb/gal			
Max. Recorded Temp.	137° F			
Estimated Cement Top	762 ft			
Time Well Ready	10:20			
Time Logger on Bottom	10:50			
Equipment Number	2611			
Location	Irwin			
Recorded By	Blake Fenton			
Witnessed By	Beau Carroll			
Run Number	Borehole Record		Tubing Record	
	Bit	From	To	Size
			Weight	From
				To
Casing Record	Size	Wgt/ft	Top	Bottom
Surface String	13 3/8 in	54.5 lbs/ft	Surface	-
Intermed. String	-	-	-	-
Intermed. 2 String	9 5/8 in	36 lbs/ft	Surface	-
Production String	5 1/2"	23 lbs/ft	Surface	14,236 ft

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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

Bond tool centralized with three inline bowspring centralizers
 Logged from 6,760 ft to surface with a maximum temperature of 136° F
 Tool zeroed at ground level and corrected 32 ft KB
 Marker joint detected from 5,614 ft to 5,624 ft
 Casing tally denotes marker joint from 5,611 ft to 5,621 ft
 Free pipe calibration taken from previous well, Packers Unit 2H
 Estimated top of cement bond at 762 ft
 Kick-off point 5,715 ft
 1,500 psi applied

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



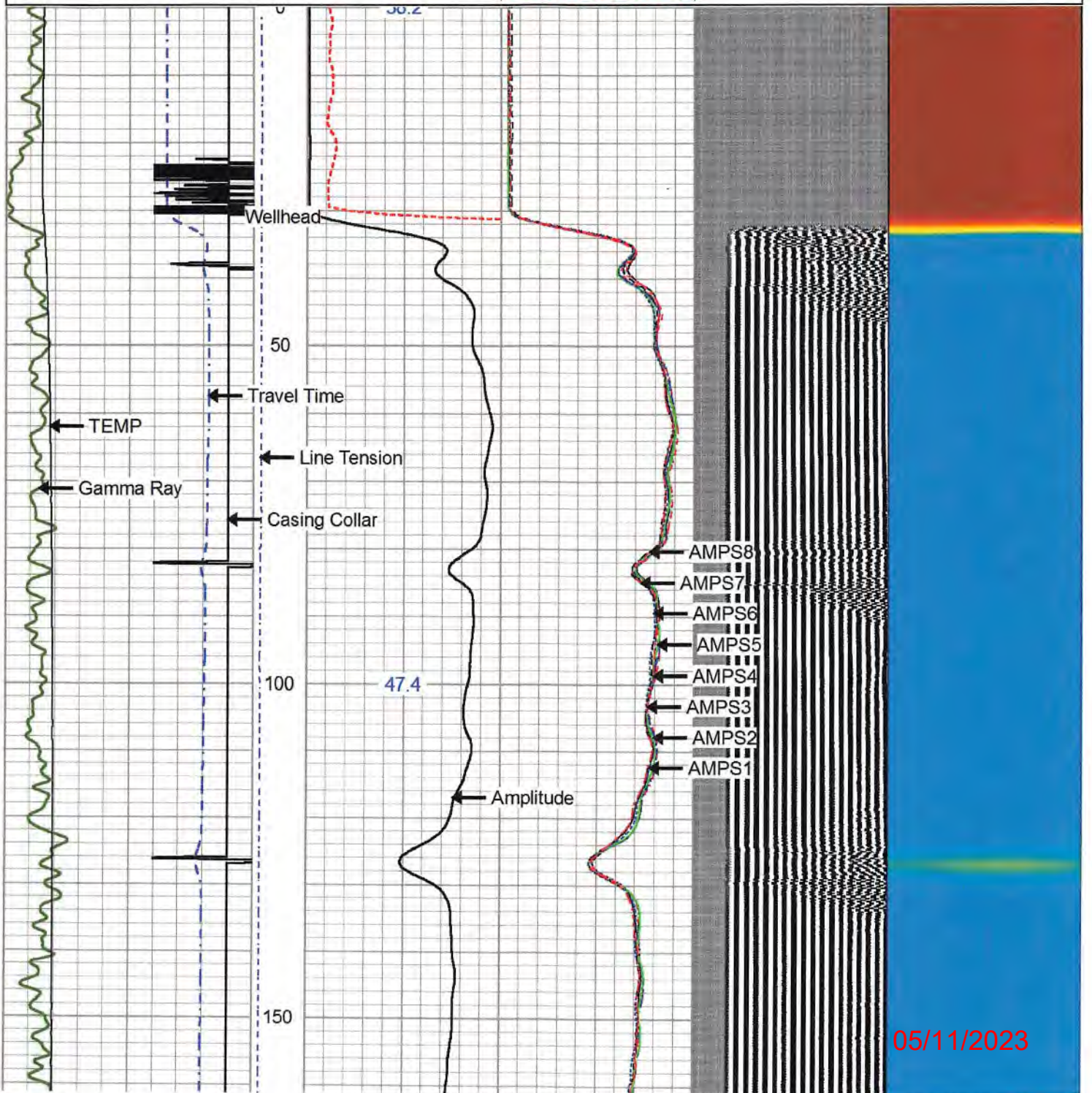
1,500 PSI MAIN PASS

Scale 1:240

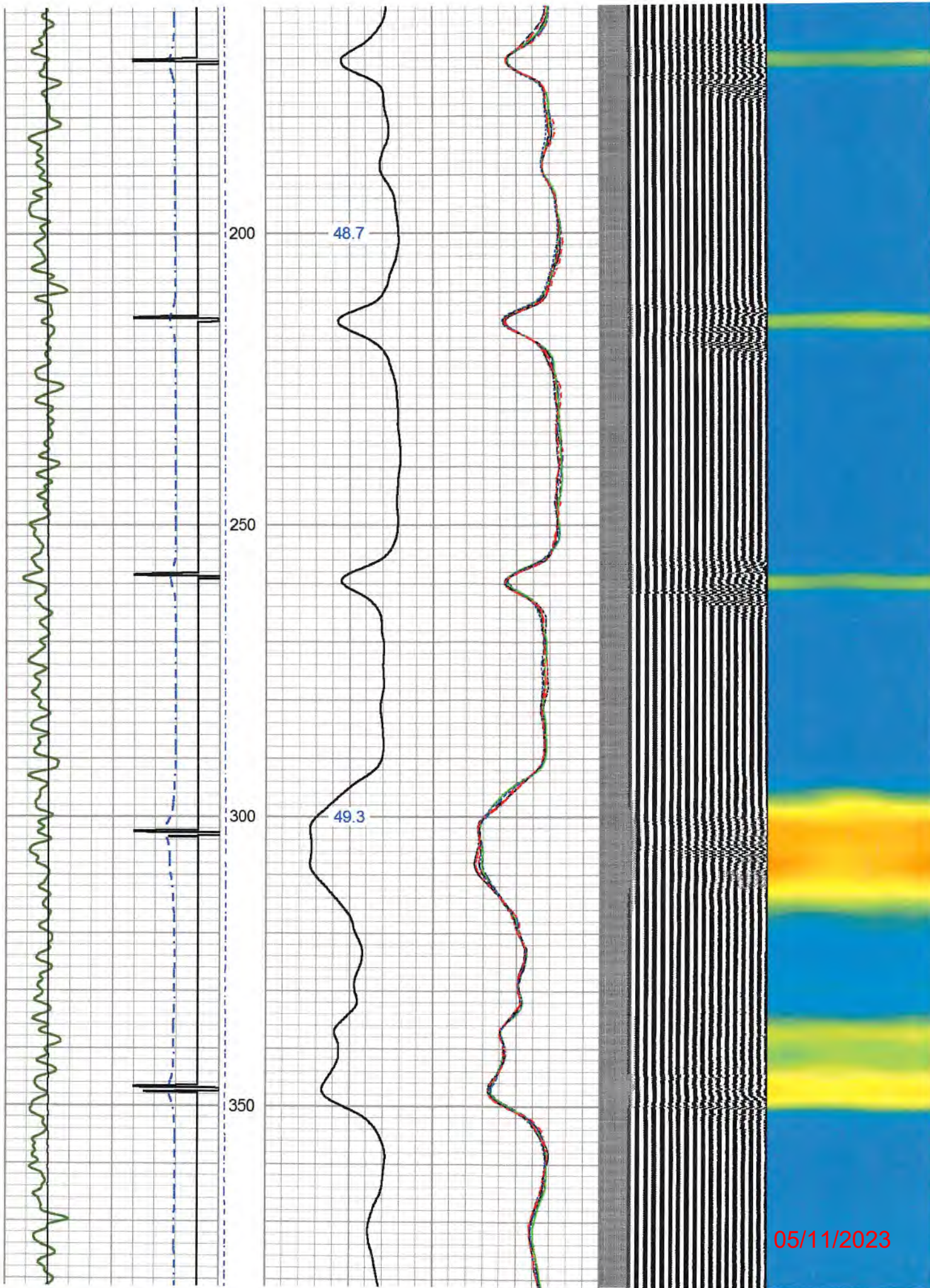
05/11/2023

Database File 47-095-02398_tamarind_unit1h_rcbl_03032018.db
 Dataset Pathname pass4
 Presentation Format ahws_rcbl_jc
 Dataset Creation Sat Mar 03 10:51:00 2018
 Charted by Depth in Feet scaled 1:240

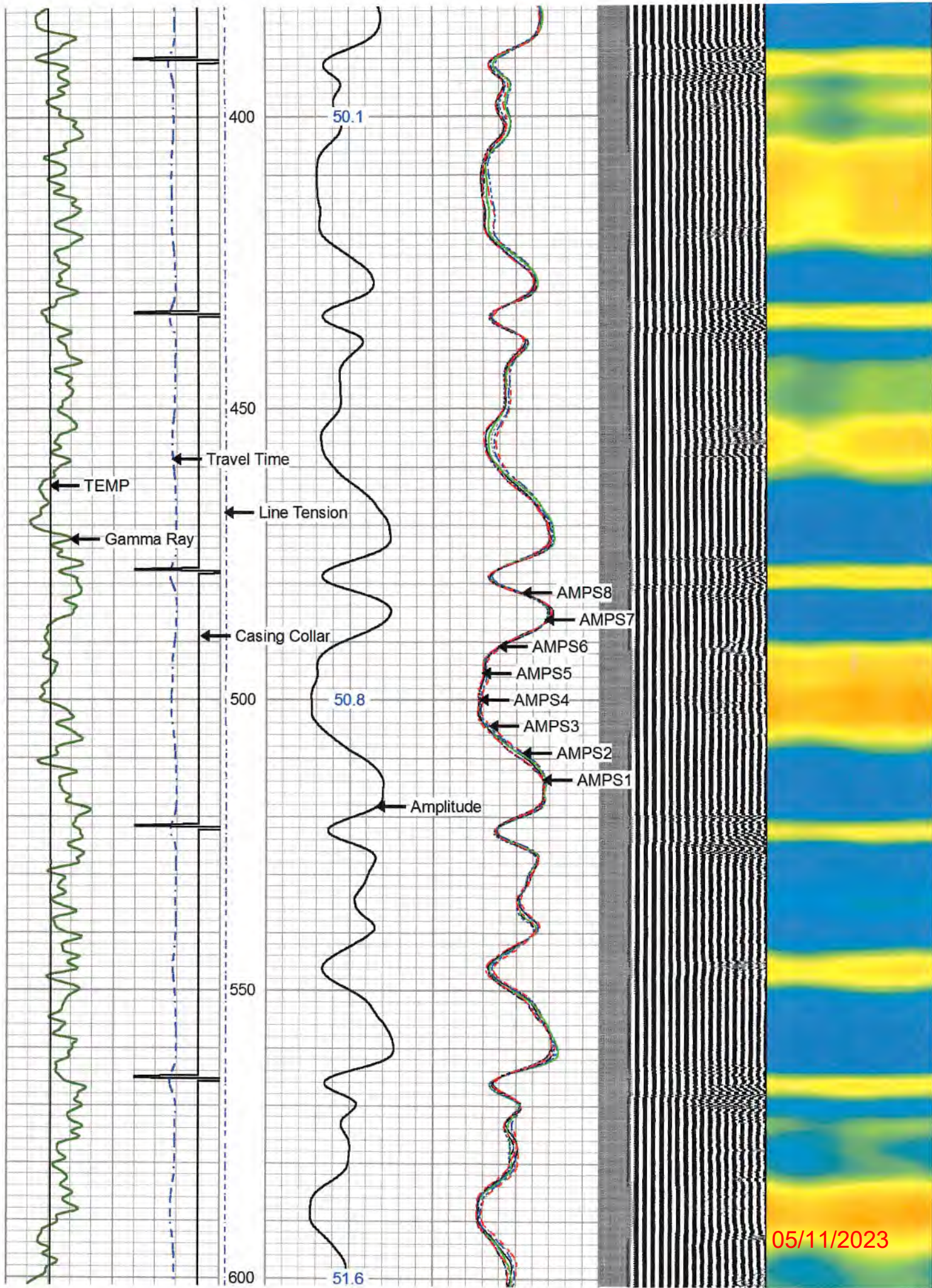
420	Travel Time (usec)	220	e Tens	0	Amplitude (mV)	100	-5	AMPS1	150	Variable Density	1	Cement Map	8
9	Casing Collar	-1	(lb)	0	Amplified Amplitude	100	-5	AMPS2	150		200 (V)		1200
0	Gamma Ray (GAPI)	300	(2500)	0	(mV)	10	-5	AMPS3	150				
0	TEMP (degF)	250			TEMP		-5	AMPS4	150				
					(degF)		-5	AMPS5	150				
							-5	AMPS6	150				
							-5	AMPS7	150				
							-5	AMPS8	150				

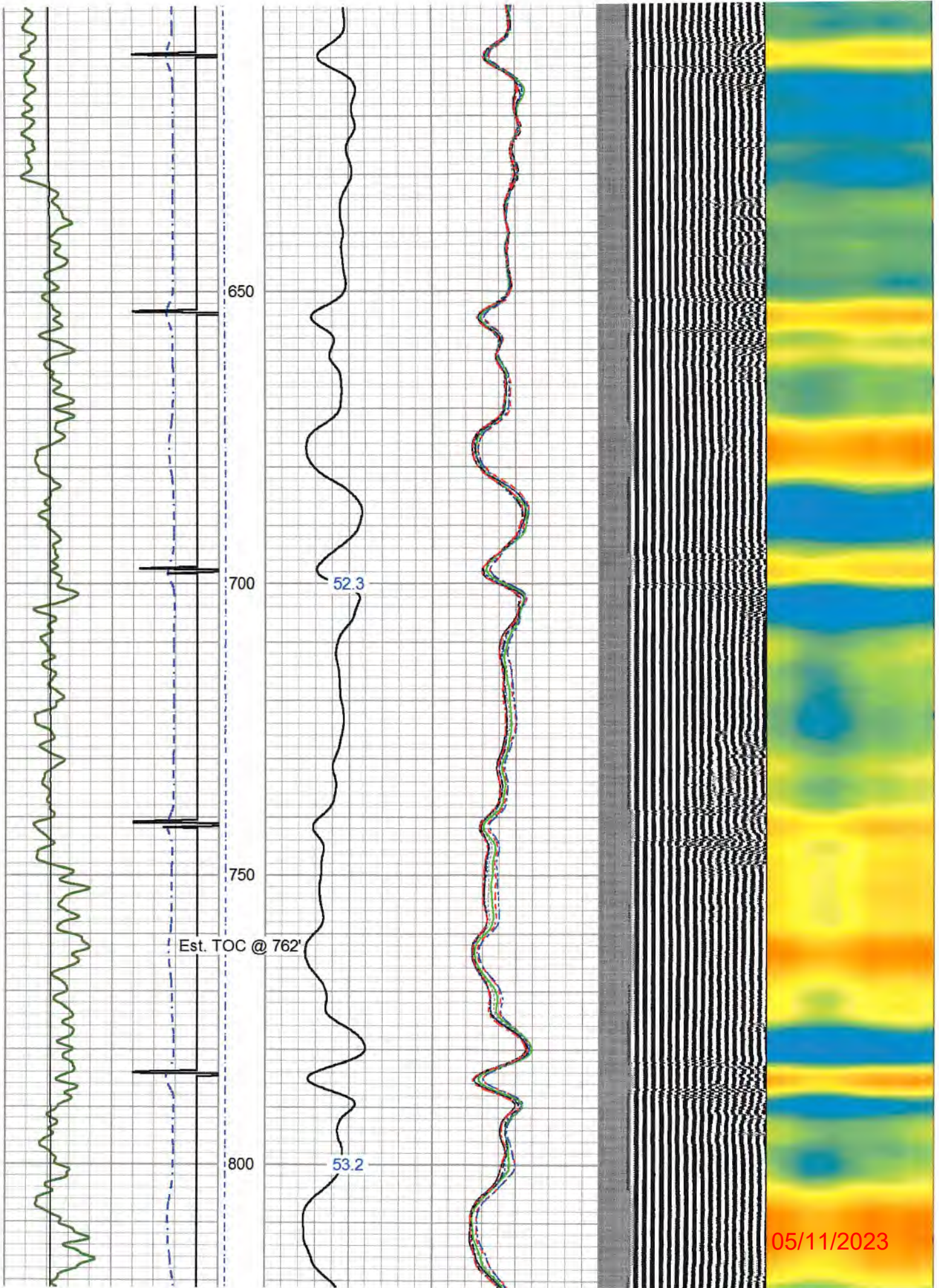


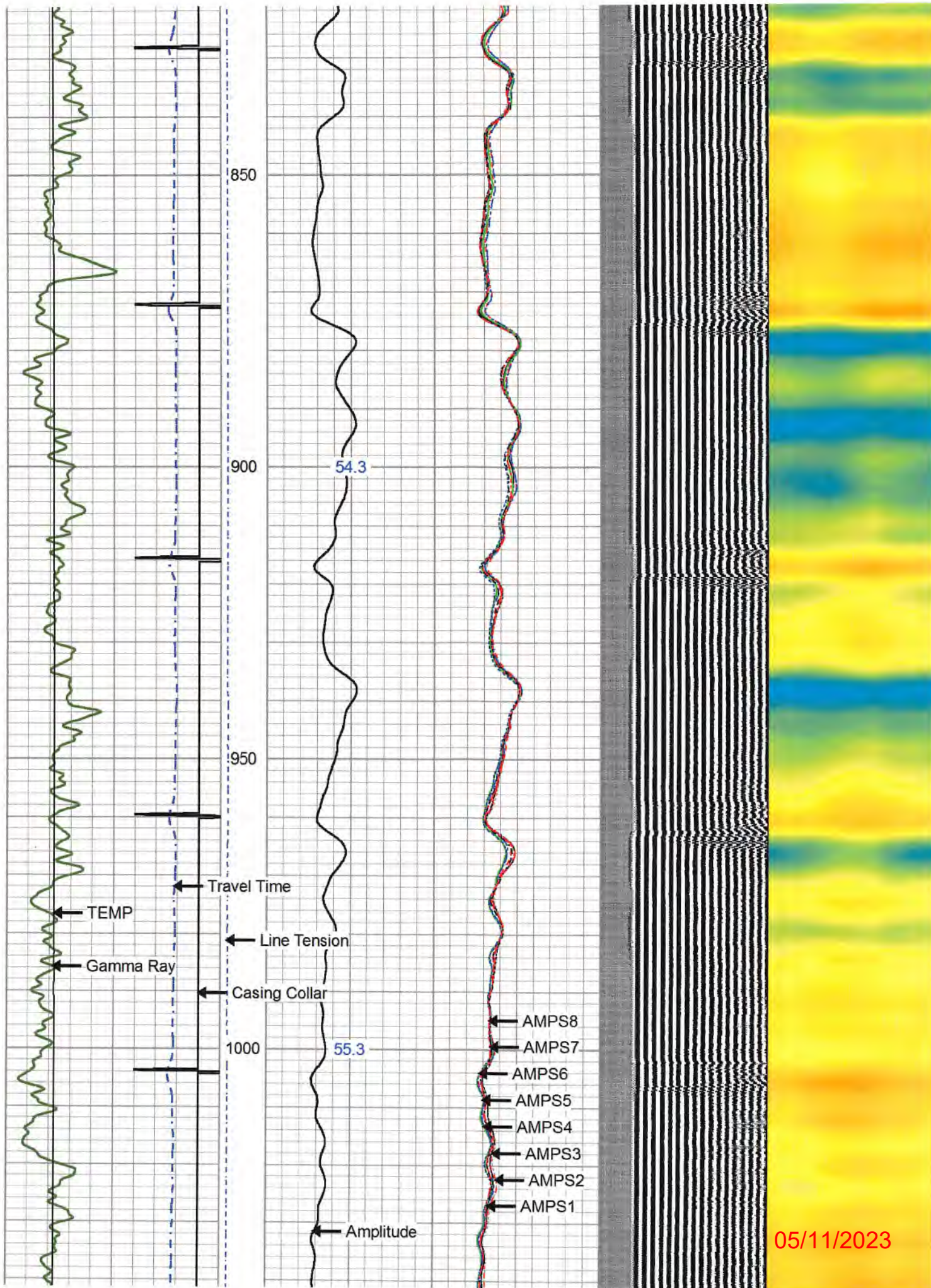
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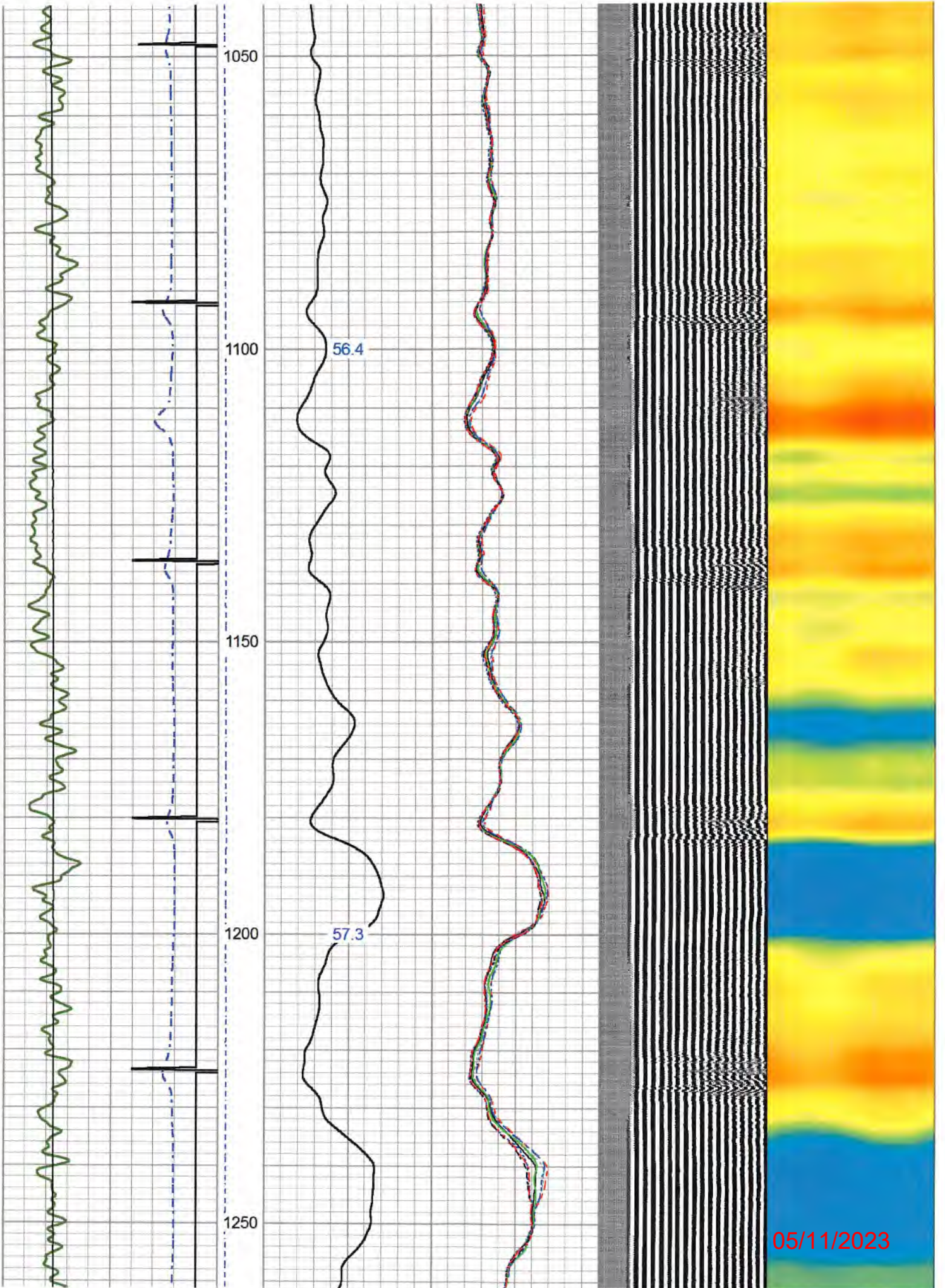


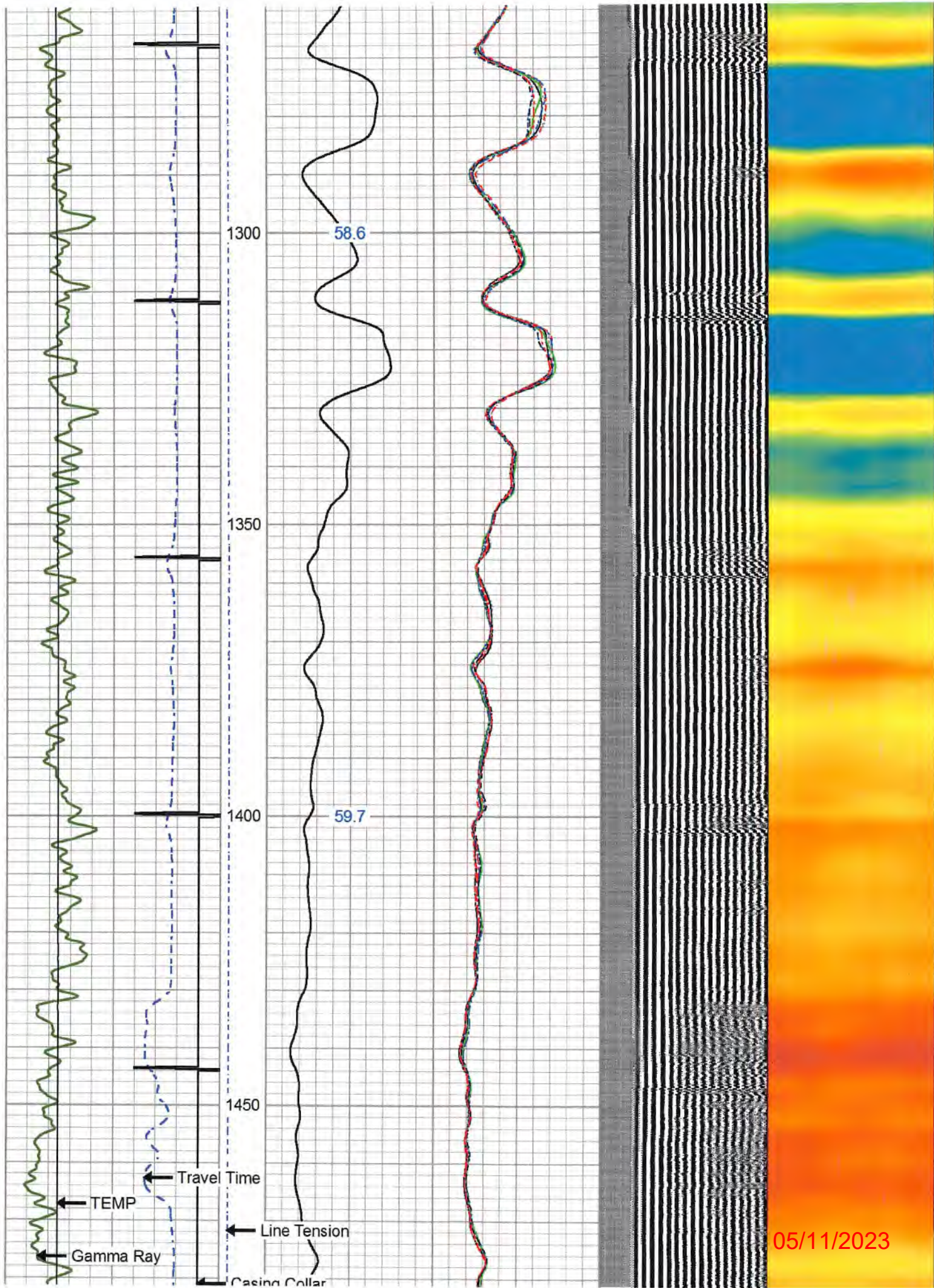
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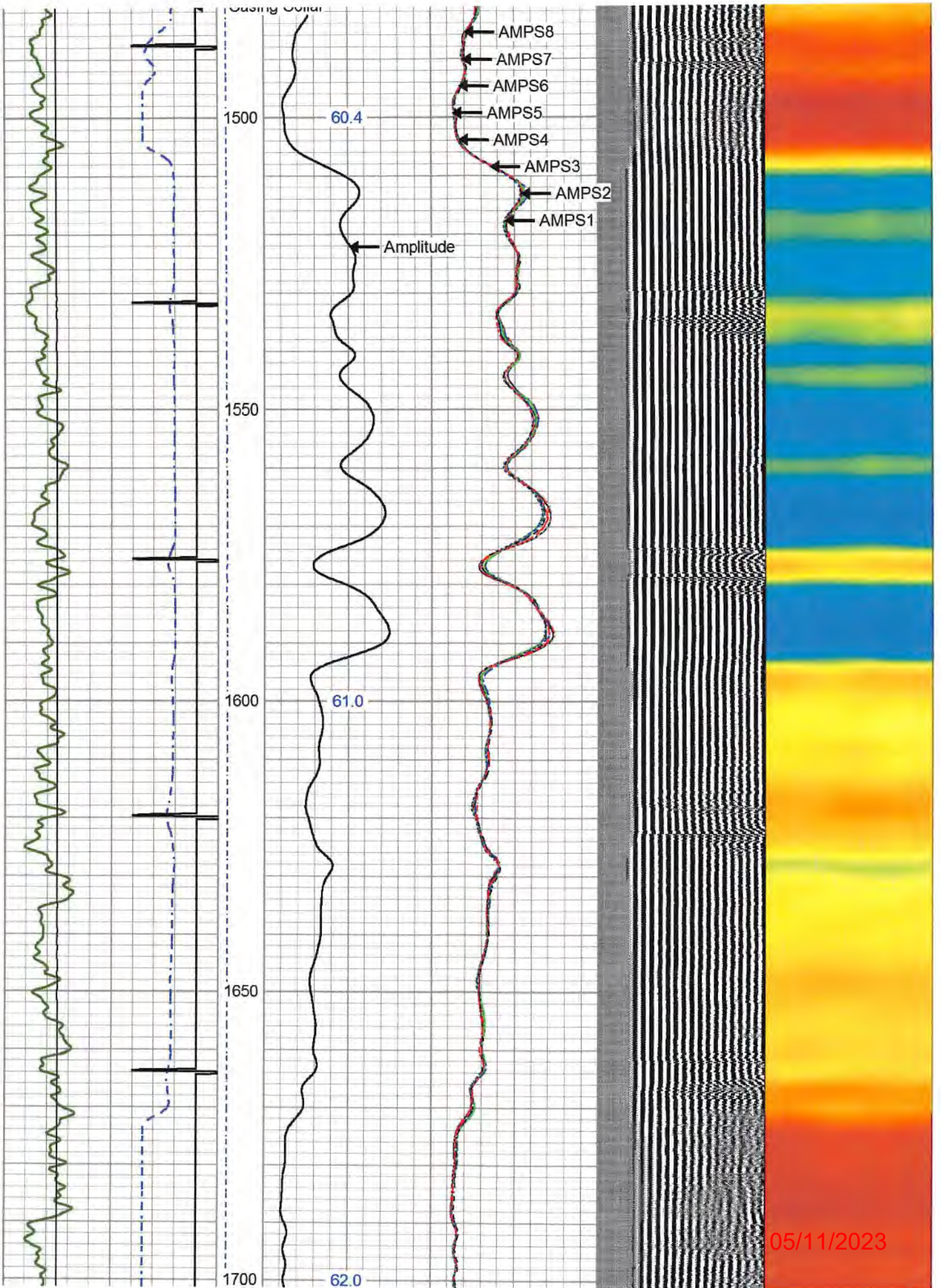


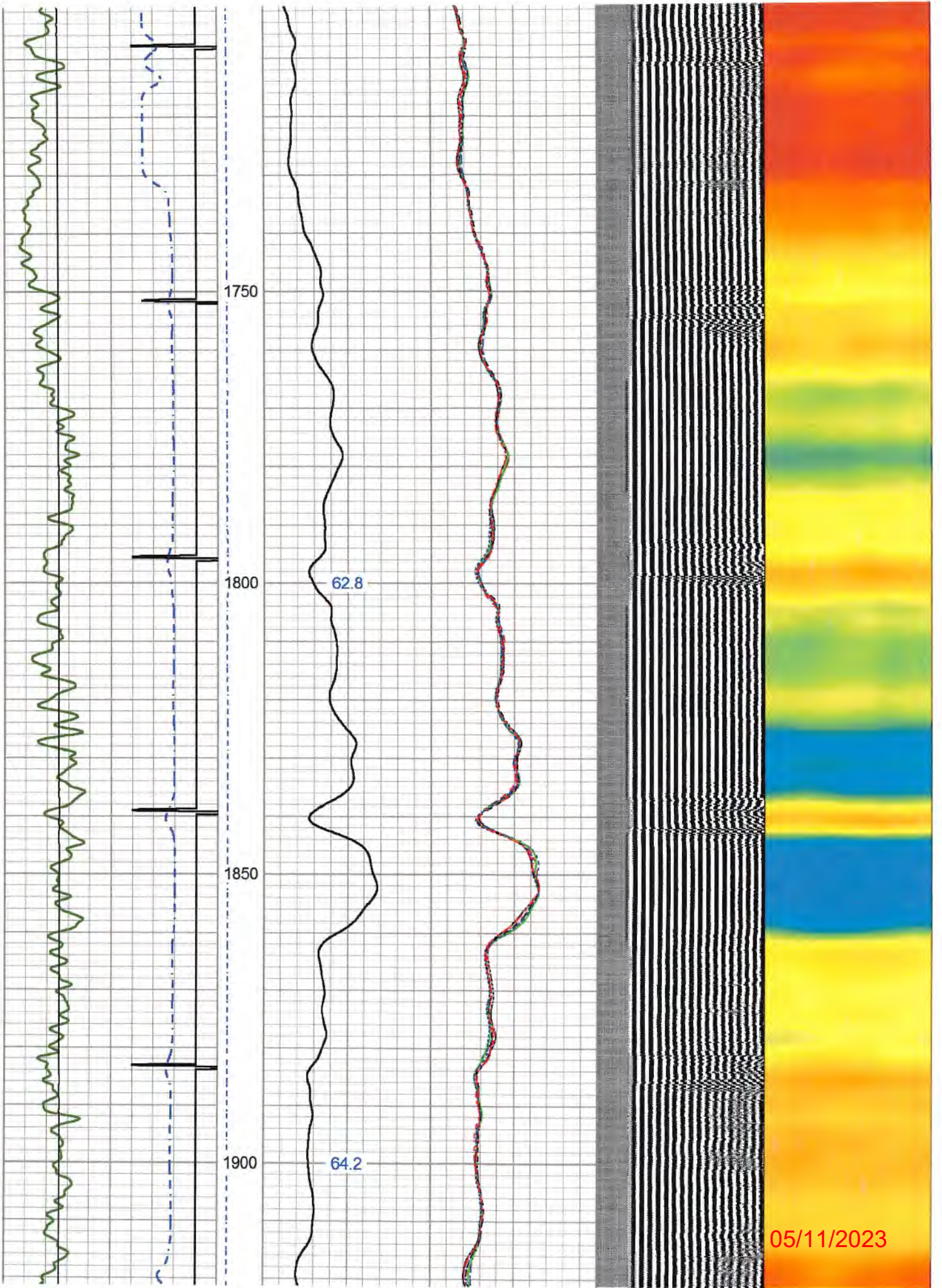




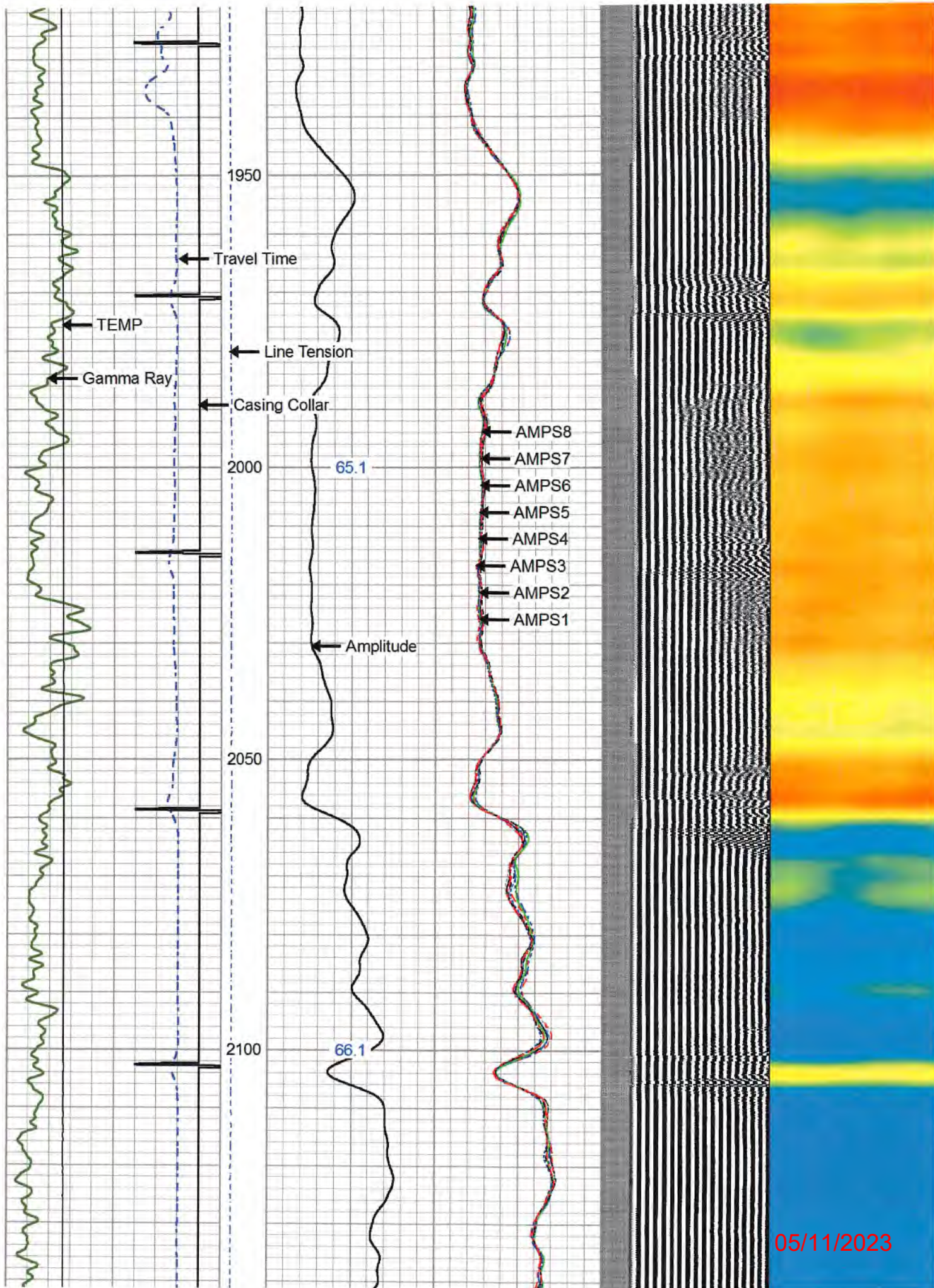


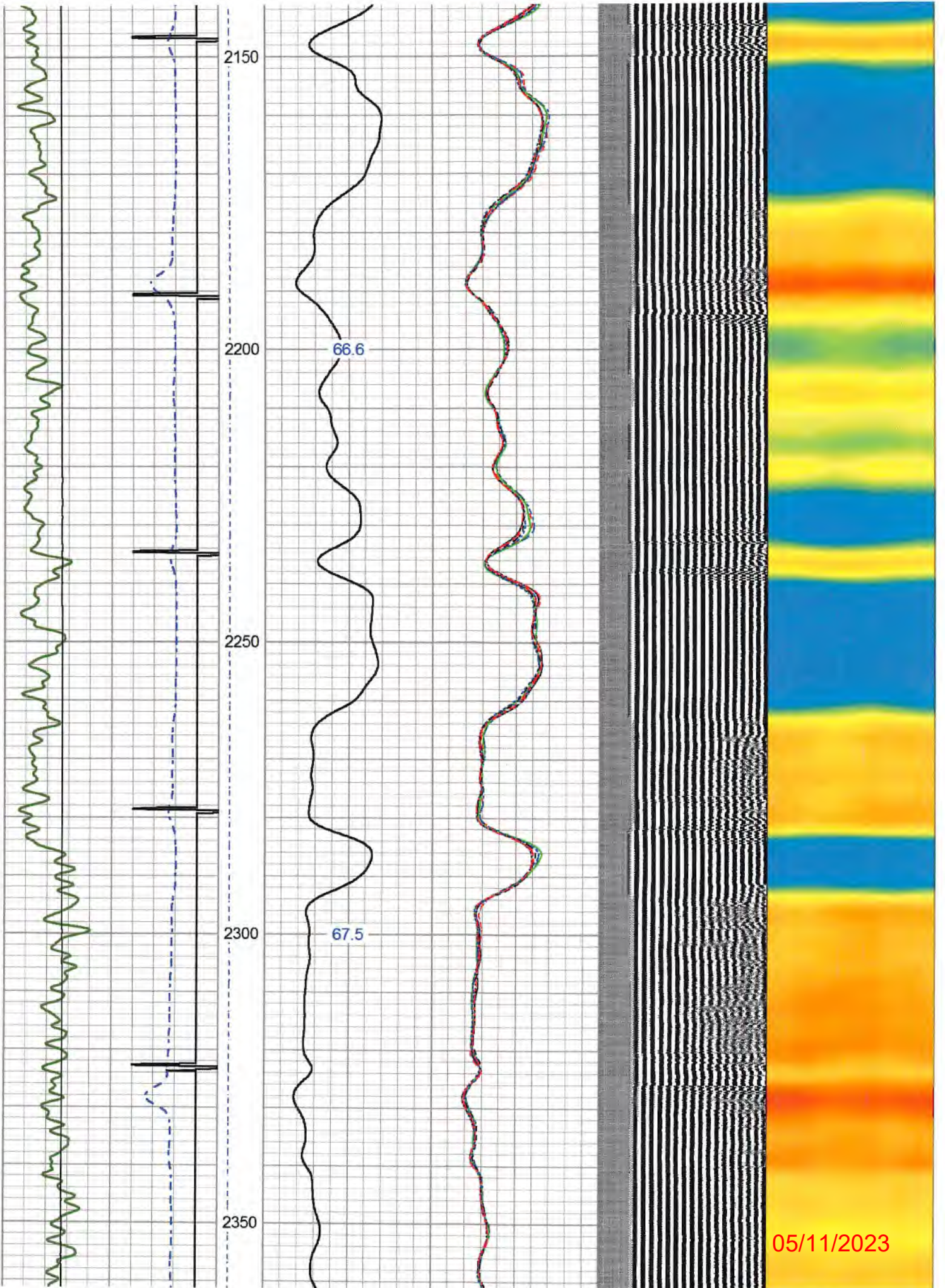


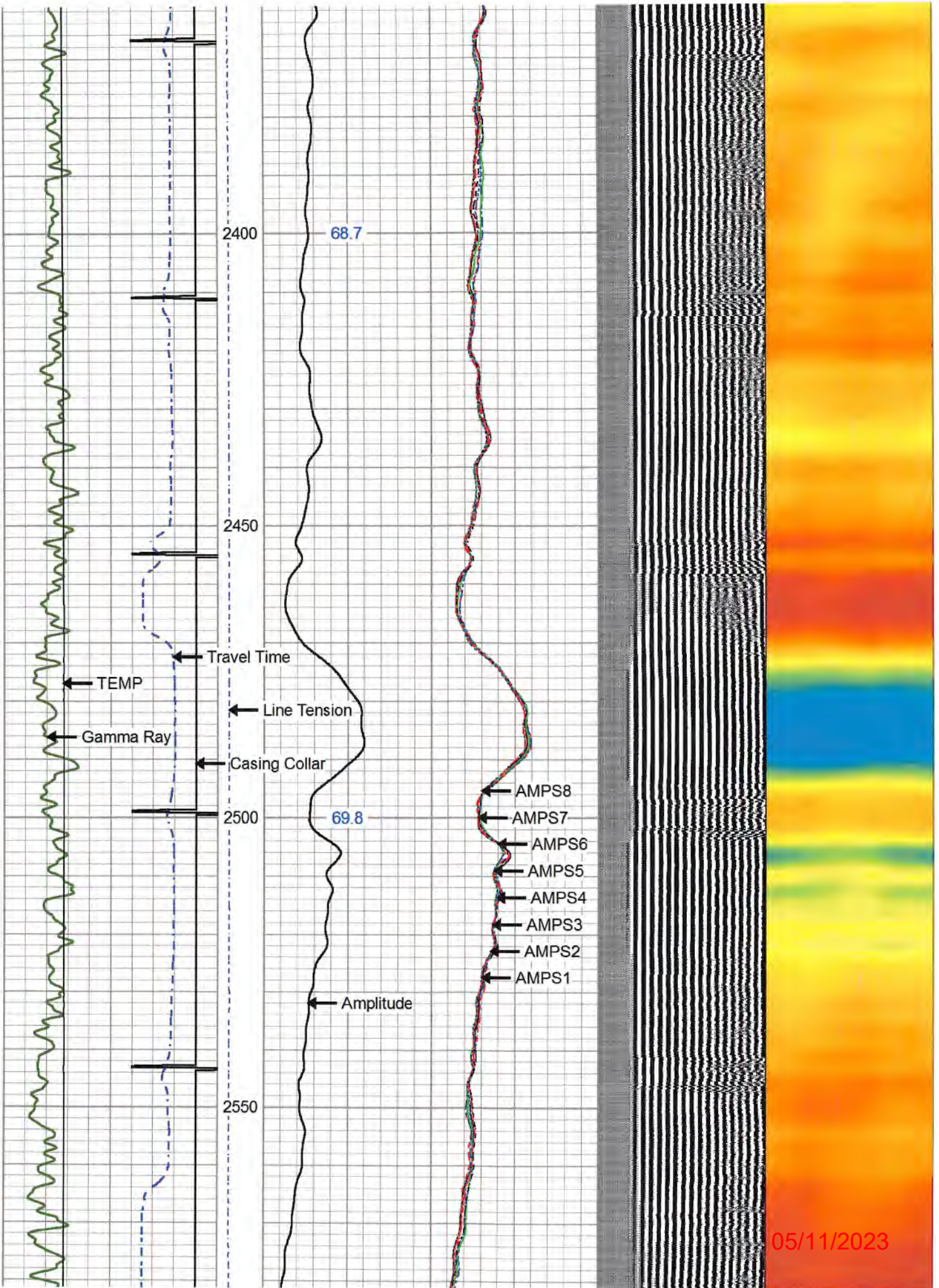


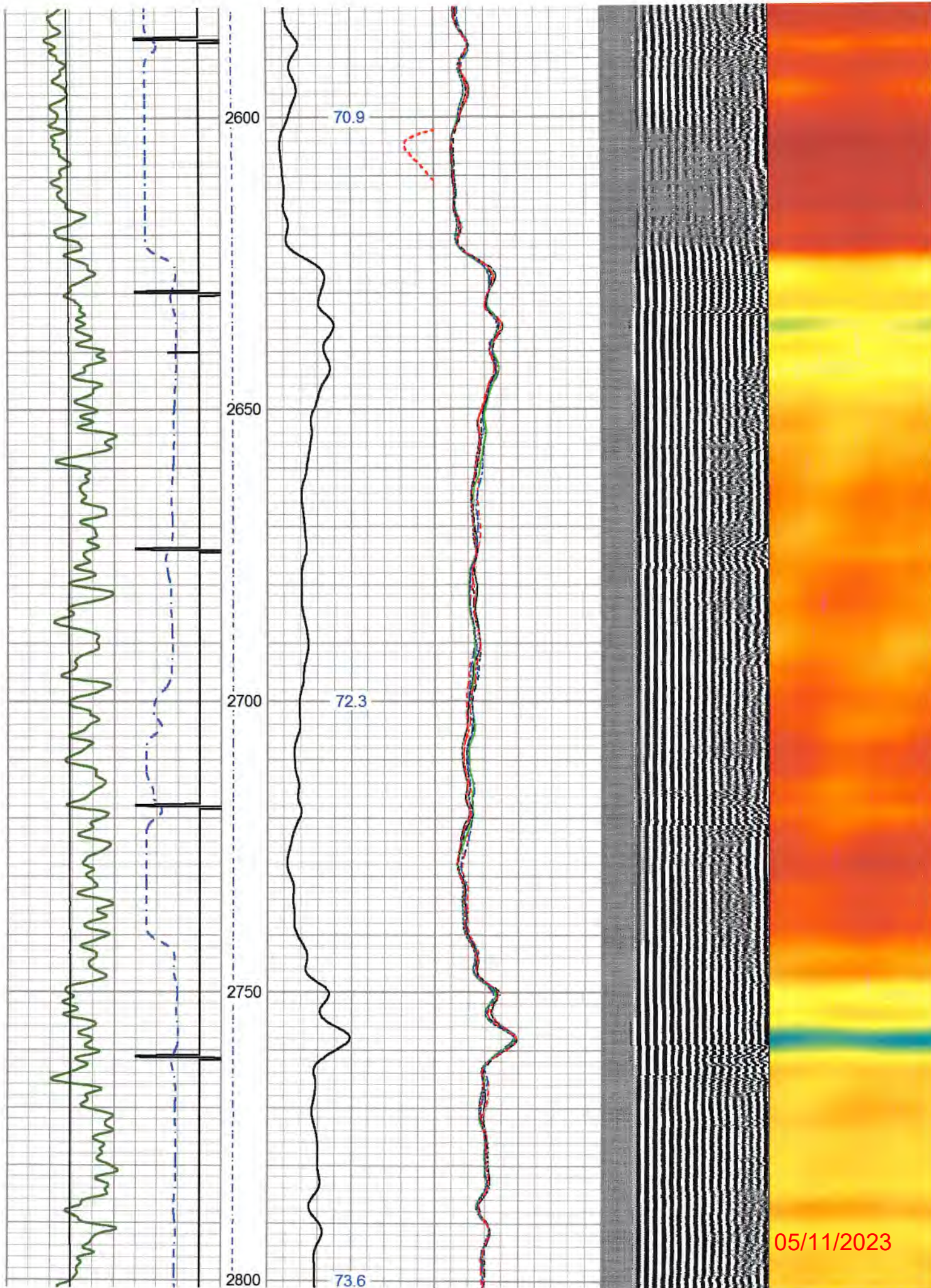


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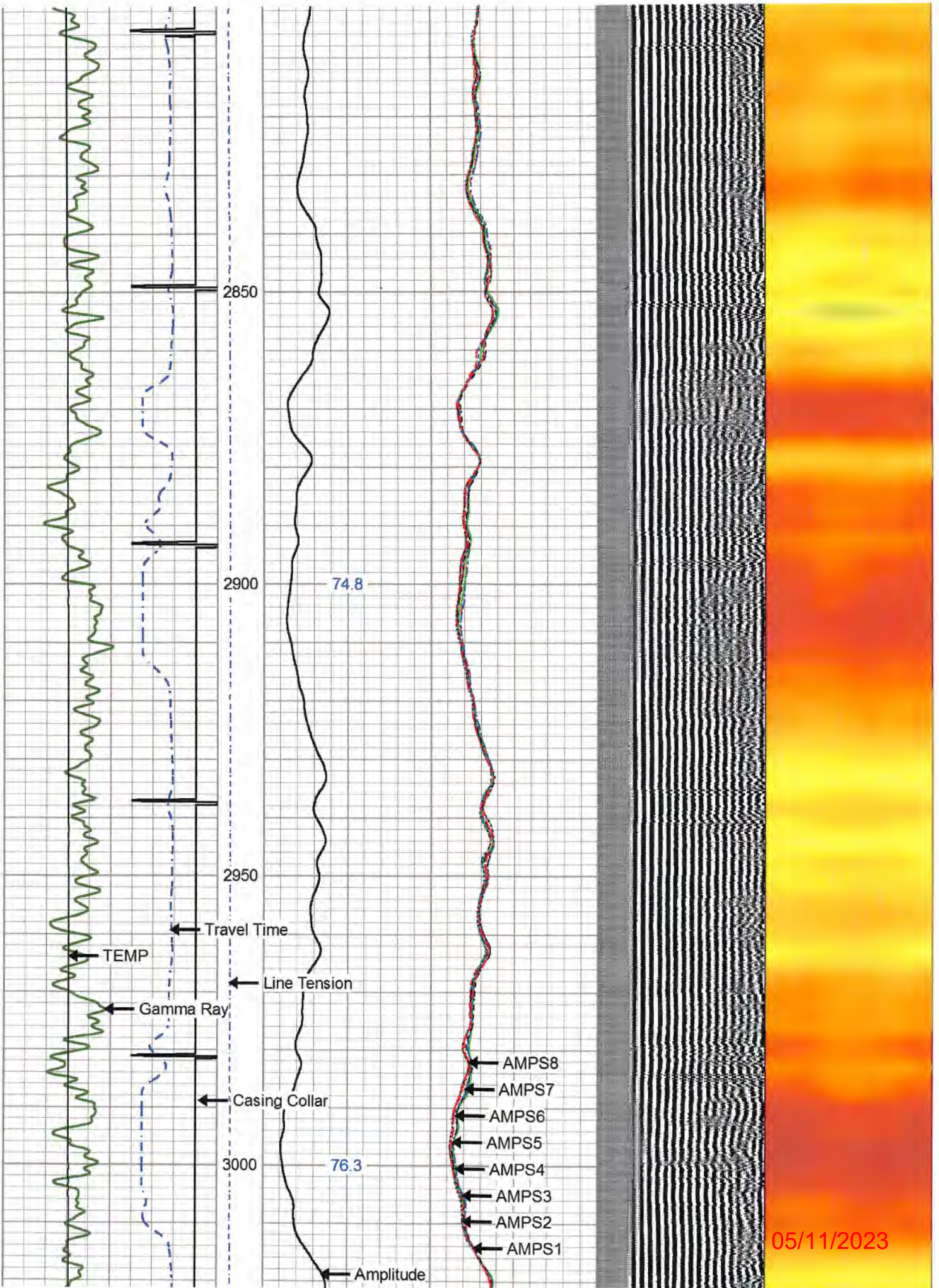




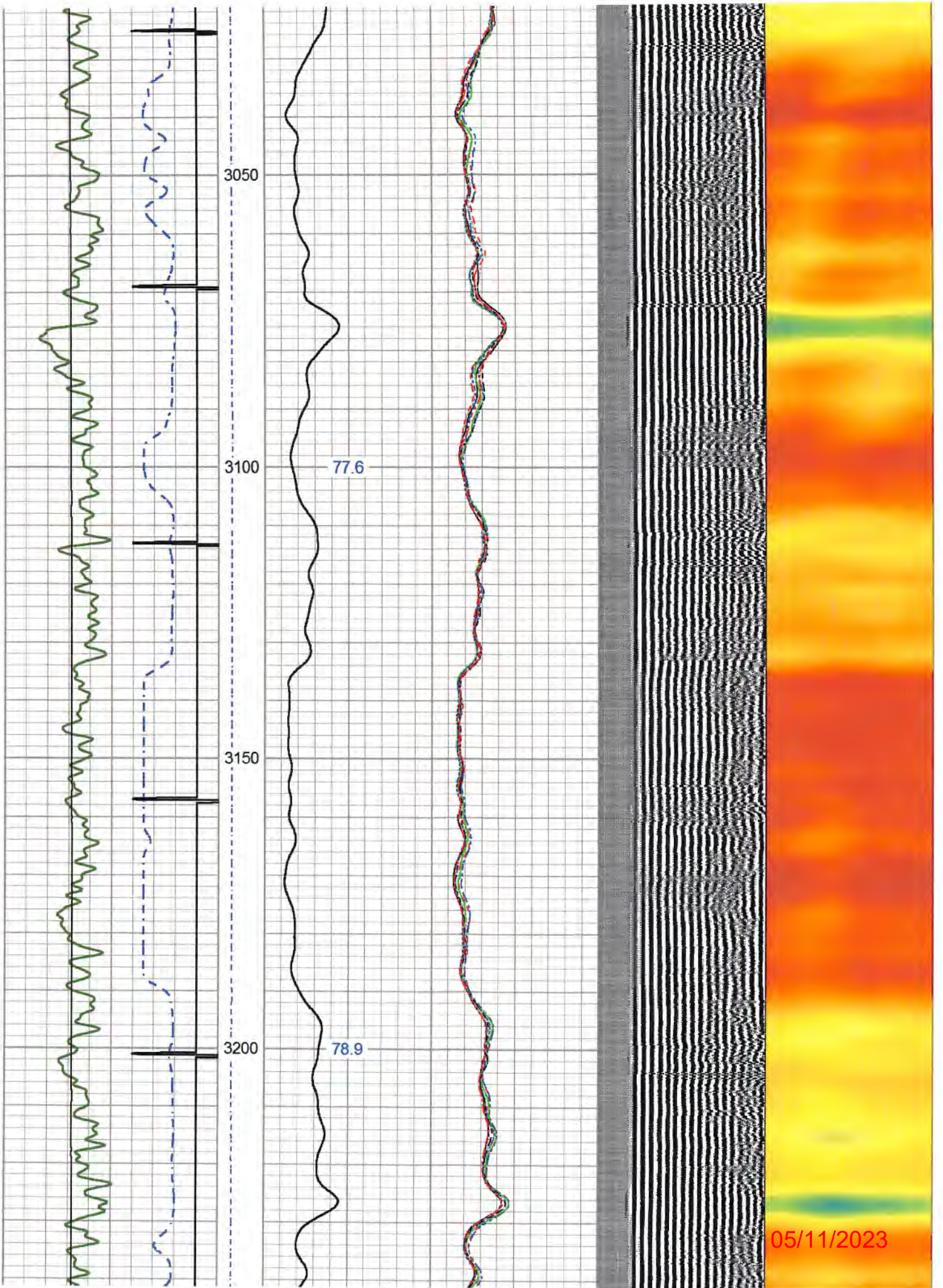




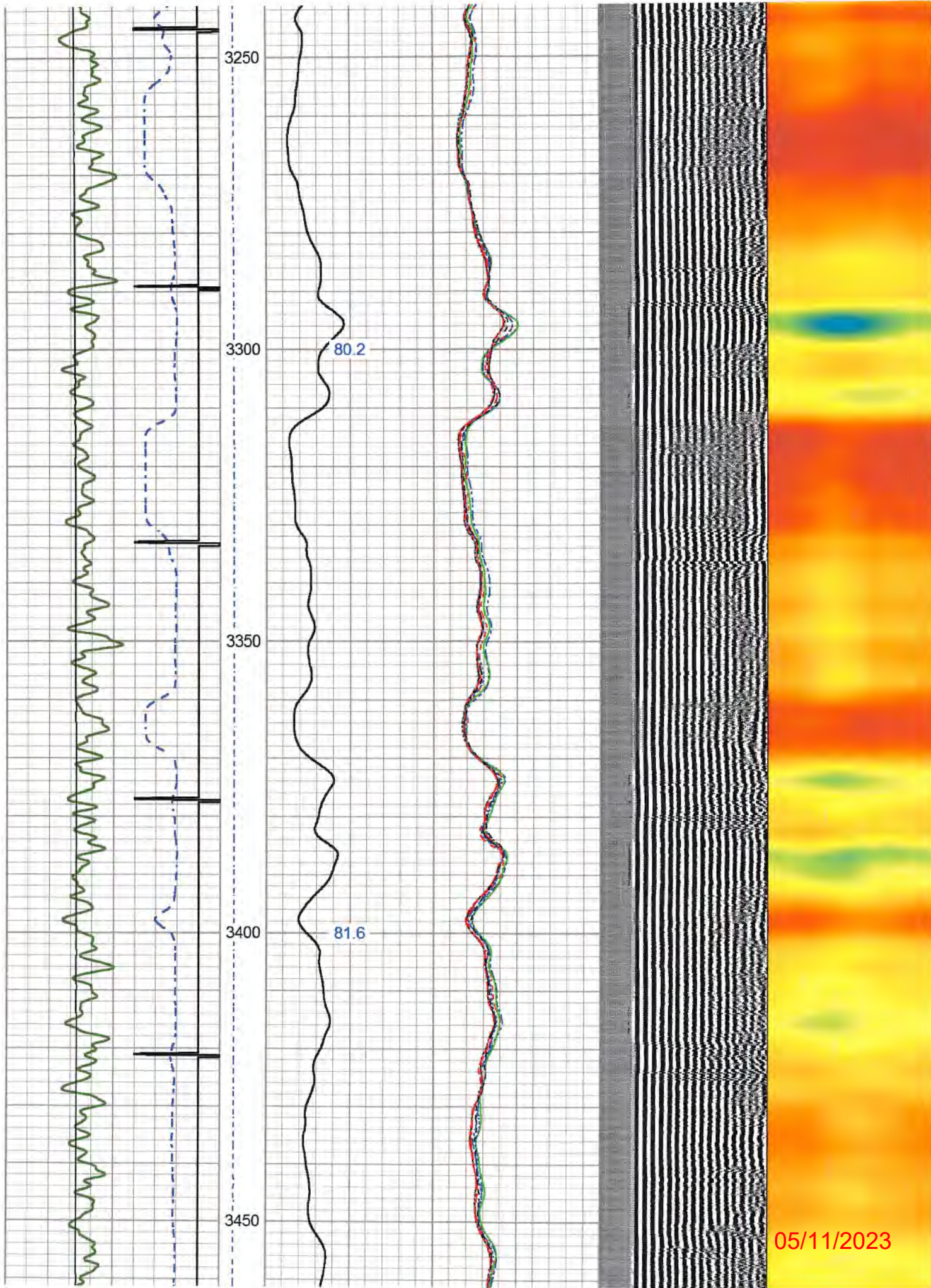
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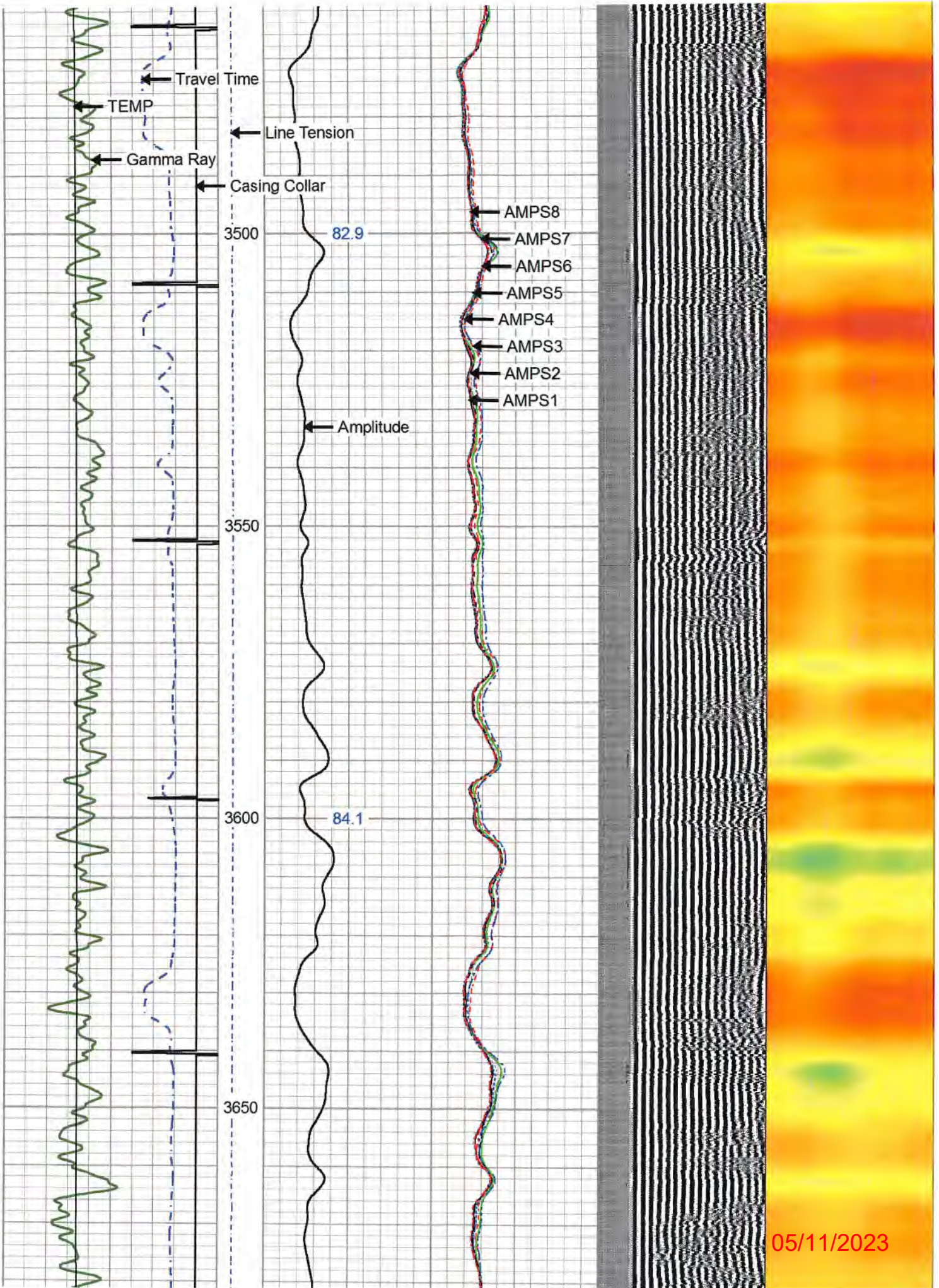


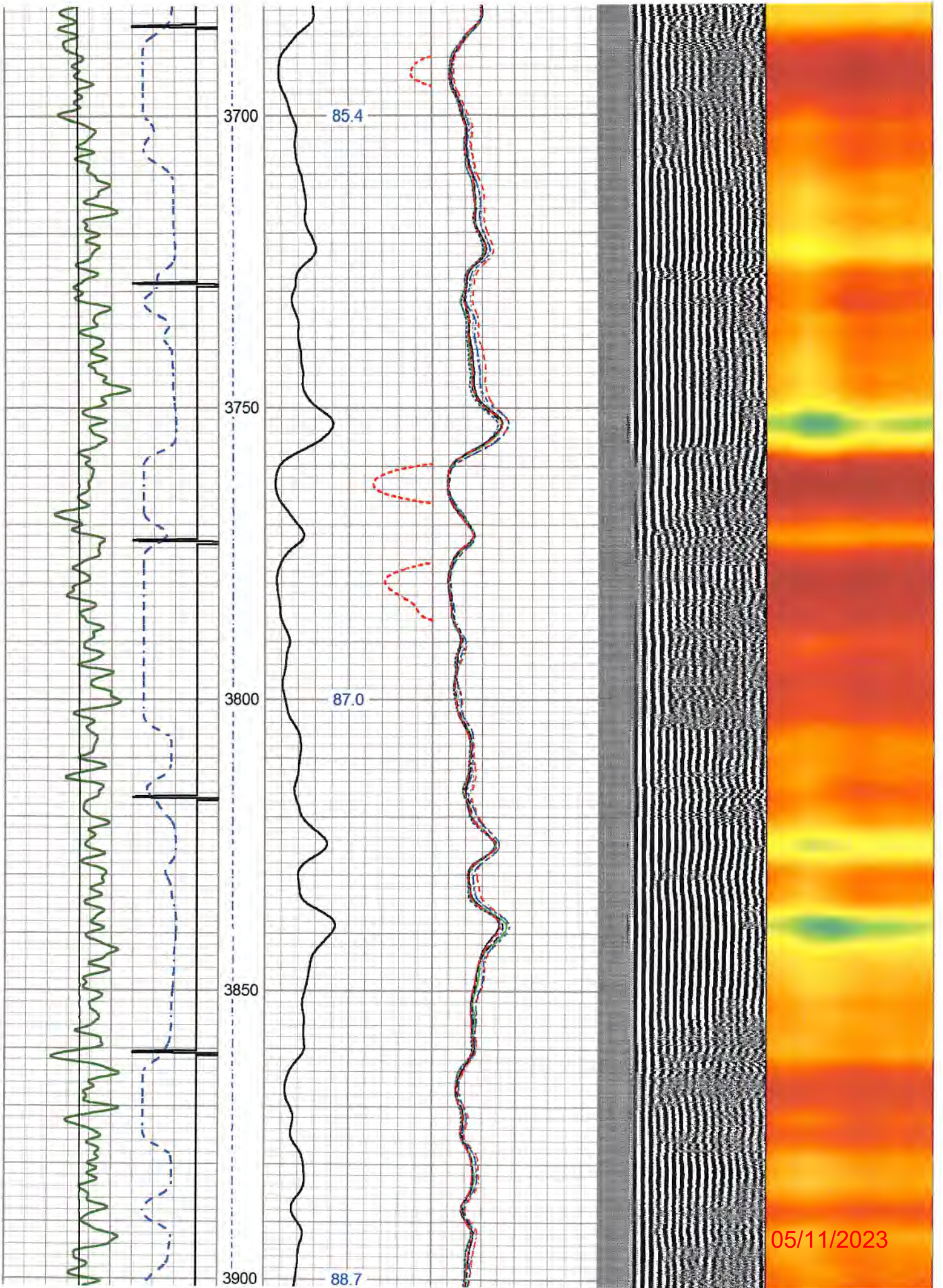
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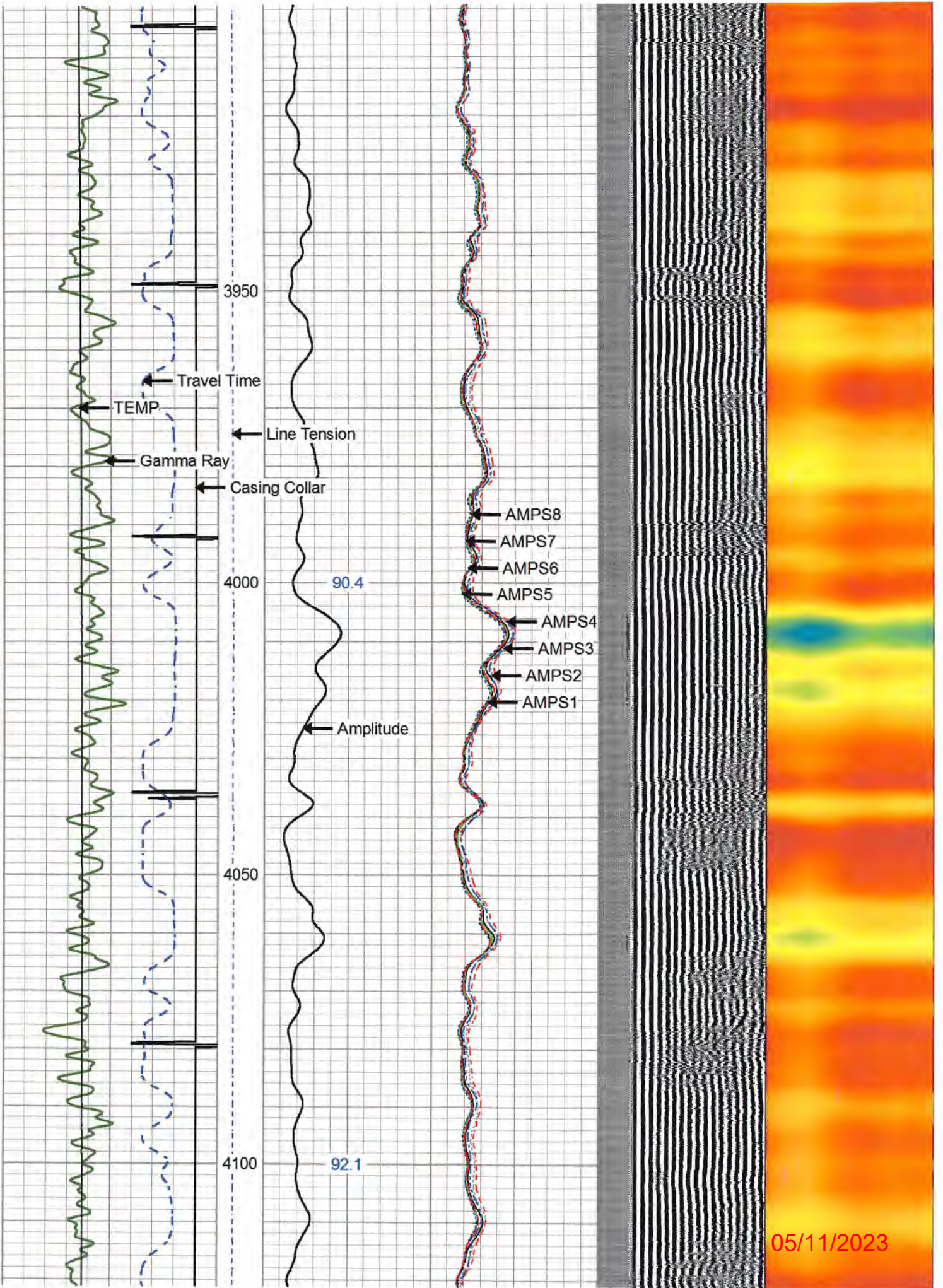


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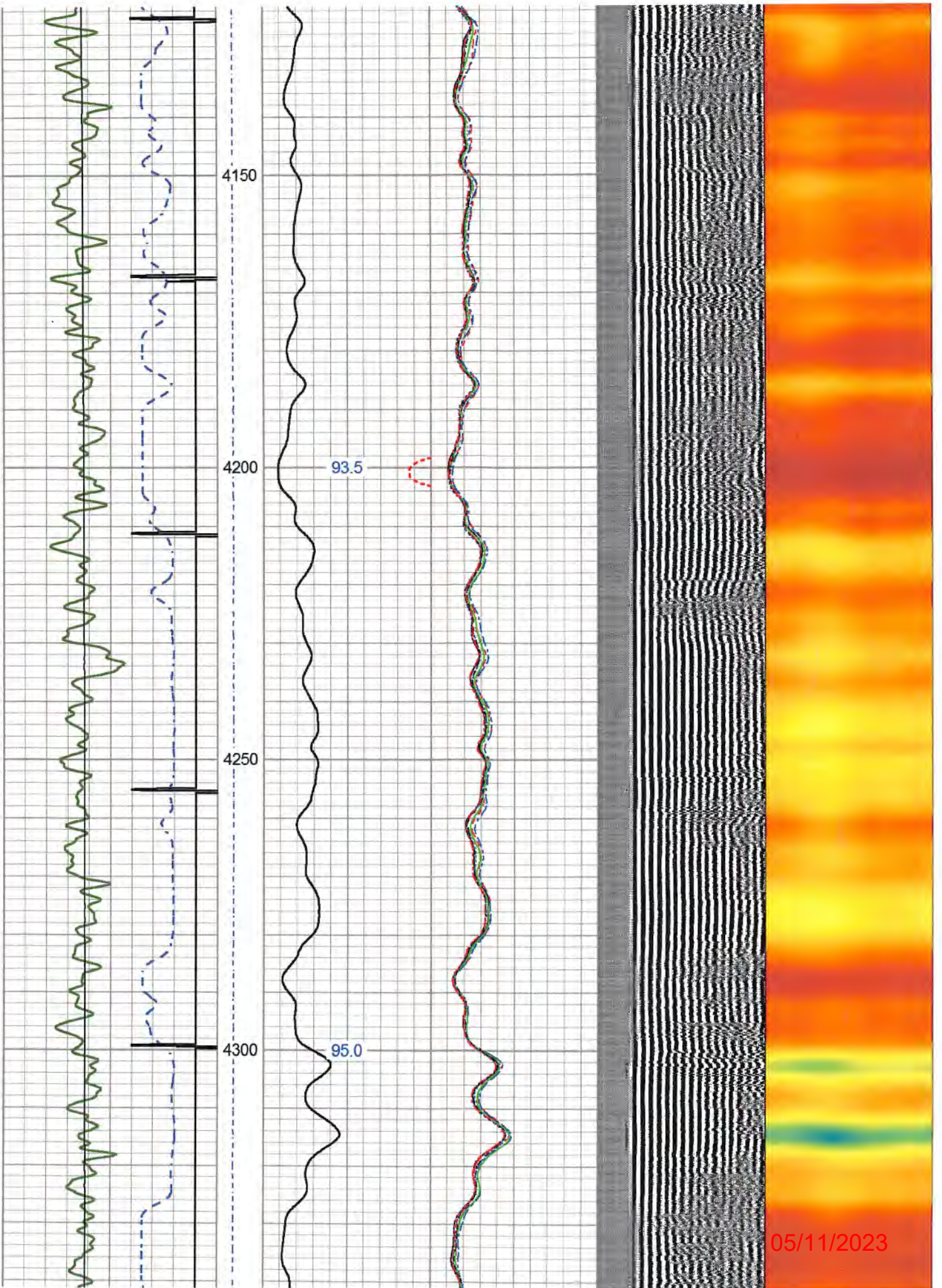




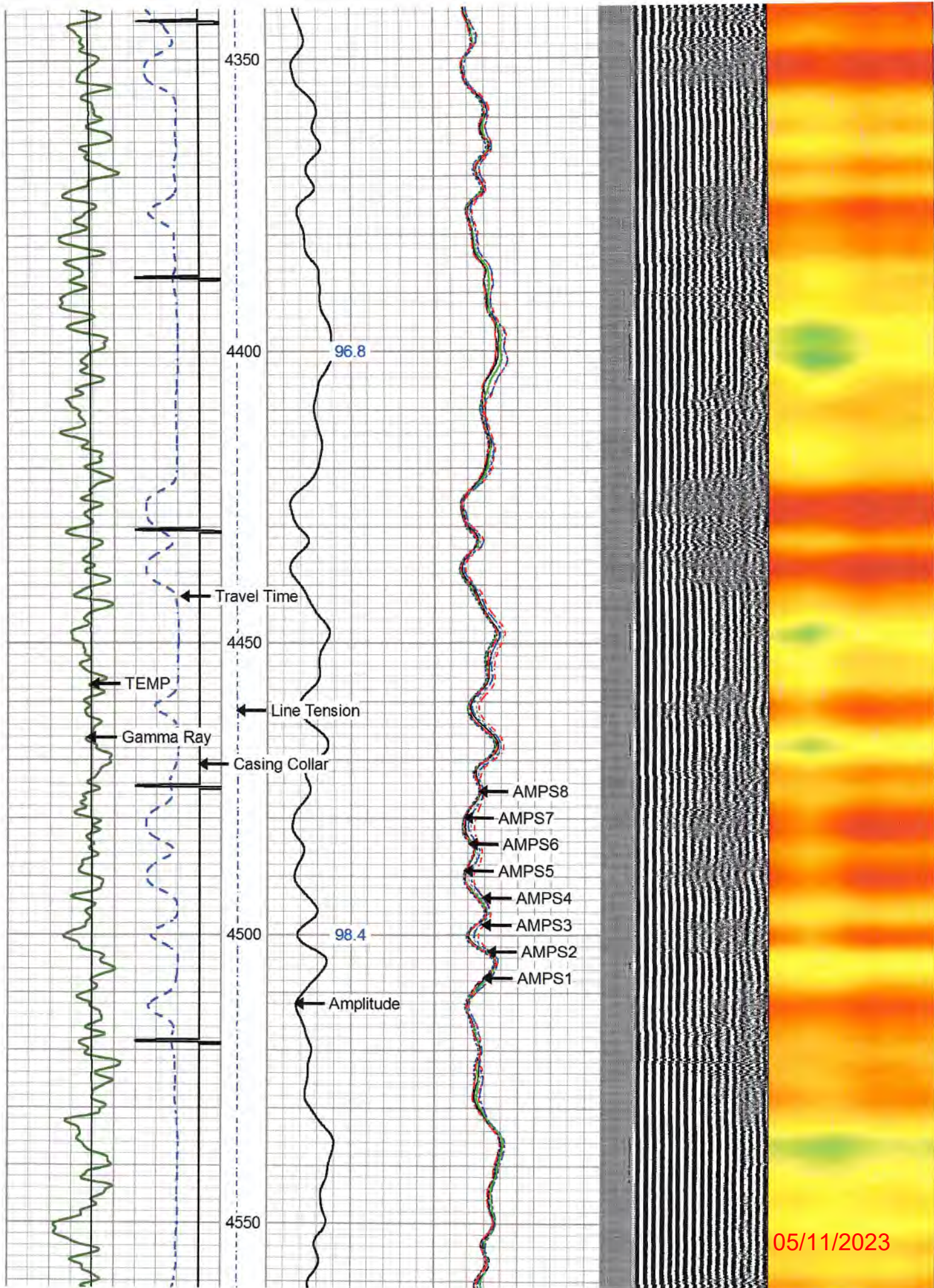


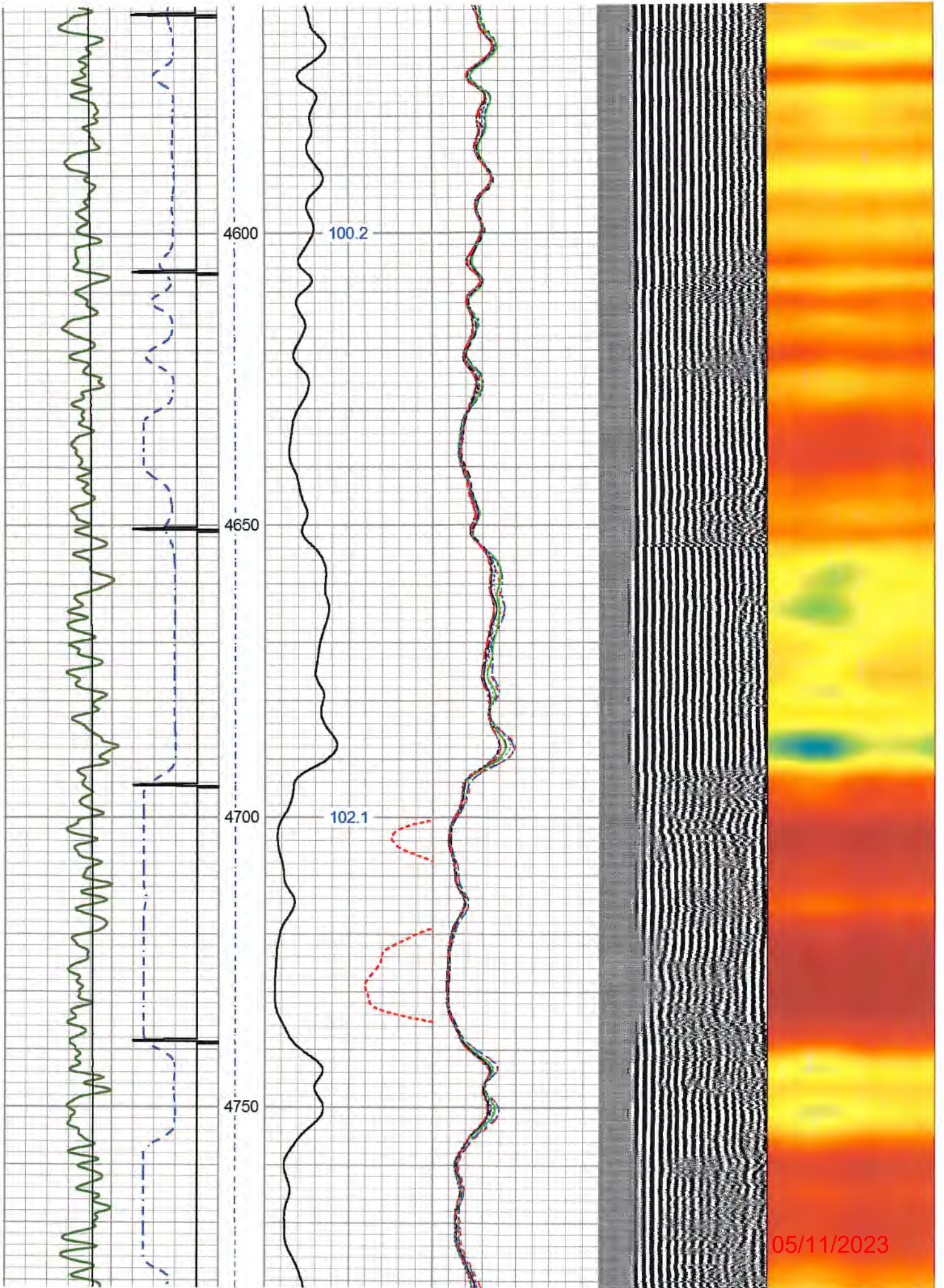


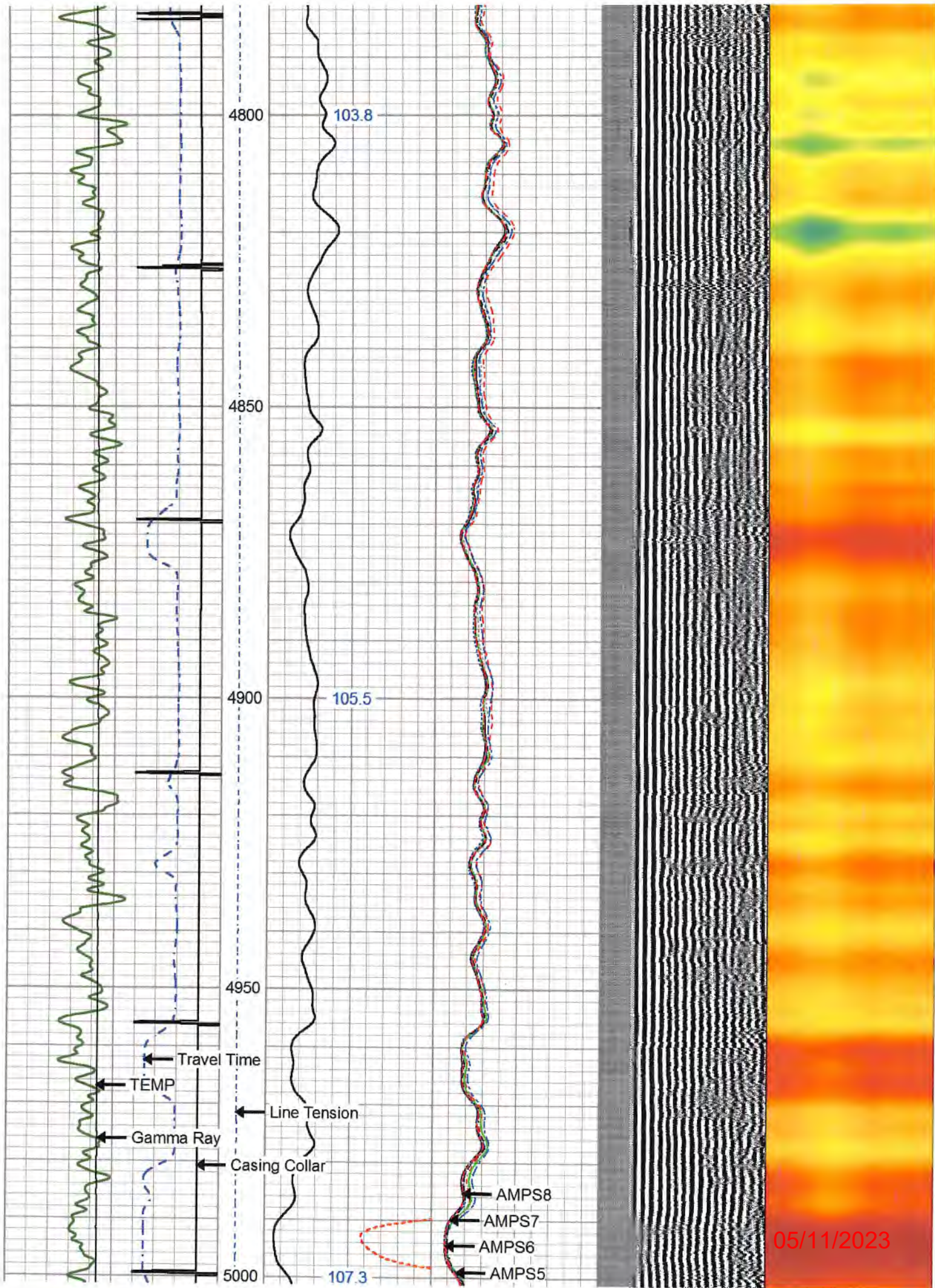
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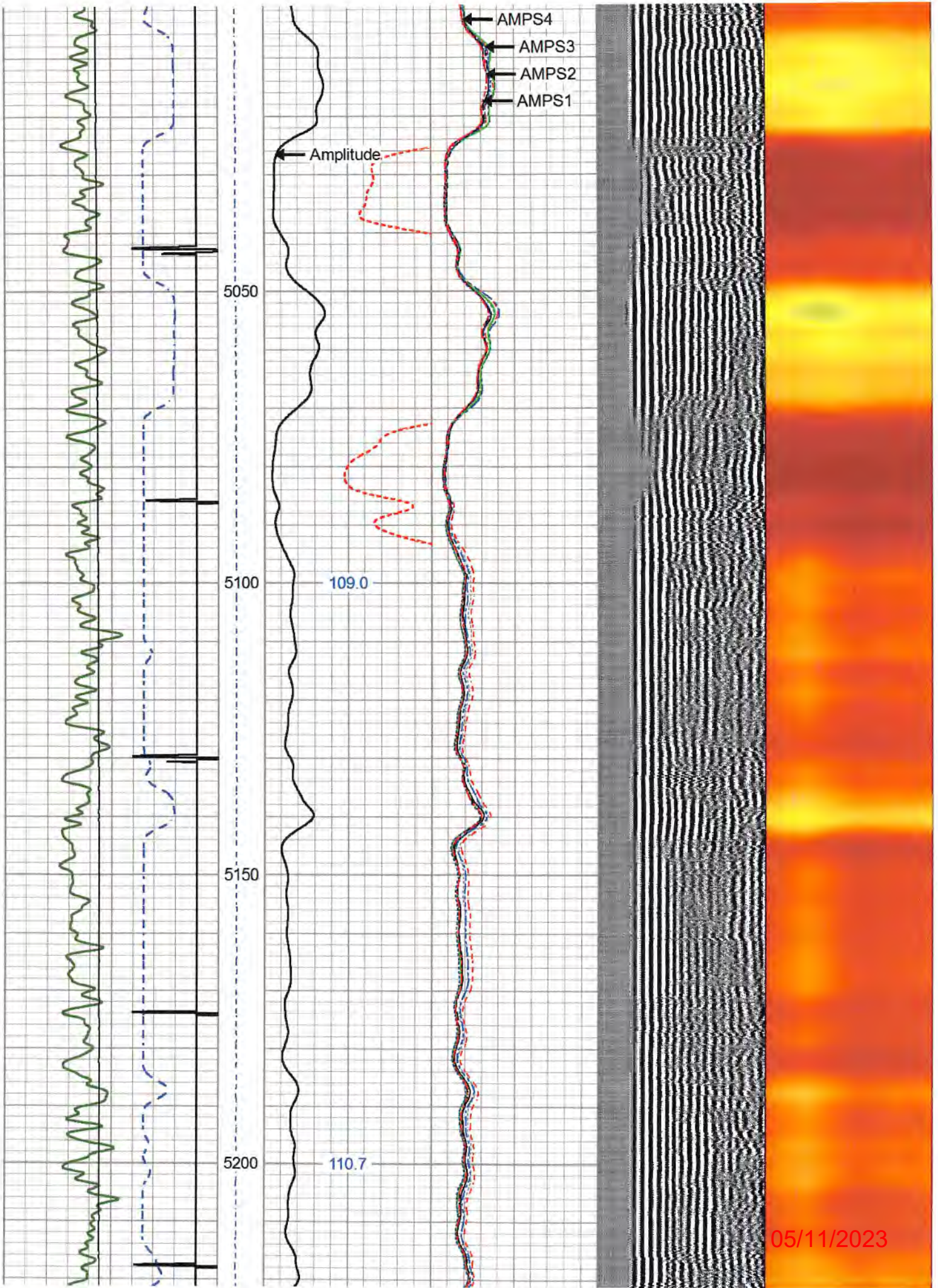


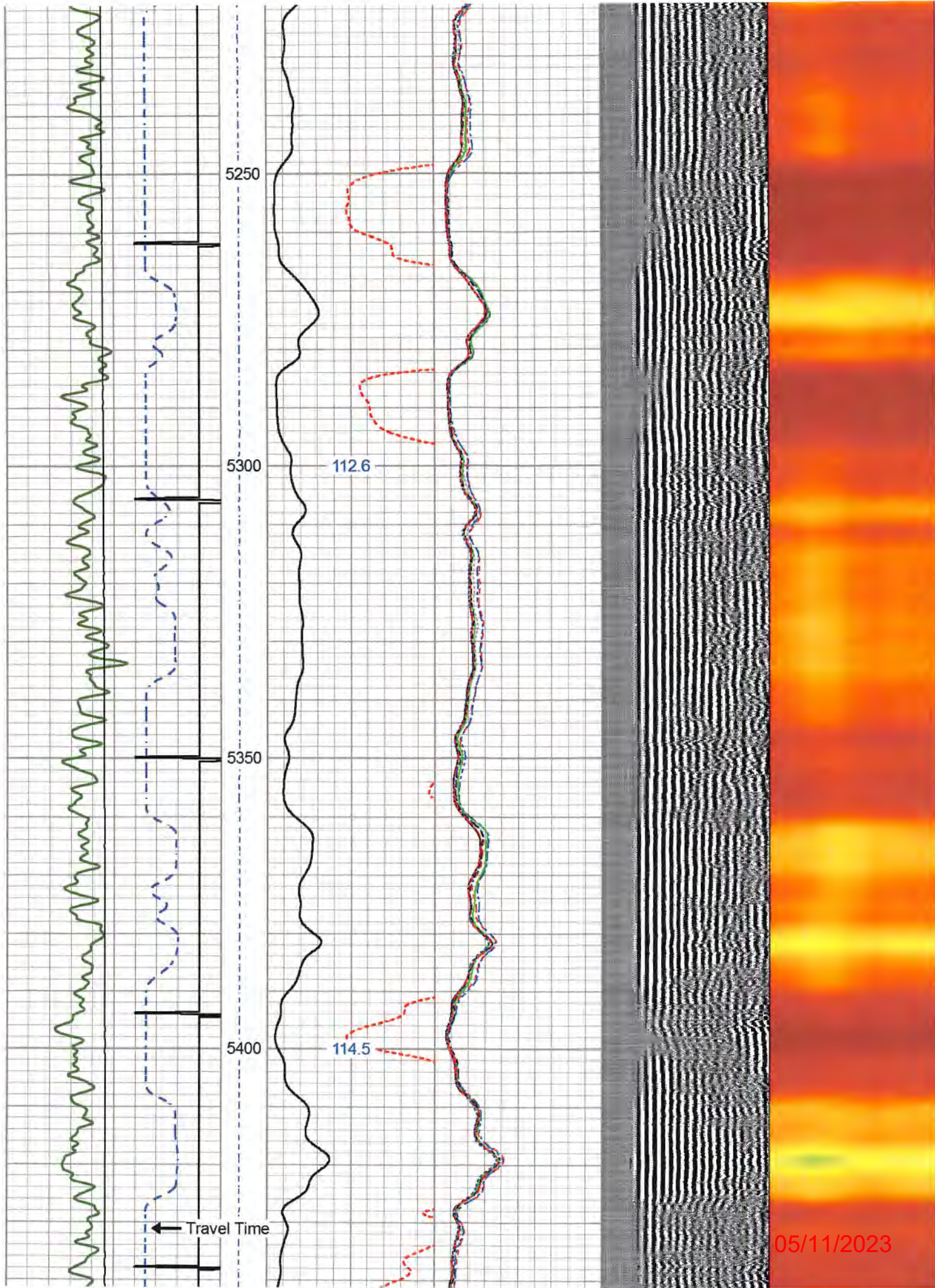
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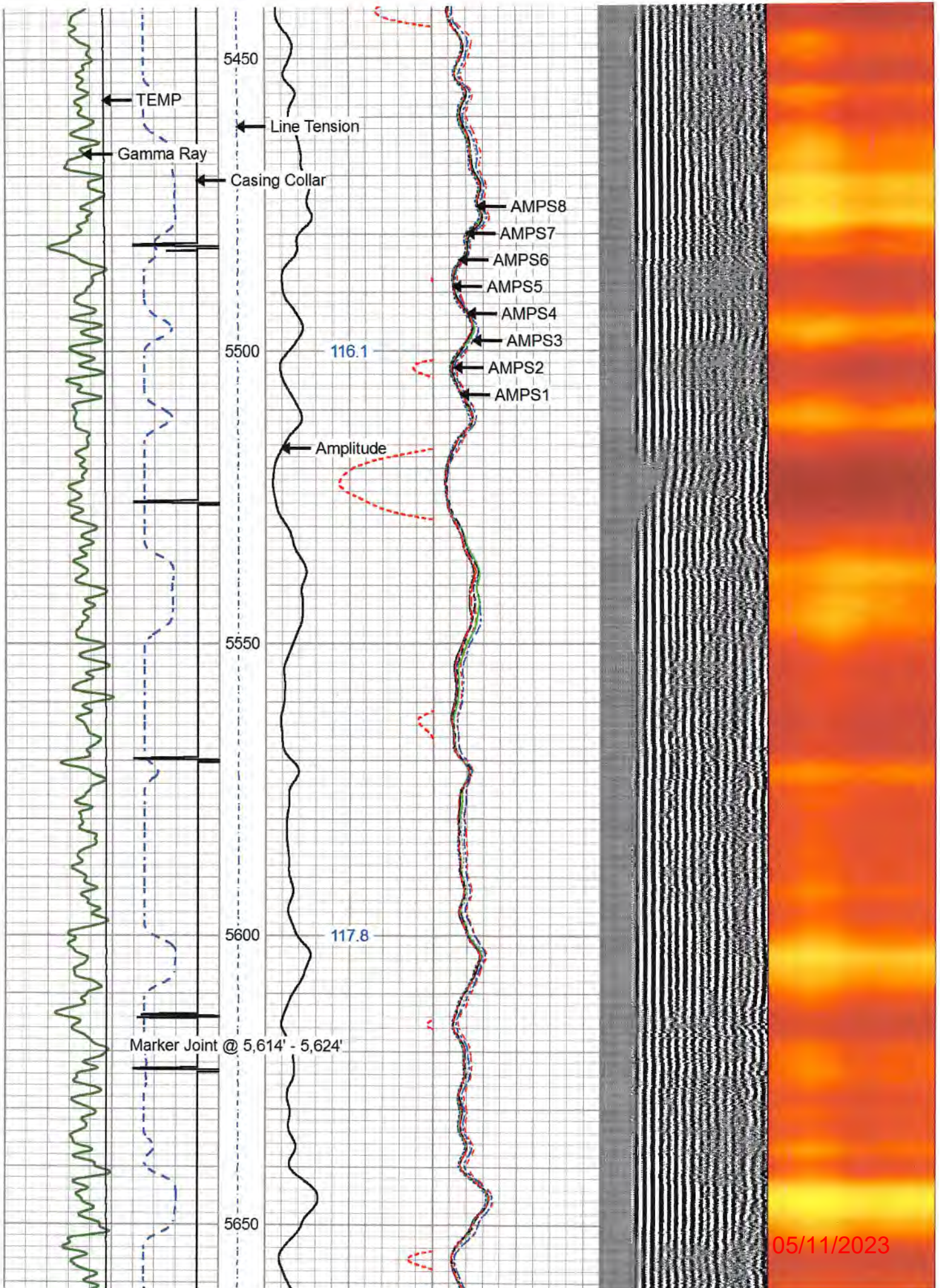


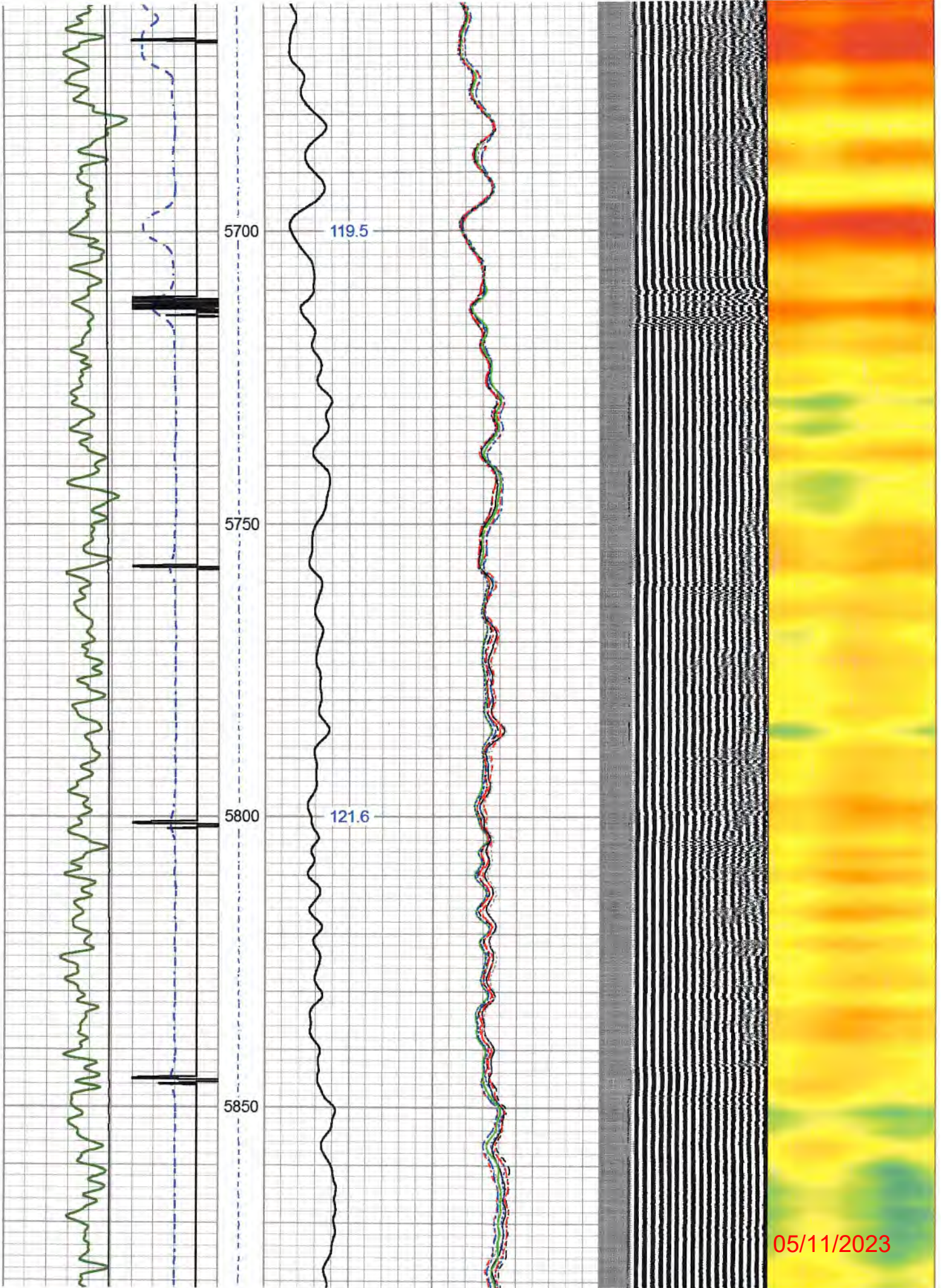




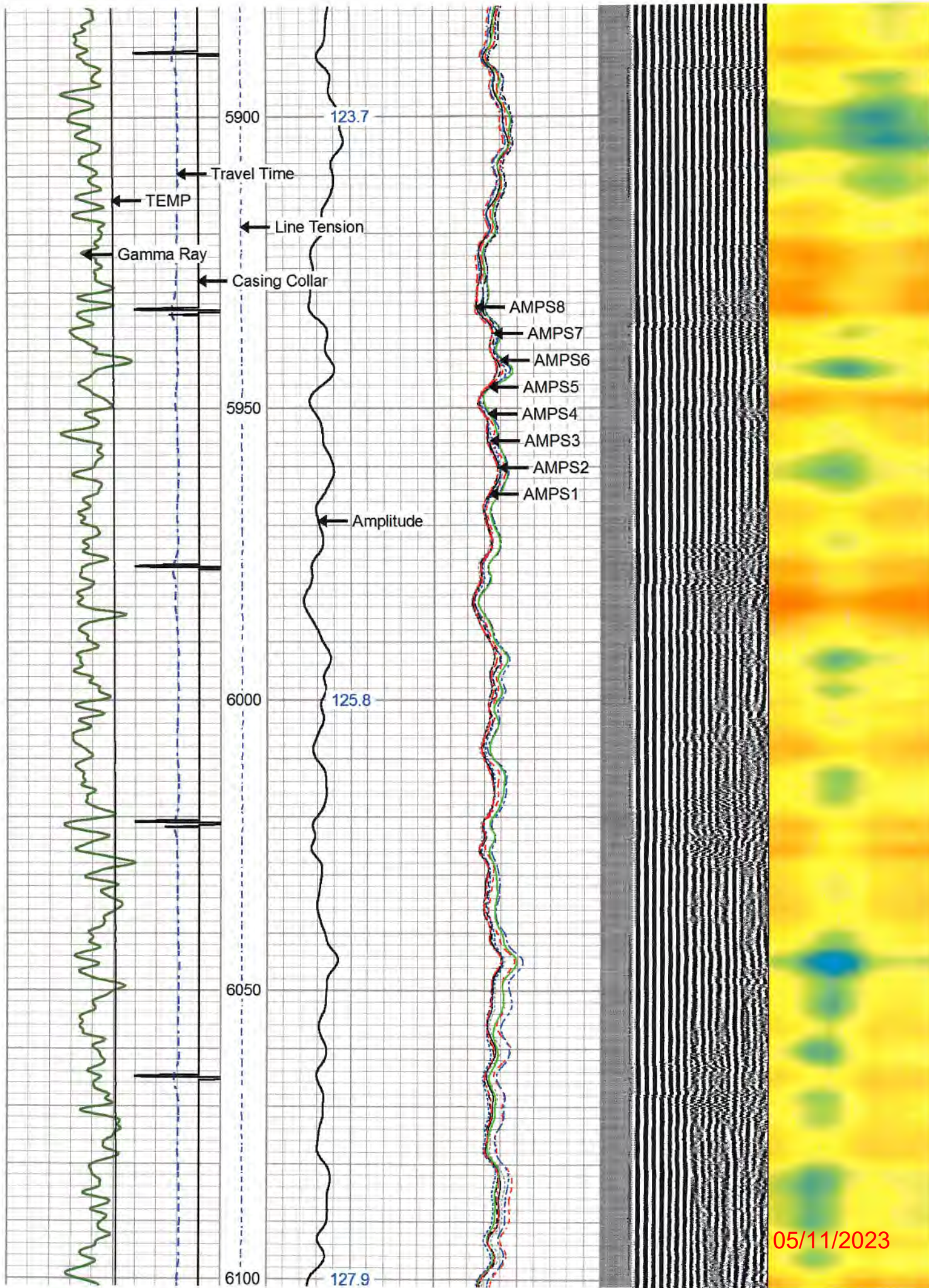


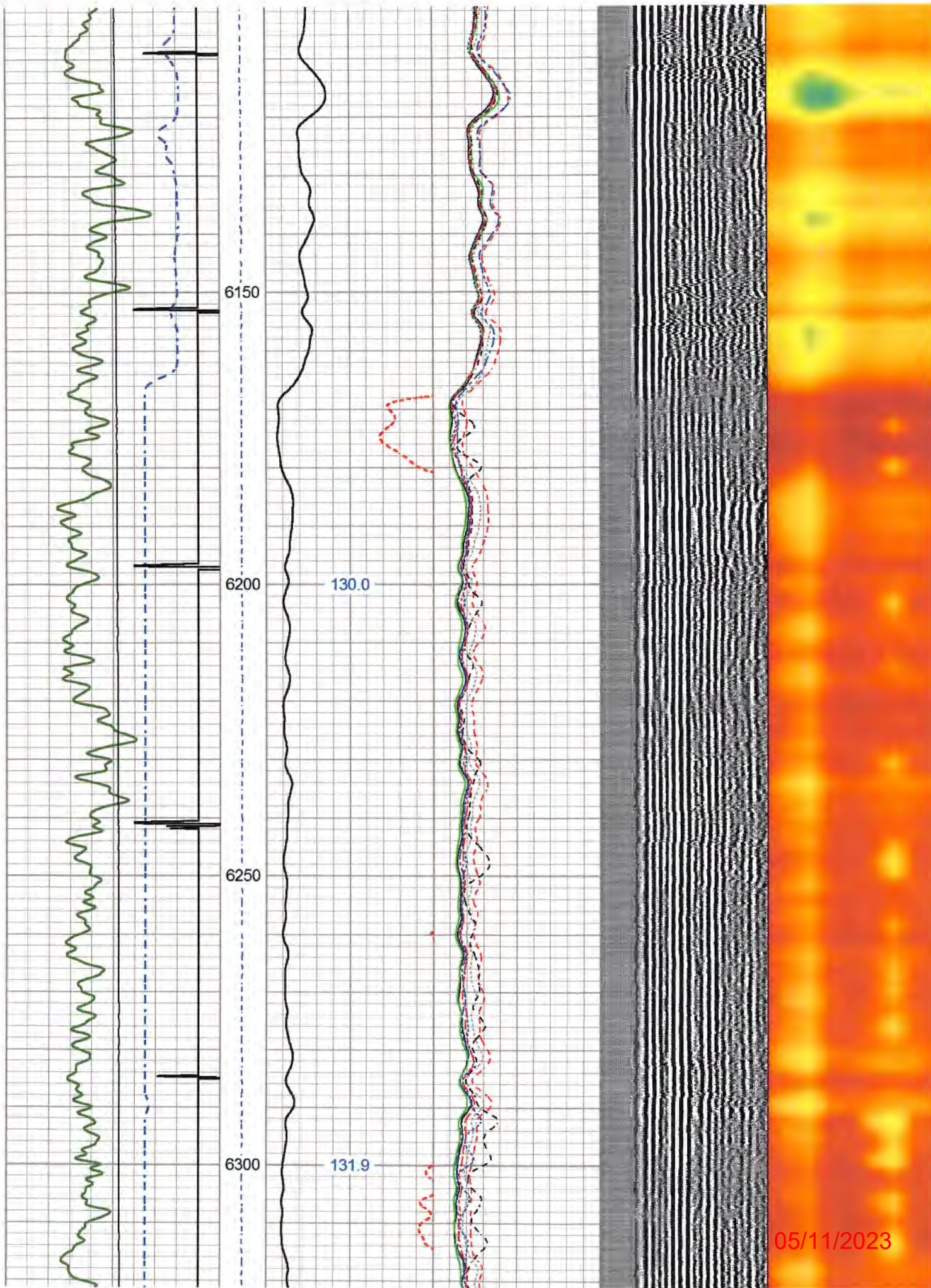




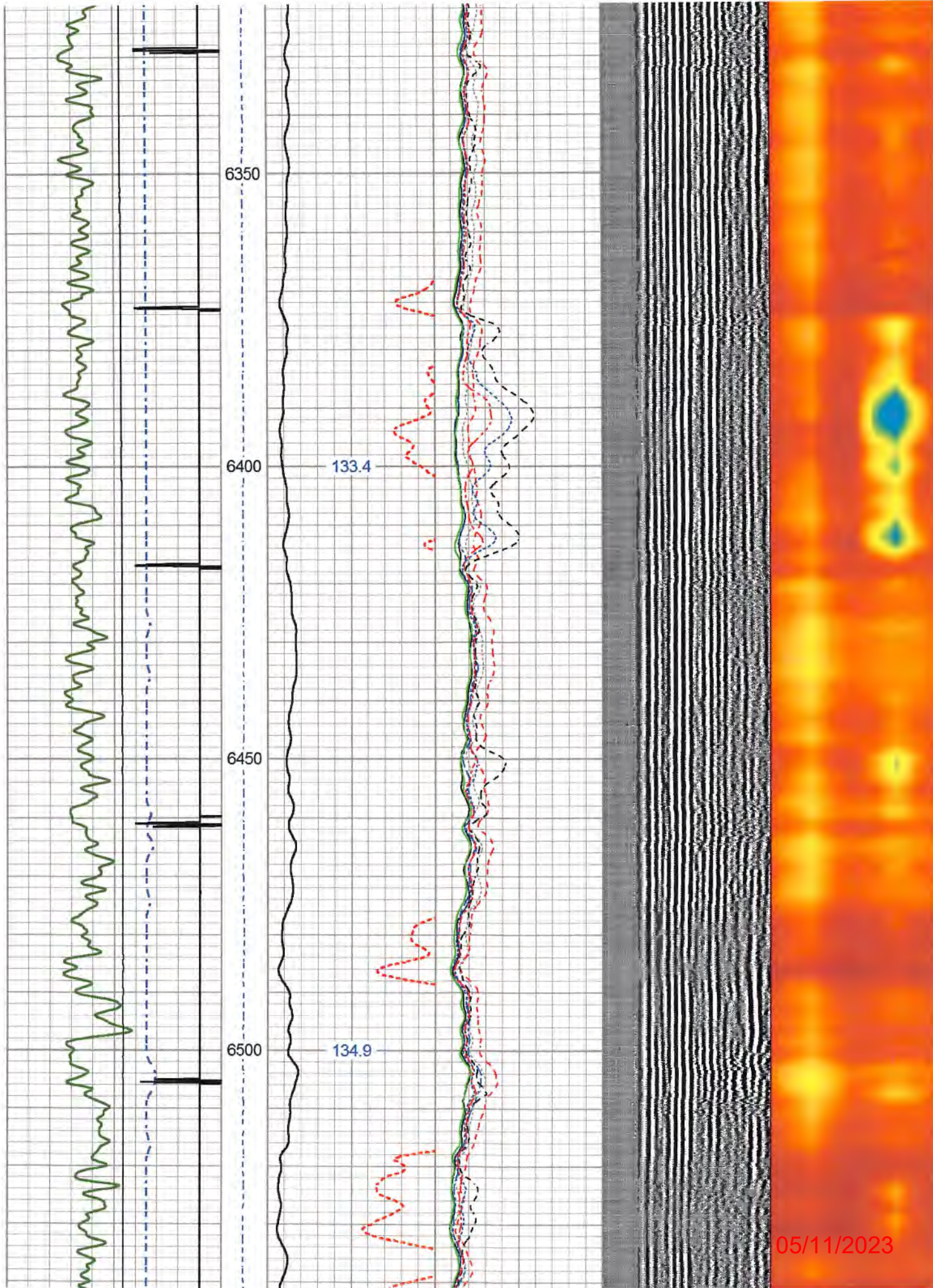


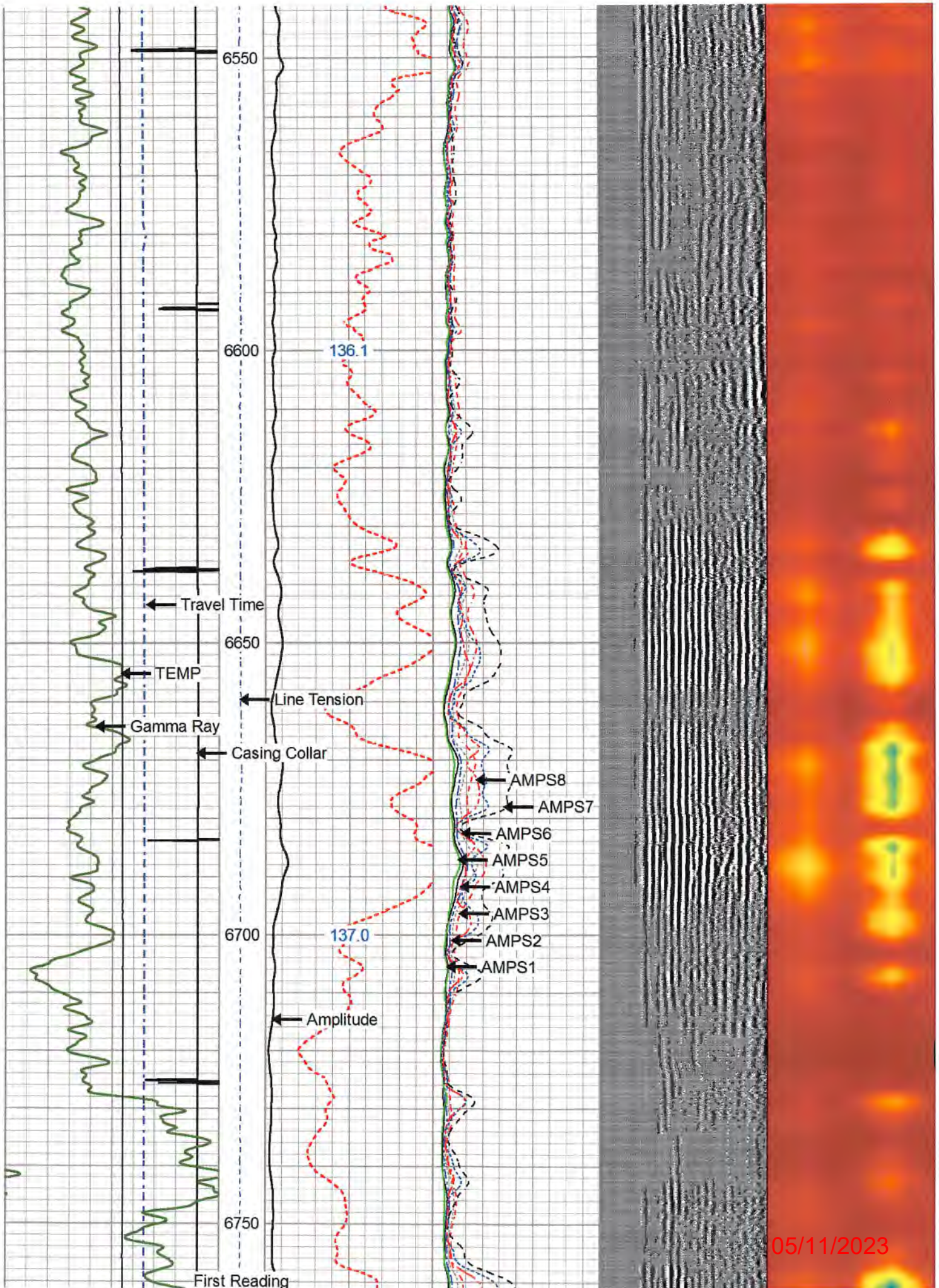
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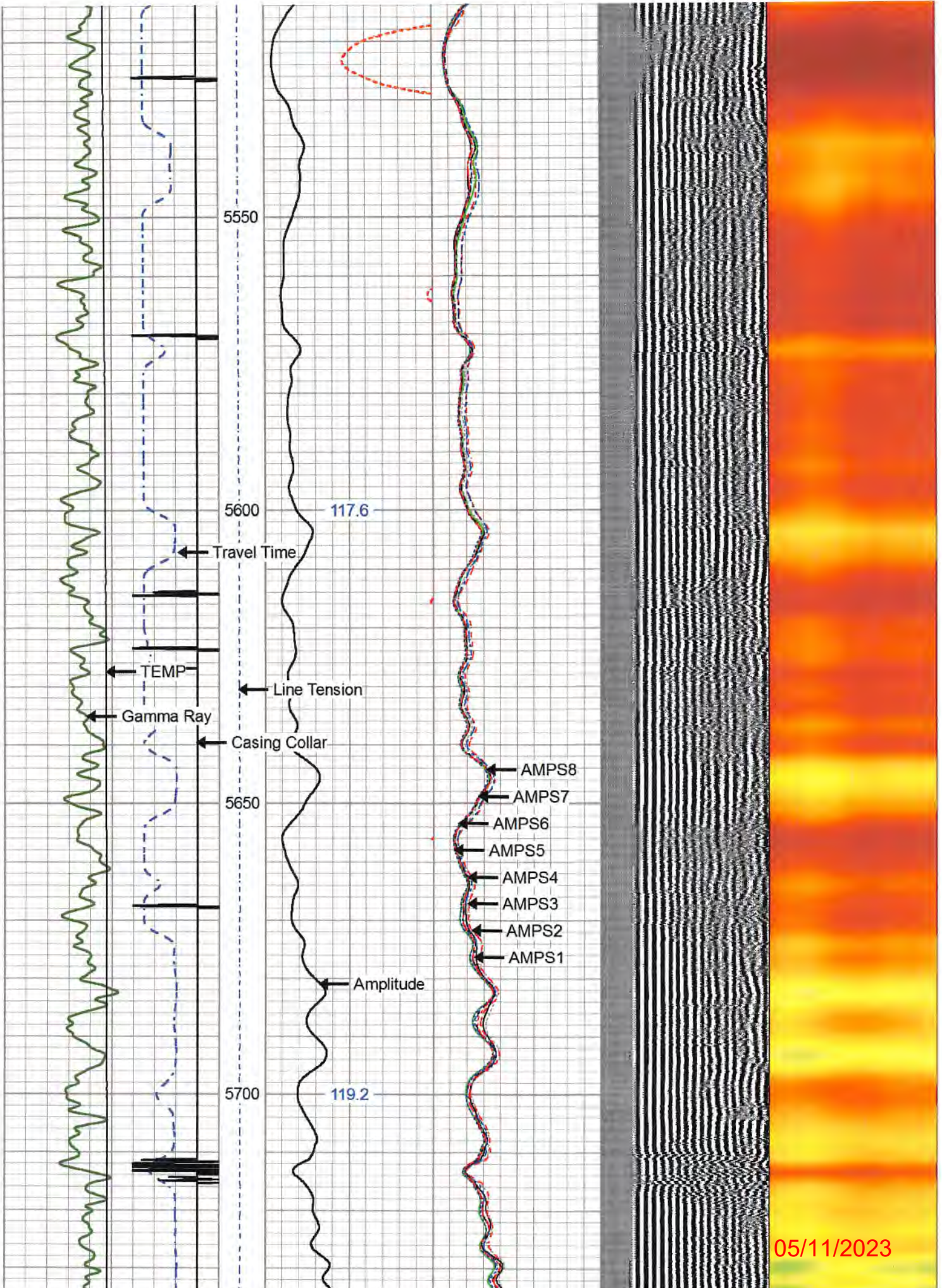


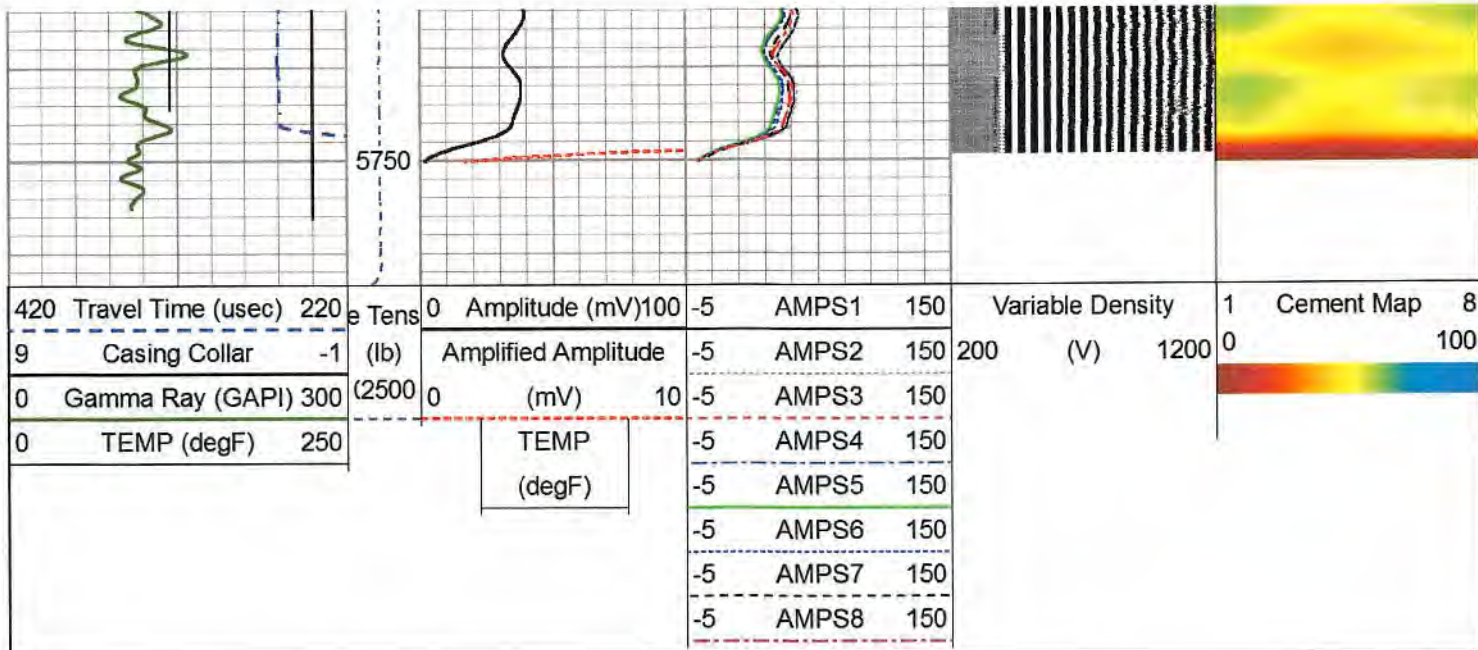


05/11/2023









Log Variables

DatabaseC:\ProgramData\Warrior\Data\47-095-02398_tamarind_unit1h_rcbl_03032018.db
Dataset field/well/run1/pass4/_vars_

Top - Bottom							
BHTEMP_Src	BOREID	BOTTEMP	CASEOD	CASETHCK	CASEWGHT	MAXAMPL	MINAMPL
TEMP	7.875	137	5.5	0.415	23	72	1
MINATTN	PERFS	PPT	SRFTEMP	TDEPTH			
0.8	0	260	30	6760			

Variable Description

BHTEMP_Src : BHTEMP Input Source Selector	MINAMPL : Minimum Amplitude
BOREID : Borehole I.D.	MINATTN : Minimum Attenuation
BOTTEMP : Bottom Hole Temperature	PERFS : Perforation Flag
CASEOD : Casing O.D.	PPT : Predicted Pipe Time
CASETHCK : Casing Thickness	SRFTEMP : Surface Temperature
CASEWGHT : Casing Weight	TDEPTH : Total Depth
MAXAMPL : Maximum Amplitude	

Calibration Report

Database File	47-095-02398_tamarind_unit1h_rcbl_03032018.db	
Dataset Pathname	pass4	
Dataset Creation	Sat Mar 03 10:51:00 2018	

Gamma Ray Calibration Report

Serial Number:	FW1408-38 Corr	
Tool Model:	GC_C3	
Performed:	Thu May 25 15:00:07 2017	
Calibrator Value:	1636.0	GAPI
Background Reading:	40.1	cps
Calibrator Reading:	1964.2	cps
Sensitivity:	0.8503	GAPI/cps

05/11/2023

Serial Number: FW1406-126
 Tool Model: RBTC3 Temp
 Calibration Casing Diameter: 5.500 in
 Calibration Depth: 329.767 ft

Master Calibration, performed Wed Feb 28 15:10:44 2018:

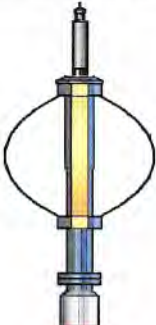
	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	-0.001	0.303	1.000	71.921	233.037	1.296
CAL	-0.001	0.459				
5'	-0.002	0.261	1.000	71.921	269.474	1.658
SUM						
S1	-0.004	0.304	0.000	100.000	325.015	1.226
S2	-0.002	0.324	0.000	100.000	306.140	0.751
S3	-0.002	0.332	0.000	100.000	299.196	0.628
S4	-0.005	0.326	0.000	100.000	301.776	1.507
S5	-0.003	0.303	0.000	100.000	326.050	1.130
S6	-0.005	0.285	0.000	100.000	344.317	1.732
S7	-0.010	0.278	0.000	100.000	346.517	3.562
S8	-0.006	0.285	0.000	100.000	342.747	2.222

Internal Reference Calibration, performed (Not Performed):

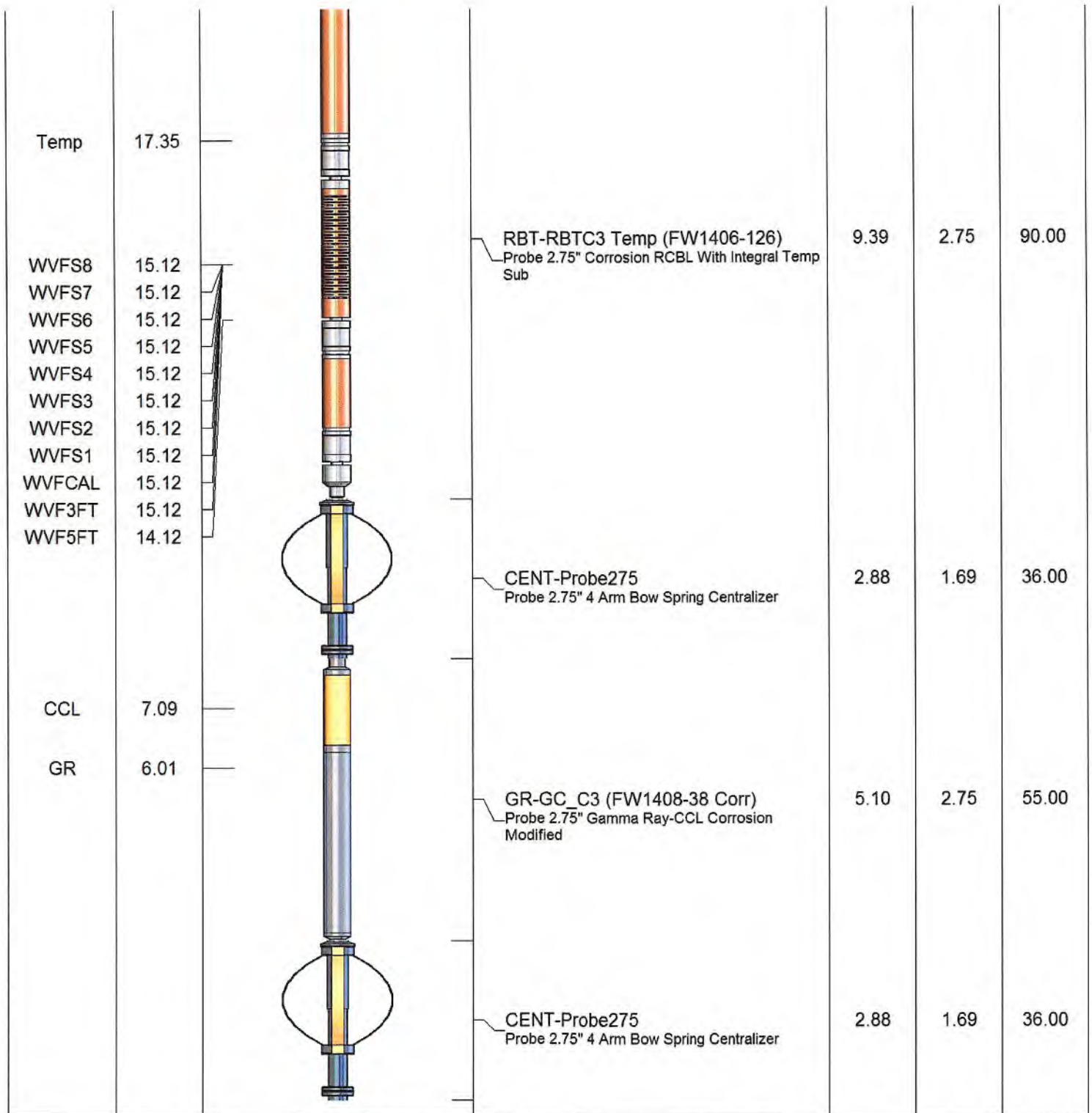
	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	-0.001	0.459	1.000	0.000

Air Zero Calibration, performed Thu Feb 15 08:40:59 2018:

	Raw (v)		Calibrated (v)		Results	
	Zero		Zero		Gain	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-STNDRD (GOI) Standard Cable Head	1.00	1.69	10.00
			CENT-Probe275 Probe 2.75" 4 Arm Bow Spring Centralizer	2.88	1.69	36.00

05/11/2023



Dataset: 47-095-02398_tamarind_unit1h_rcbl_03032018.db: field/well/run1/pass4
 Total length: 24.15 ft
 Total weight: 263.00 lb
 O.D.: 2.75 in

	Company	Antero Resources Corporation
	Well	Tamarind Unit 1H
	Field	Mountain
	County	Tyler
	State	West Virginia
	Country	USA

05/11/2023