



Composite Log

Company	Enduring Resources	Company	Enduring Resources
Well	West Lybrook unit 2309-24N WSW	Well	West Lybrook unit 2309-24N WSW
Field	West Lybrook	Field	West Lybrook
County	San Juan	County	San Juan
State	New Mexico	State	New Mexico
Location:	API # : SJ-4301 POD 3	Other Services	
Permanent Datum	Ground Level	Elevation	
Log Measured From	KB , 17 ft. above perm. datum	K.B.	6887.5' ft.
Drilling Measured From	Kelly Bushing	D.F.	6886.5' ft.
		G.L.	6870' ft.
Date	01/15/2019		
Run Number	One		
Depth Driller	7408'		
Depth Logger	7403'		
Bottom Logged Interval	7392'		
Top Log Interval	406'		
Casing Driller	13.375" @ 406'		@
Casing Logger	402'		@
Bit Size	8.750"		@
Type Fluid in Hole	Brine		
Density / Viscosity	9.4 / 39		
pl Fluid Loss	7 / 36		
Service of Sample	Mud Tank		
R @ Meas. Temp	.188 @ 75 ° F		@
R @ Meas. Temp	.141 @ 75 ° F		@
R @ Meas. Temp	.235 @ 75 ° F		@
Service of Rm / Rmc	Calculated		
R @ BHT	.097 @ 152 ° F		@
Time Circulation Stopped	01/15/2019 @ 02:00		
Time Logger on Bottom	01/15/2019 @ 10:00		
Minimum Recorded Temperature	159 ° F		
Equipment Number	11007		
Location	Midland		
Recorded By	J. Trasti / A. DelaGarza		
Witnessed By	A. Bridge		

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Equipment and Log Data

Service Order:

Gamma		Density		Neutron		Sonic		IAT/DLL	
Run No.	One	Run No.	One	Run No.	One	Run No.	One	Run No.	One
Serial No.	2700	Serial No.	0872	Serial No.	2541	Serial No.		Serial No.	110
O.D.	3.375 in.	Source No.	70997B	Source No.	59796G	Centralizers		Standoffs	@
		O.D.	4.5 in.	O.D.	3.375 in.	O.D.	3.375 in.	O.D.	3.875 in.

Logging Pass Data

General		Gamma		Density		Neutron		Sonic		IAT/DLL	
		Scales		Scales		Scales		Scales		Scales	
Run	Depths	Left	Right	Left	Right	Matrix	Left	Right	Matrix	Left	Right
One	0 7408	0	150	0.3	-0.1	2.71	0.3	-0.1	2.71		

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

Tools ran as per tool sketch
 CNL ran eccentralized using bowspring
 Annular Volume calculated using 7 in casing
 Chlorides reported at 2900 PPM
 10 in IAT curve affected by Chlorides

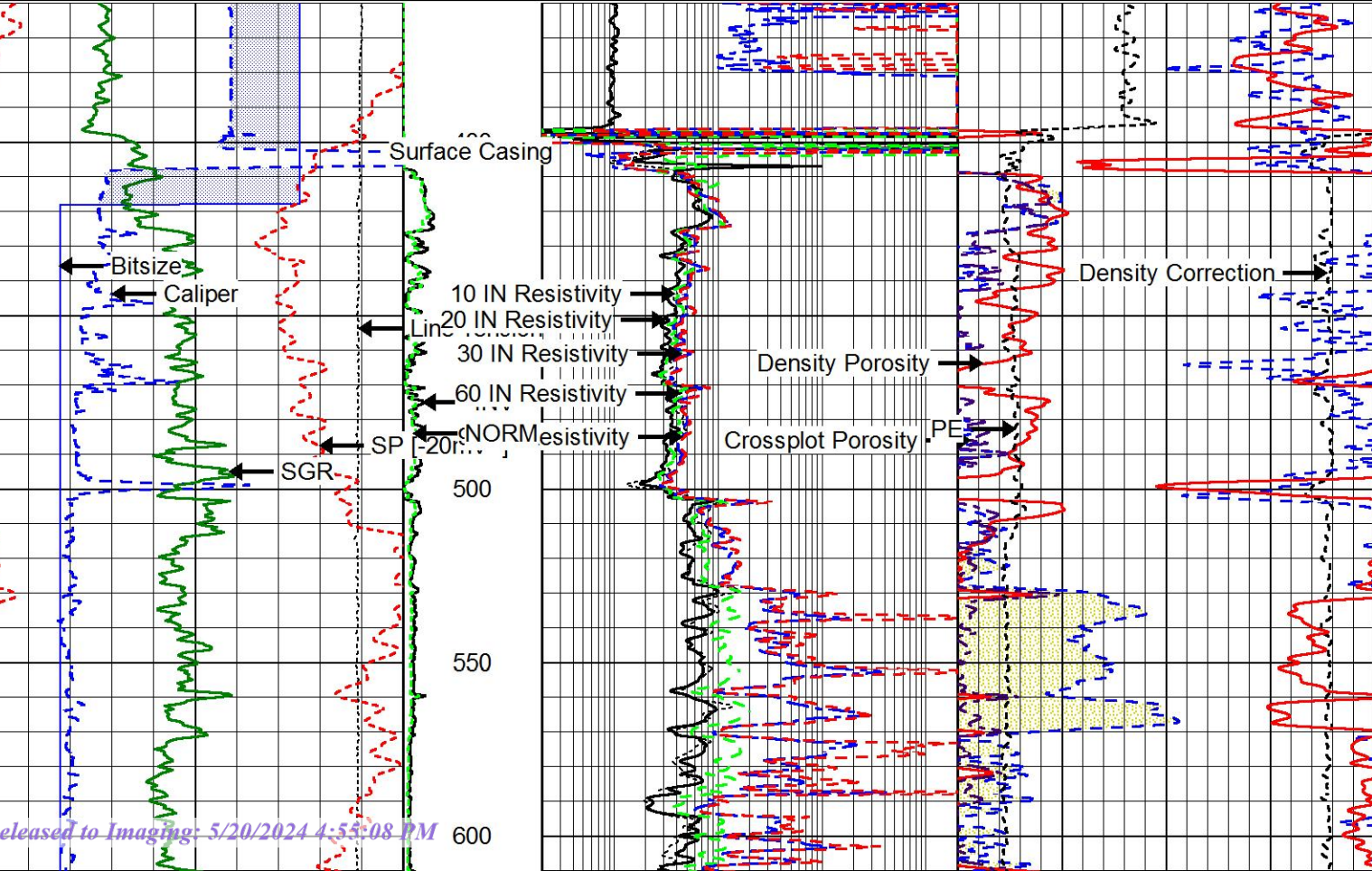
YOUR CREW TODAY: Jeremy Trasti, Alejandro de la Garza, Thomas Melson, Kindle Burket
THANK YOU FOR CHOOSING ALLIED WIRELINE. Midland, TX. (432) 897-1528.

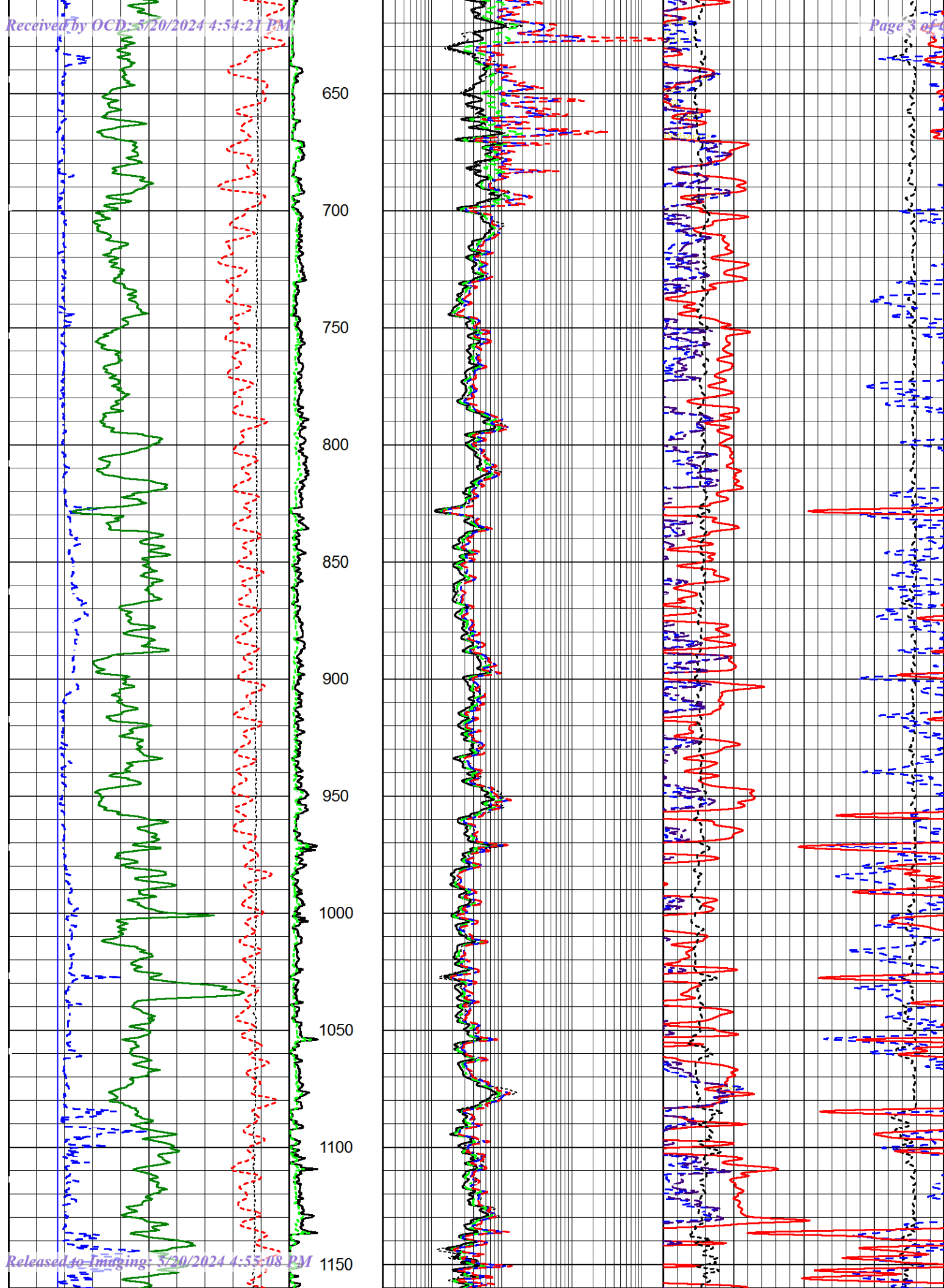


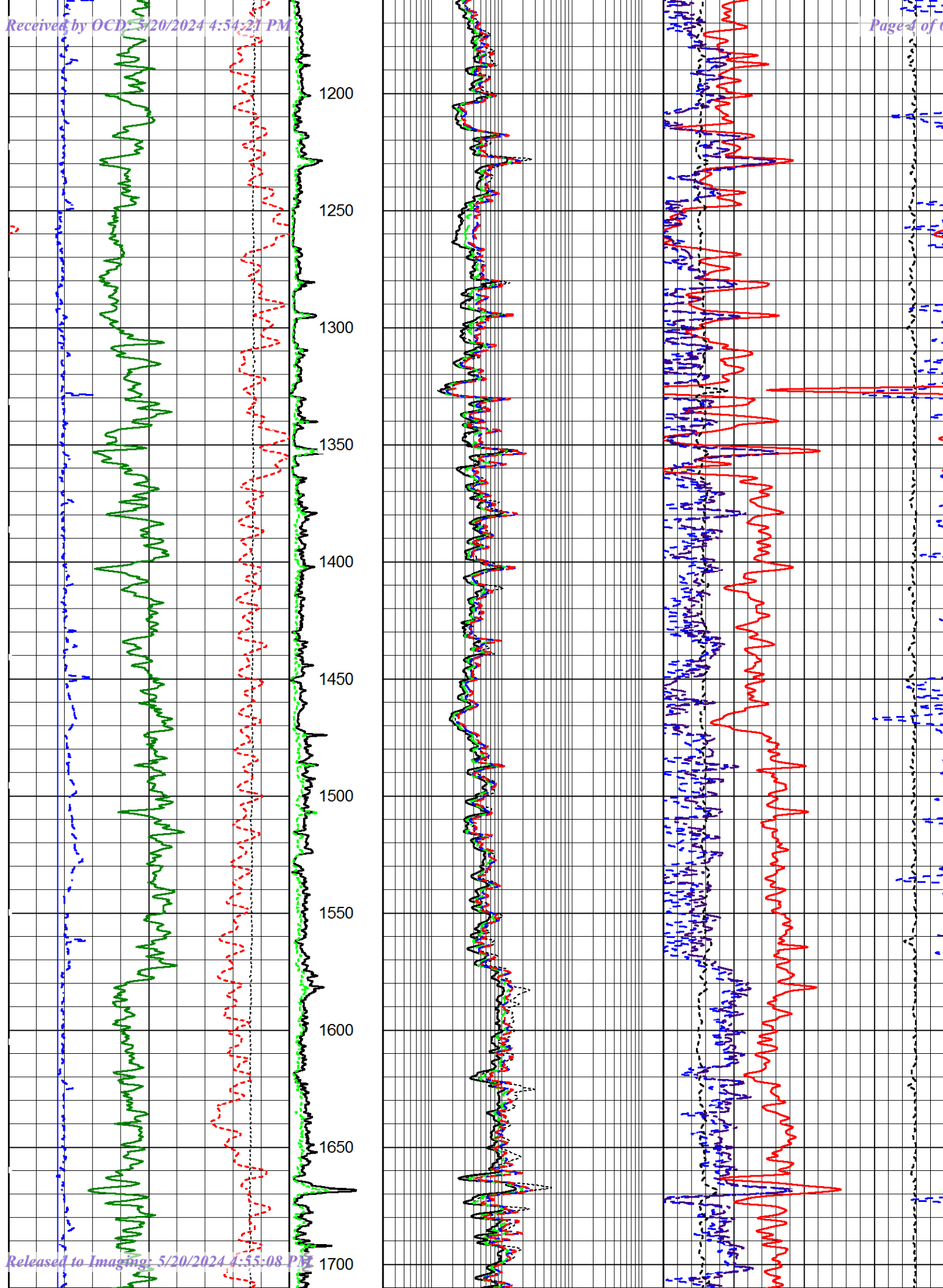
Main Pass

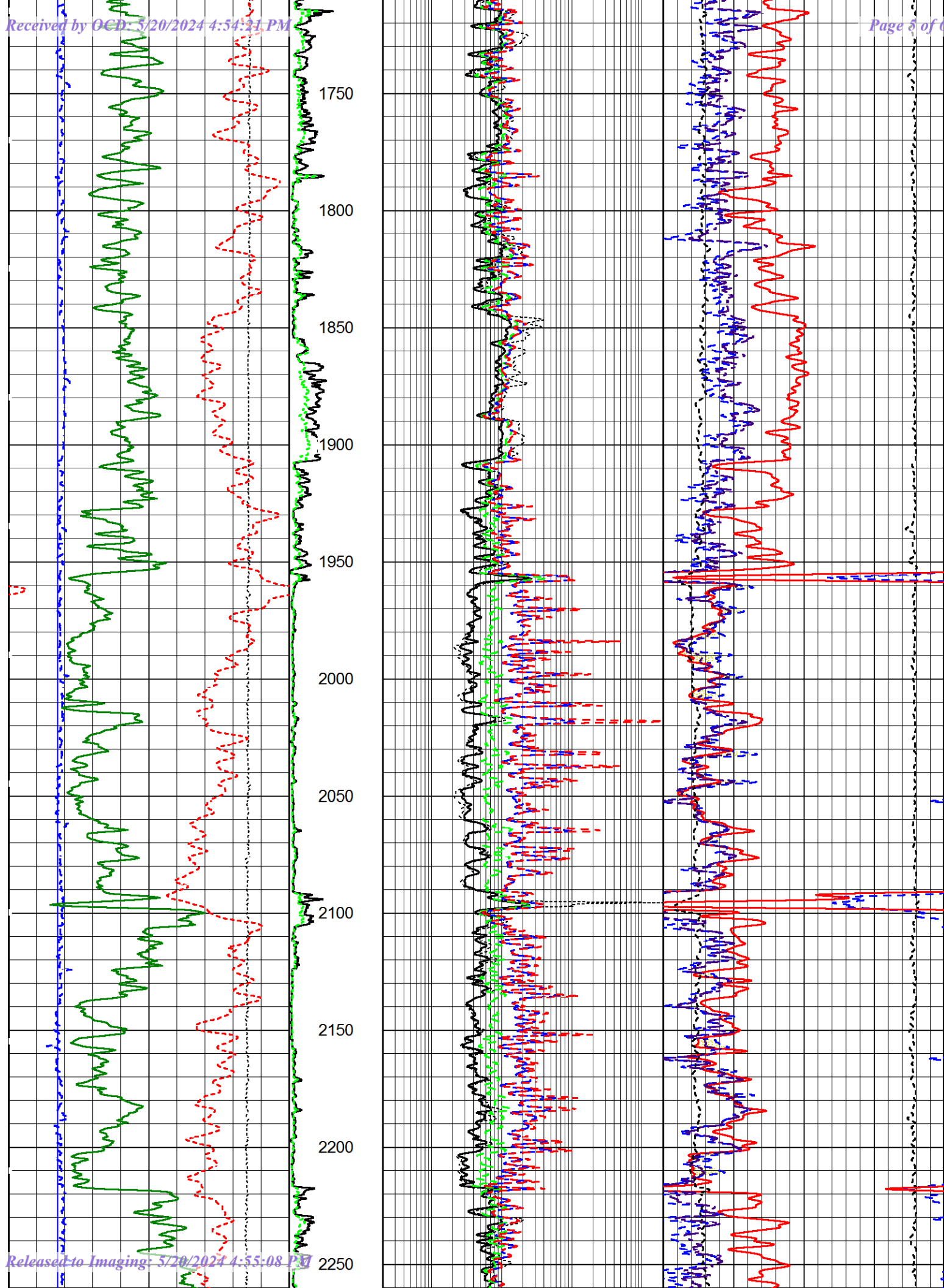
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Presentation Format 3com_iat
Dataset Creation Tue Jan 15 15:23:37 2019
Charted by Depth in Feet scaled 1:600

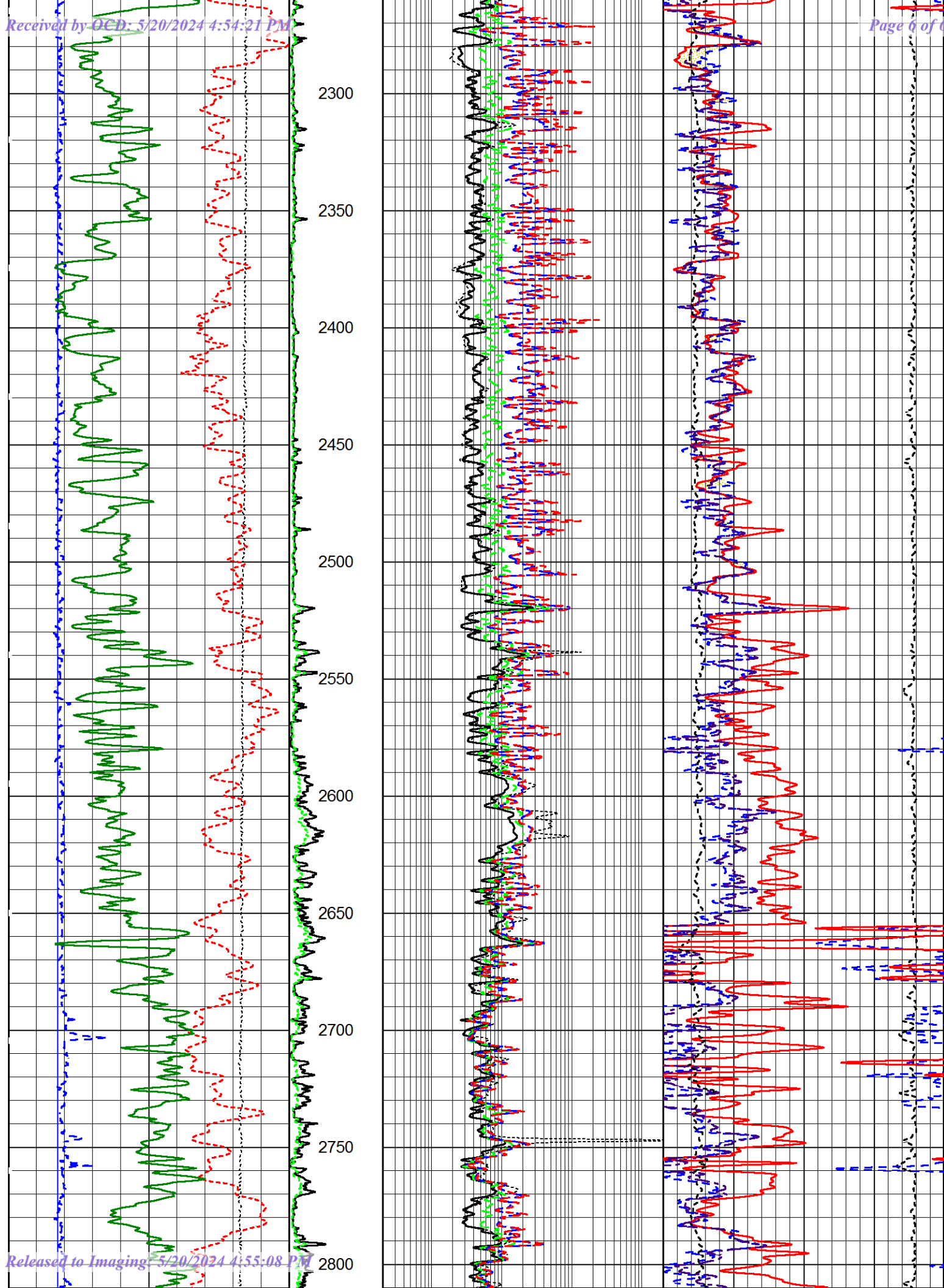
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7	Caliper (in)	17	(Ohm-m)	0.2	20 IN Resistivity (Ohm-m)	2000	0.3 (Porosity Decimal Fraction) -0.1
	SP [-20mV+]	0	20	0.2	30 IN Resistivity (Ohm-m)	2000	Density Porosity
0	SGR (GAPI)	200	NORM	0.2	60 IN Resistivity (Ohm-m)	2000	0.3 (Porosity Decimal Fraction) -0.1
	Line Tension		(Ohm-m)	0.2	90 IN Resistivity (Ohm-m)	2000	Crossplot Porosity
	5000 (lb)	0	0				0.3 (Porosity Decimal Fraction) -0.1
							0 PE 10 Density Correction
							0.8 (g/cc) -0.2

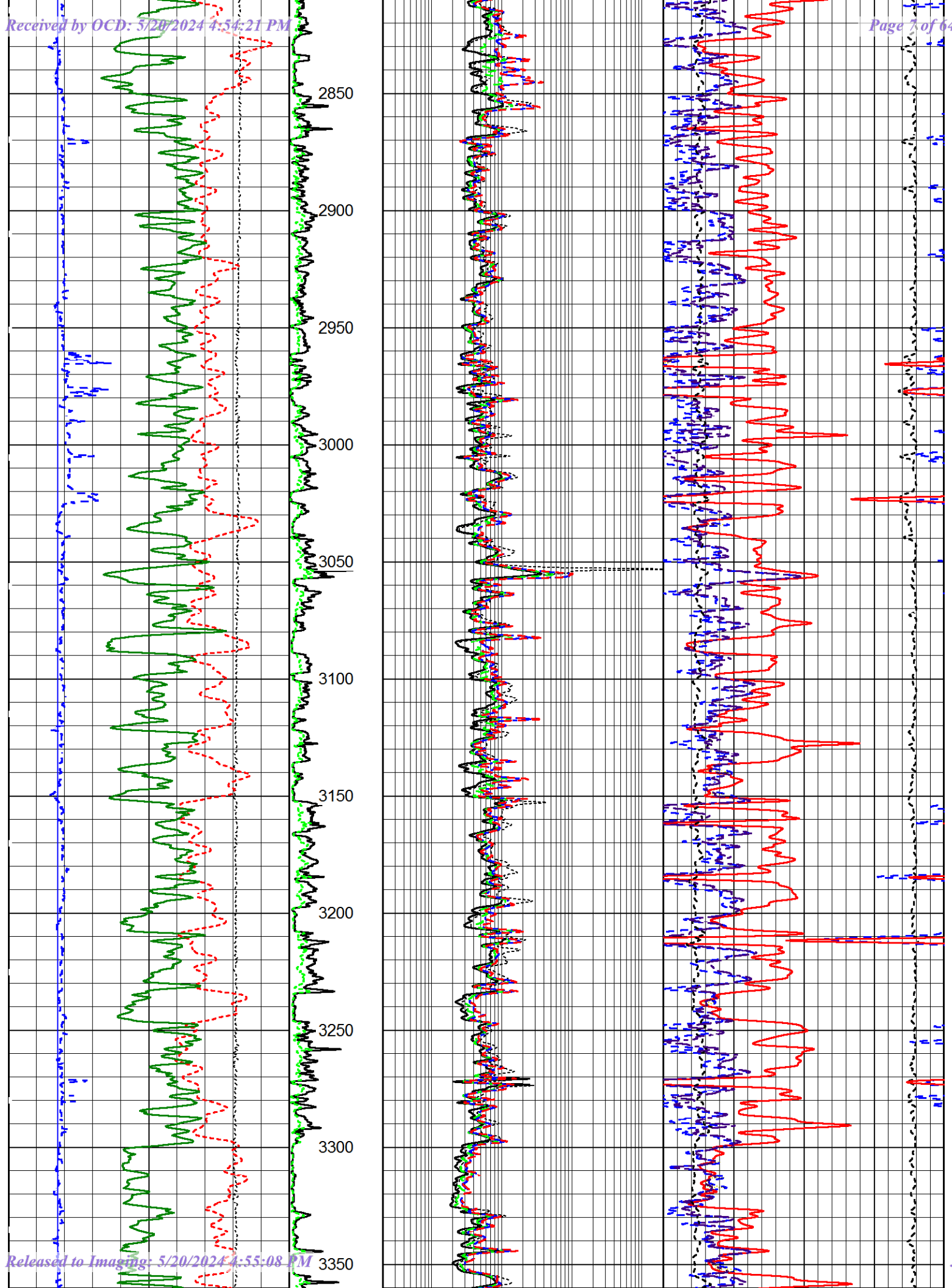


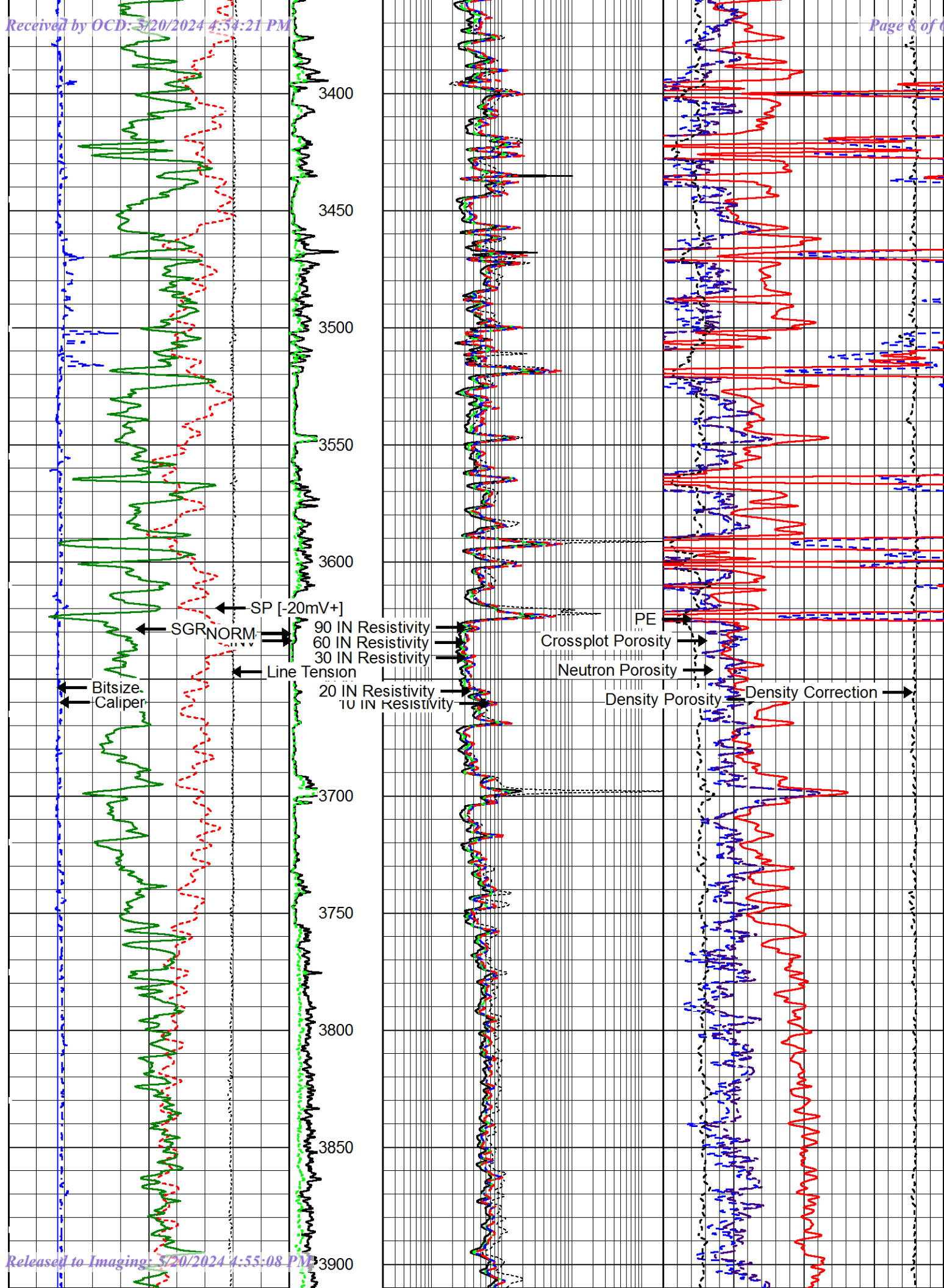


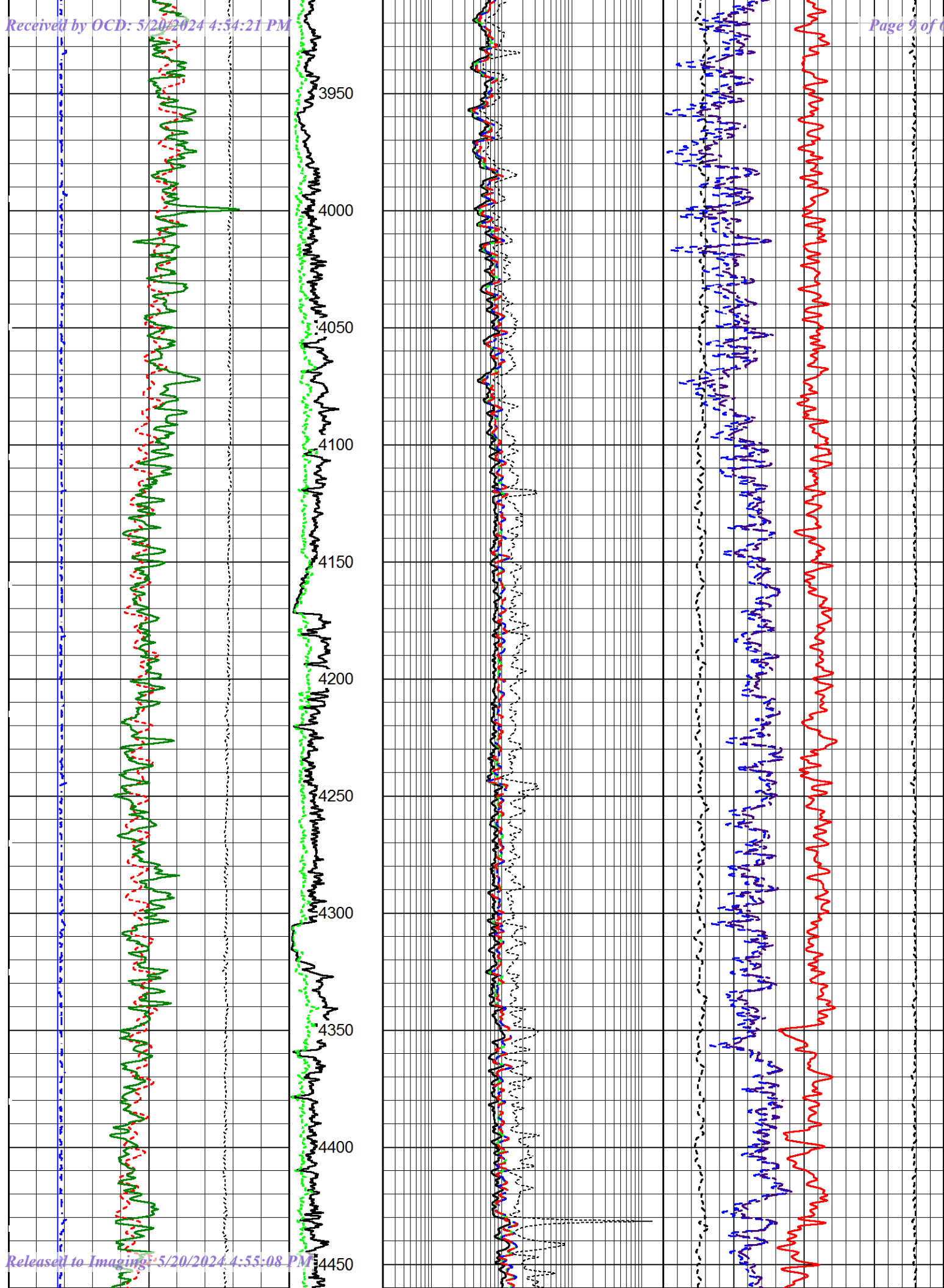


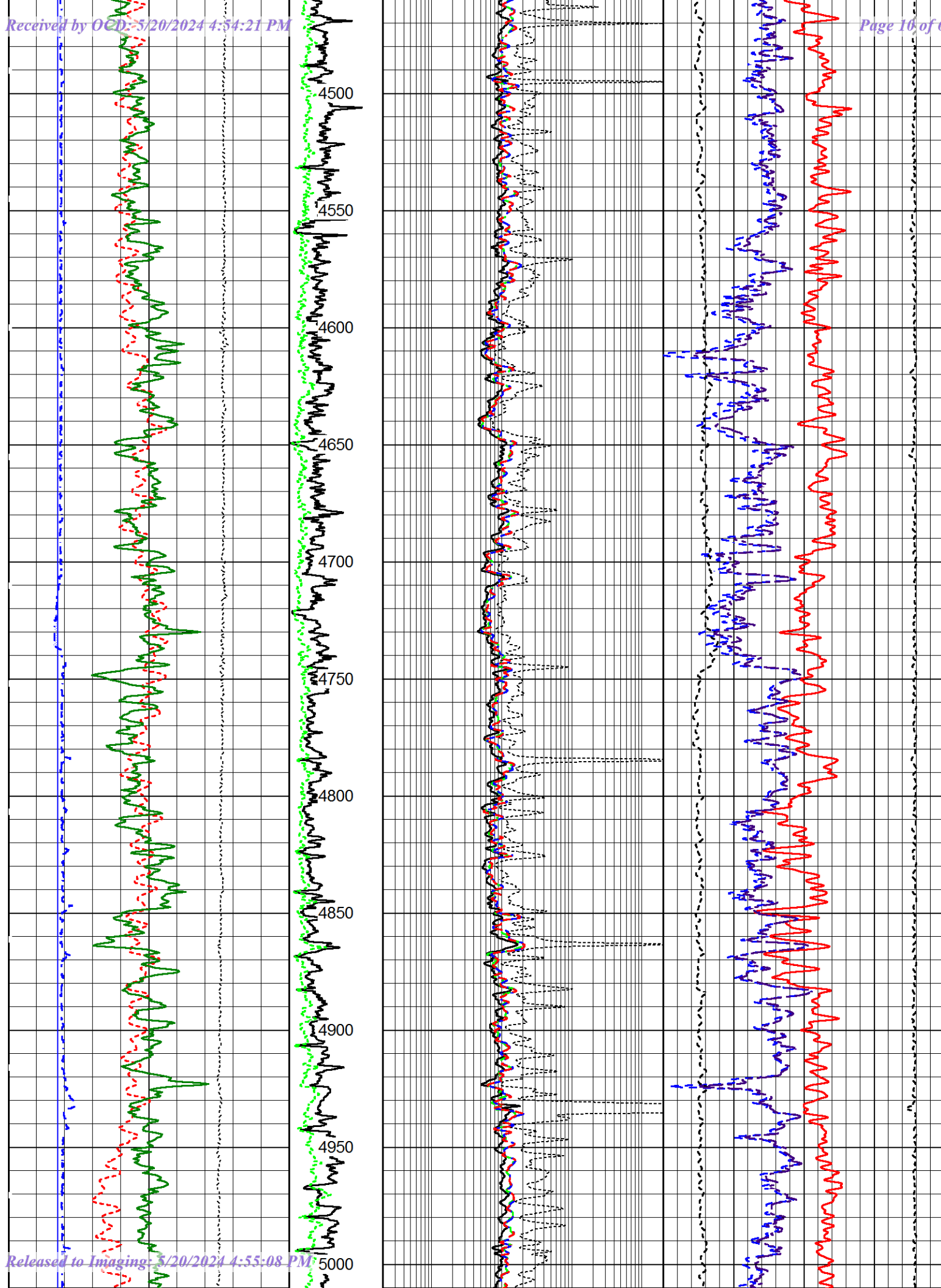


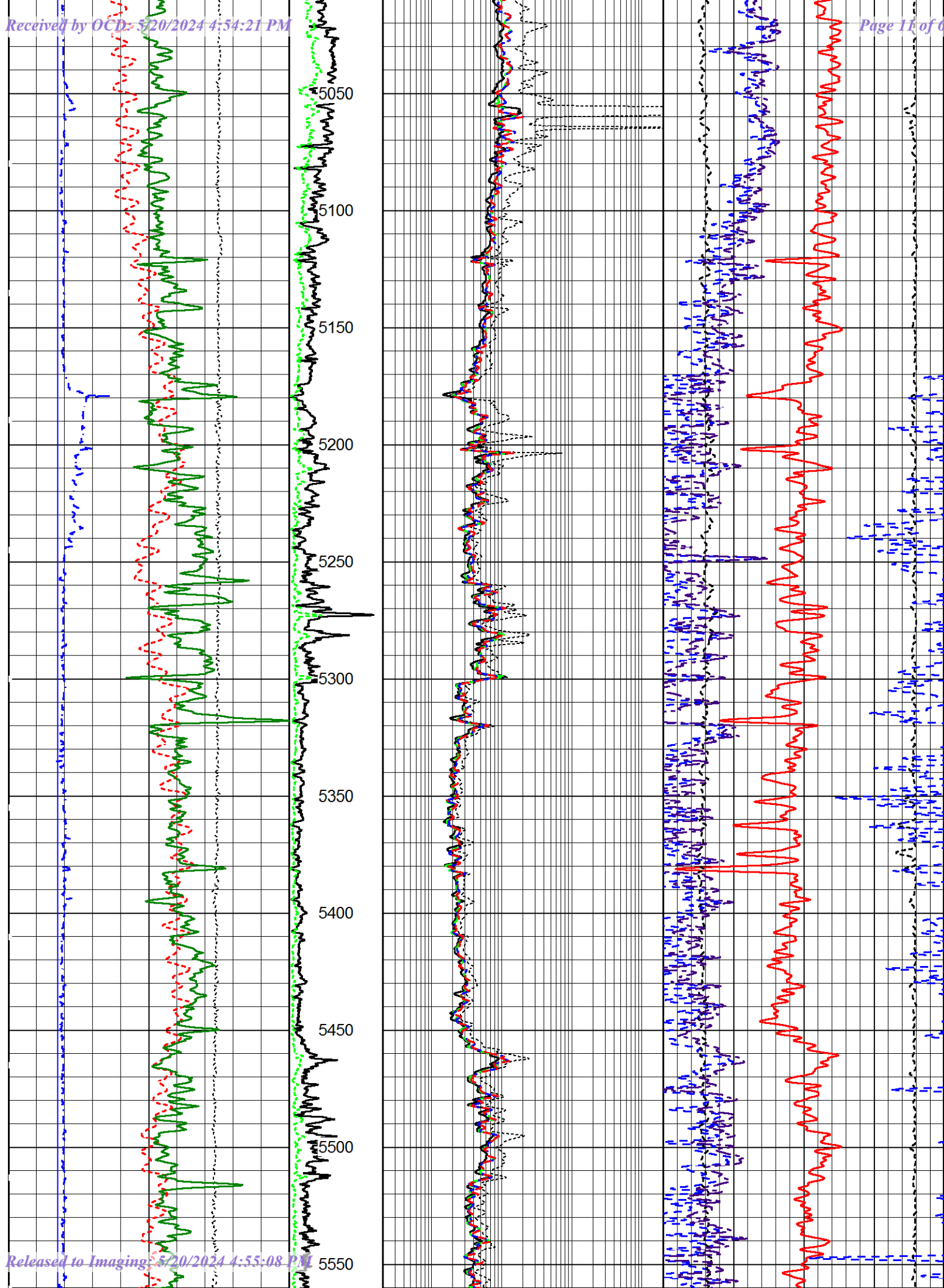


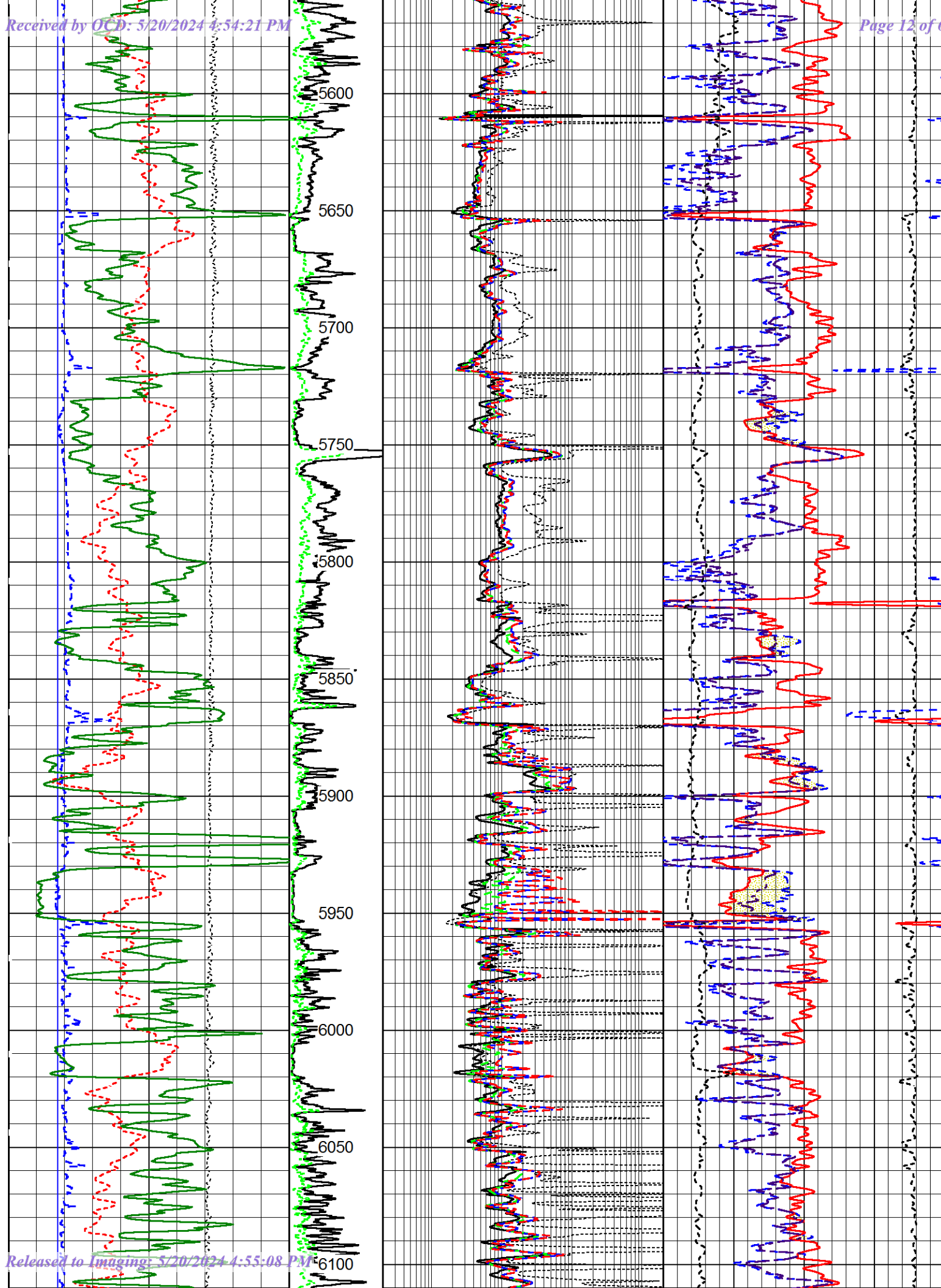


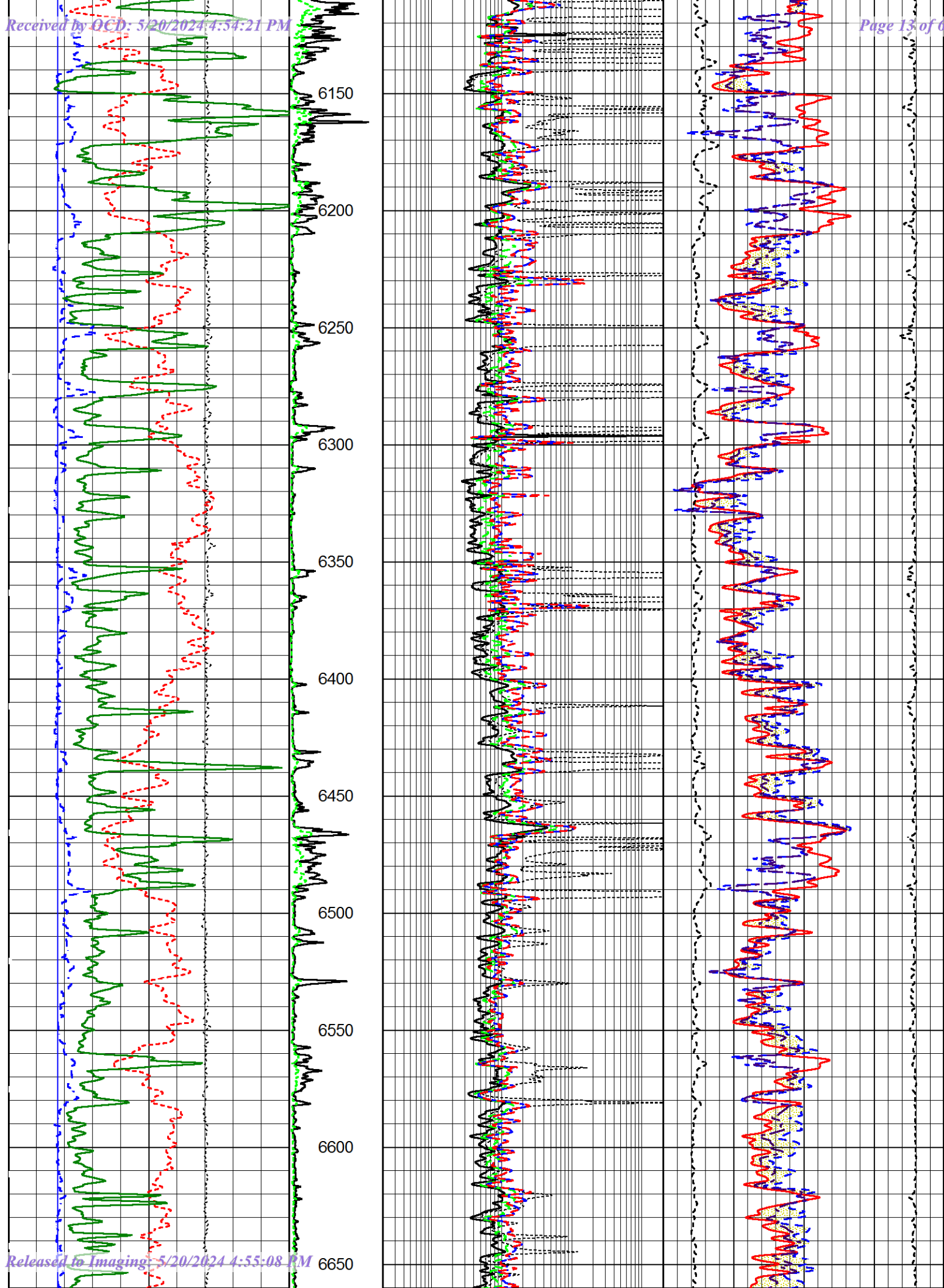


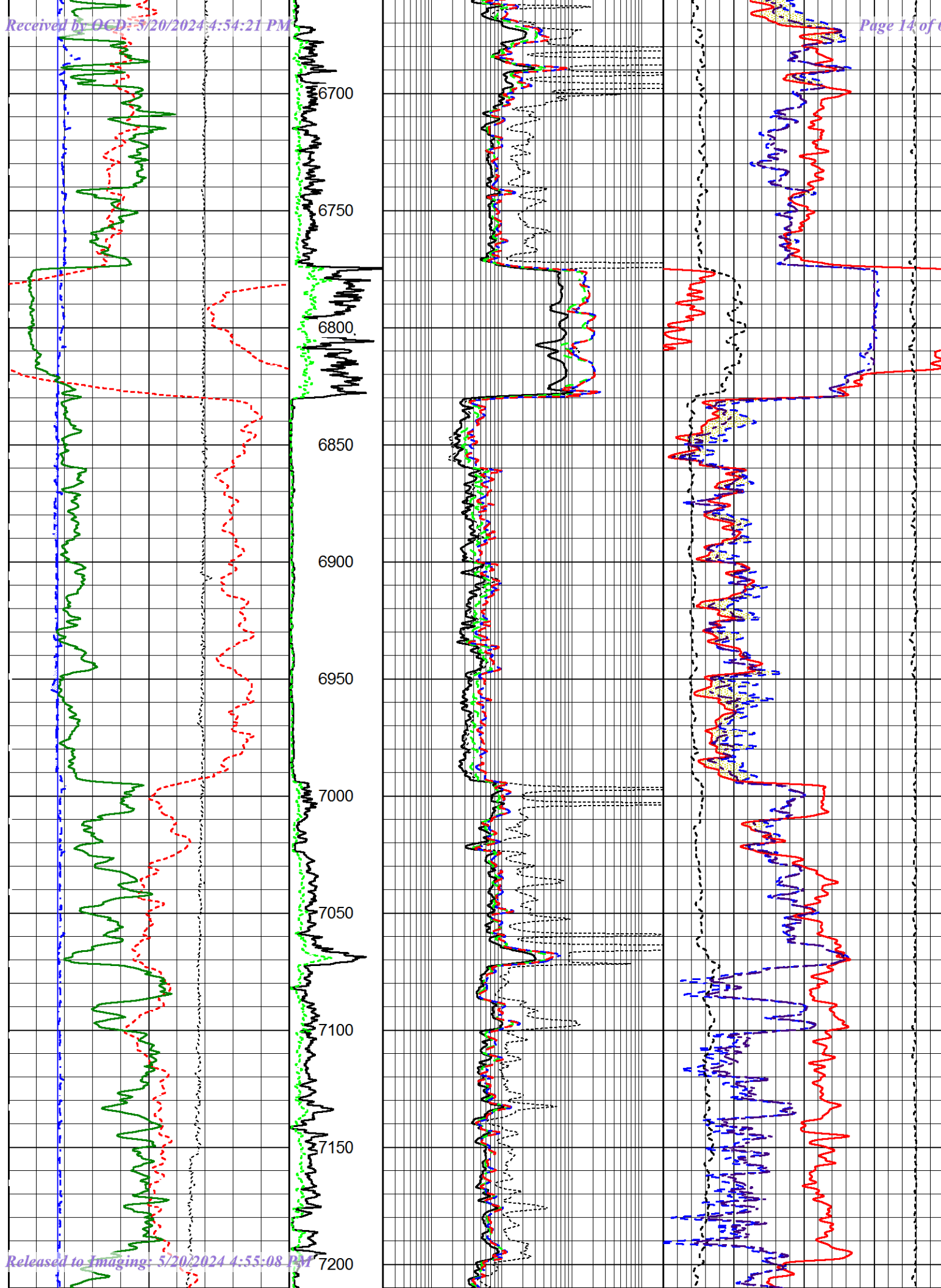


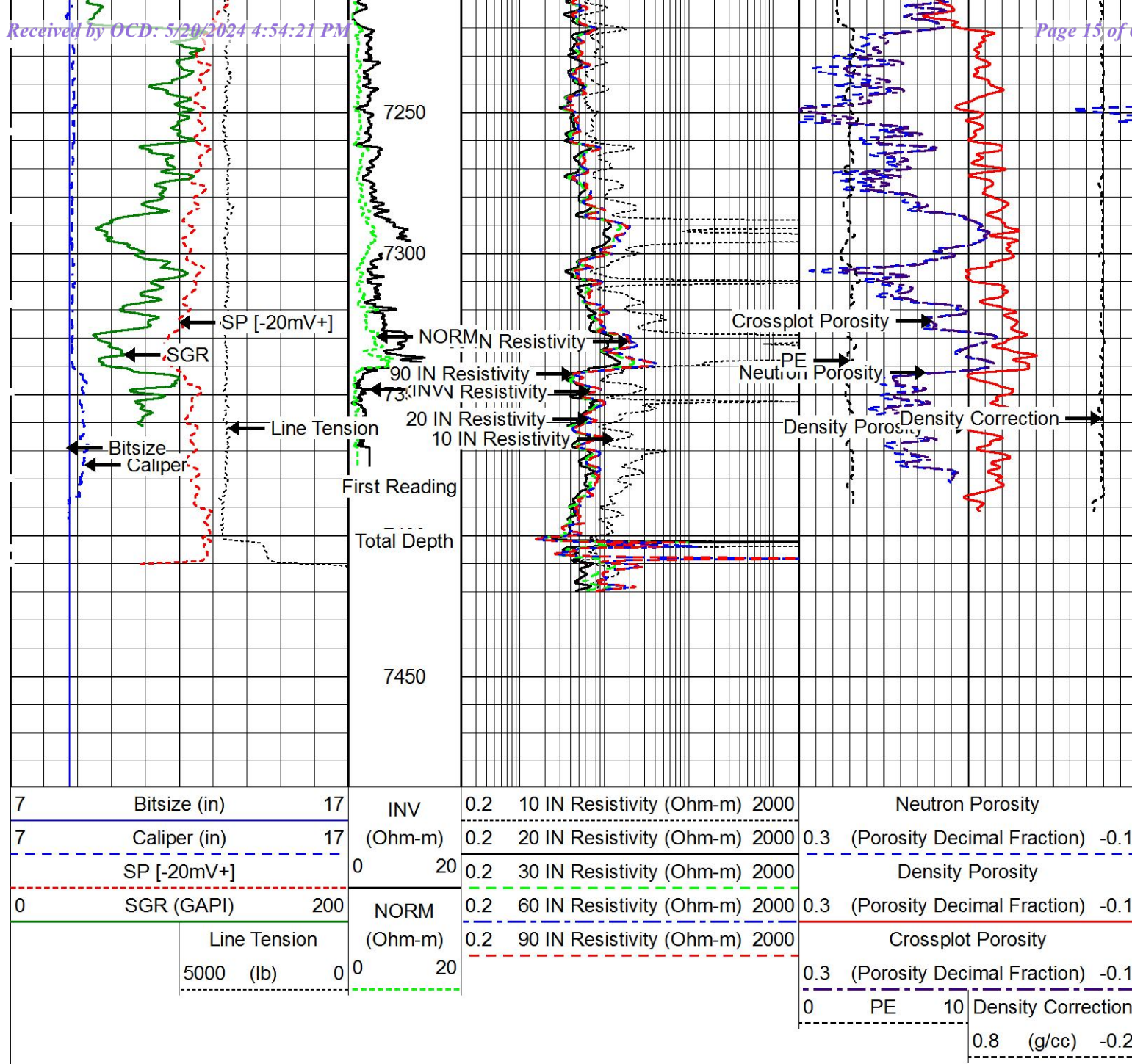












Main Pass

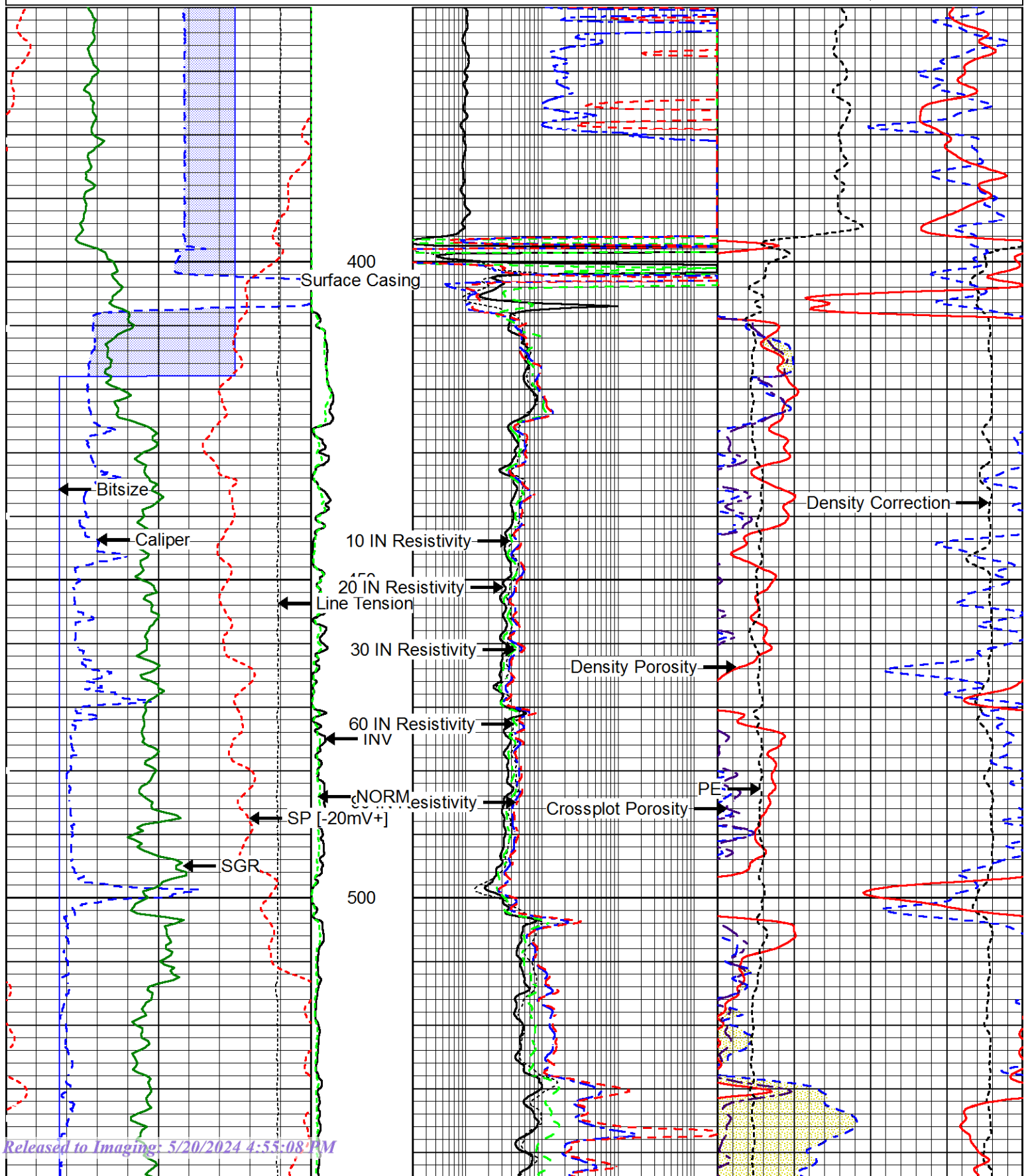


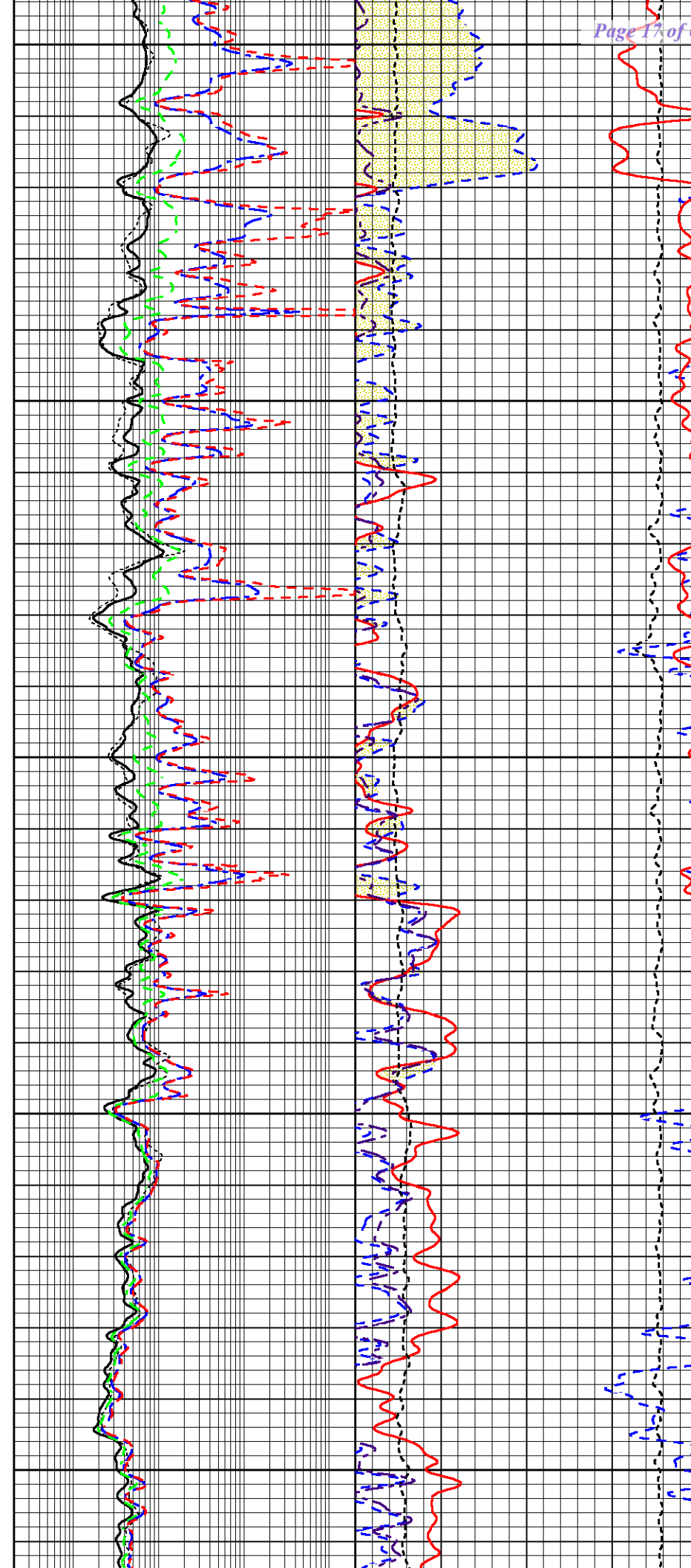
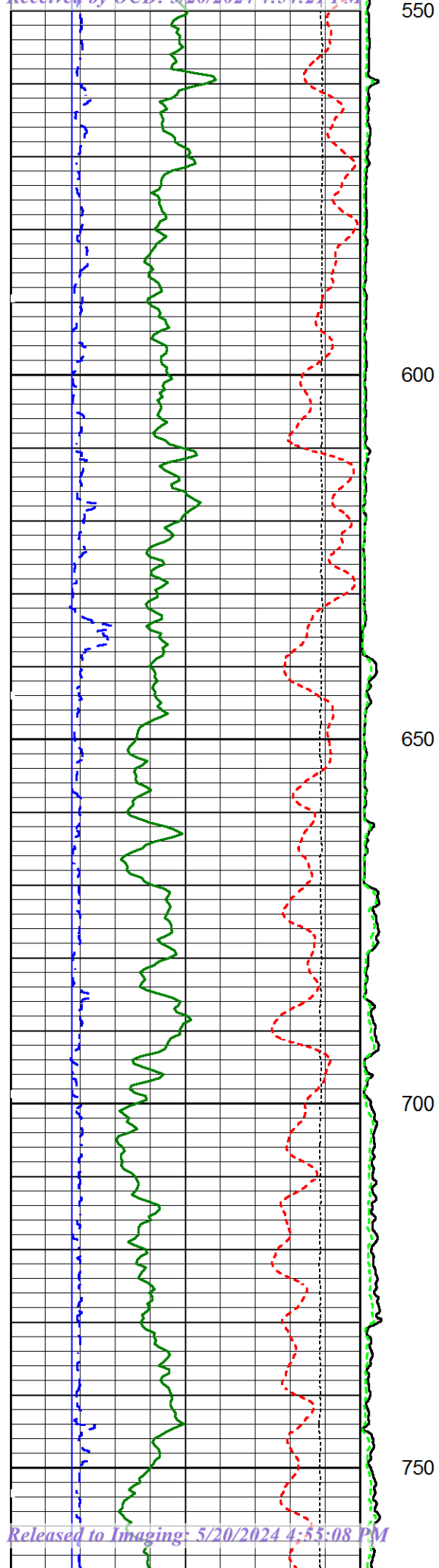
Main Pass

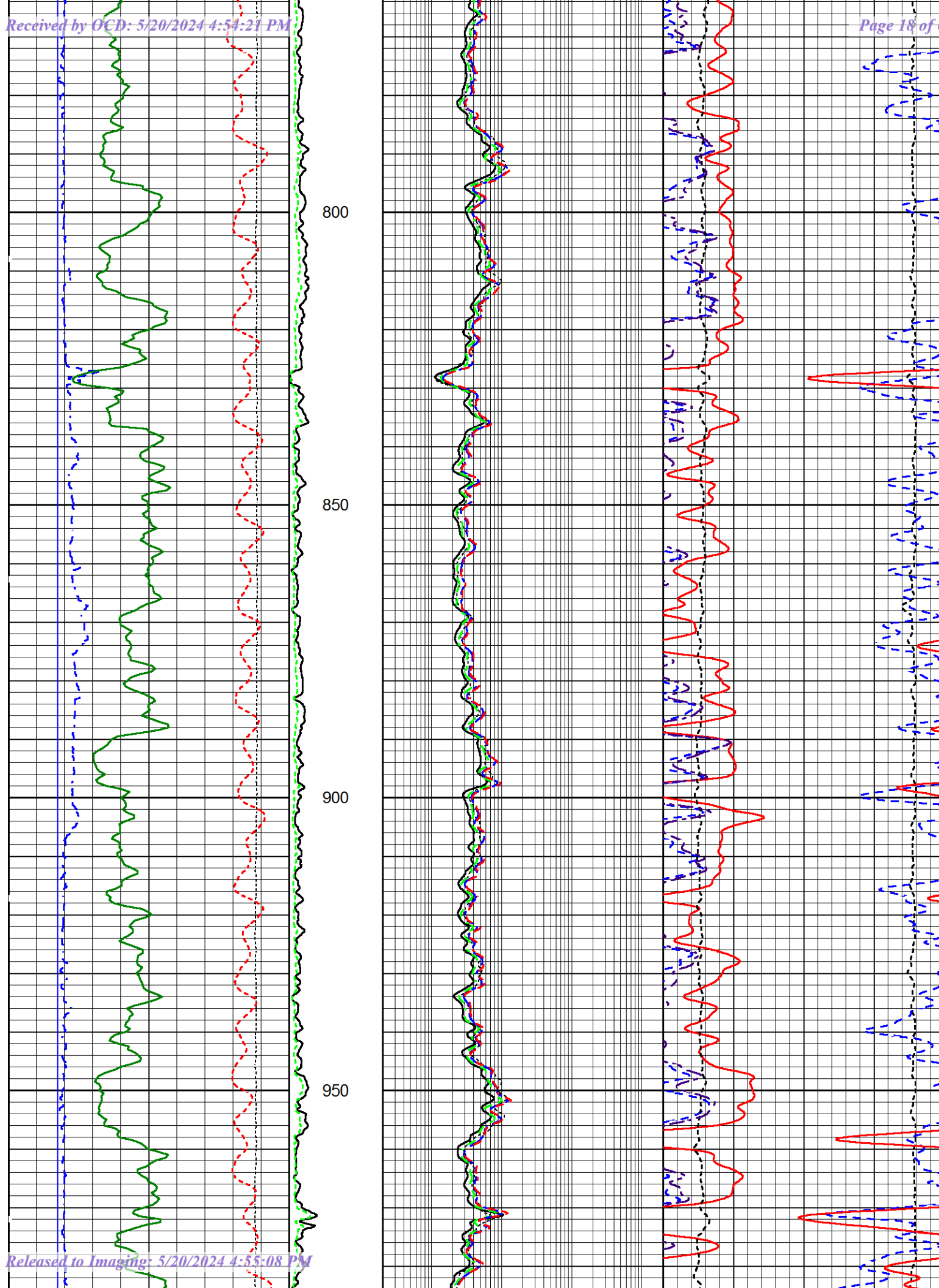
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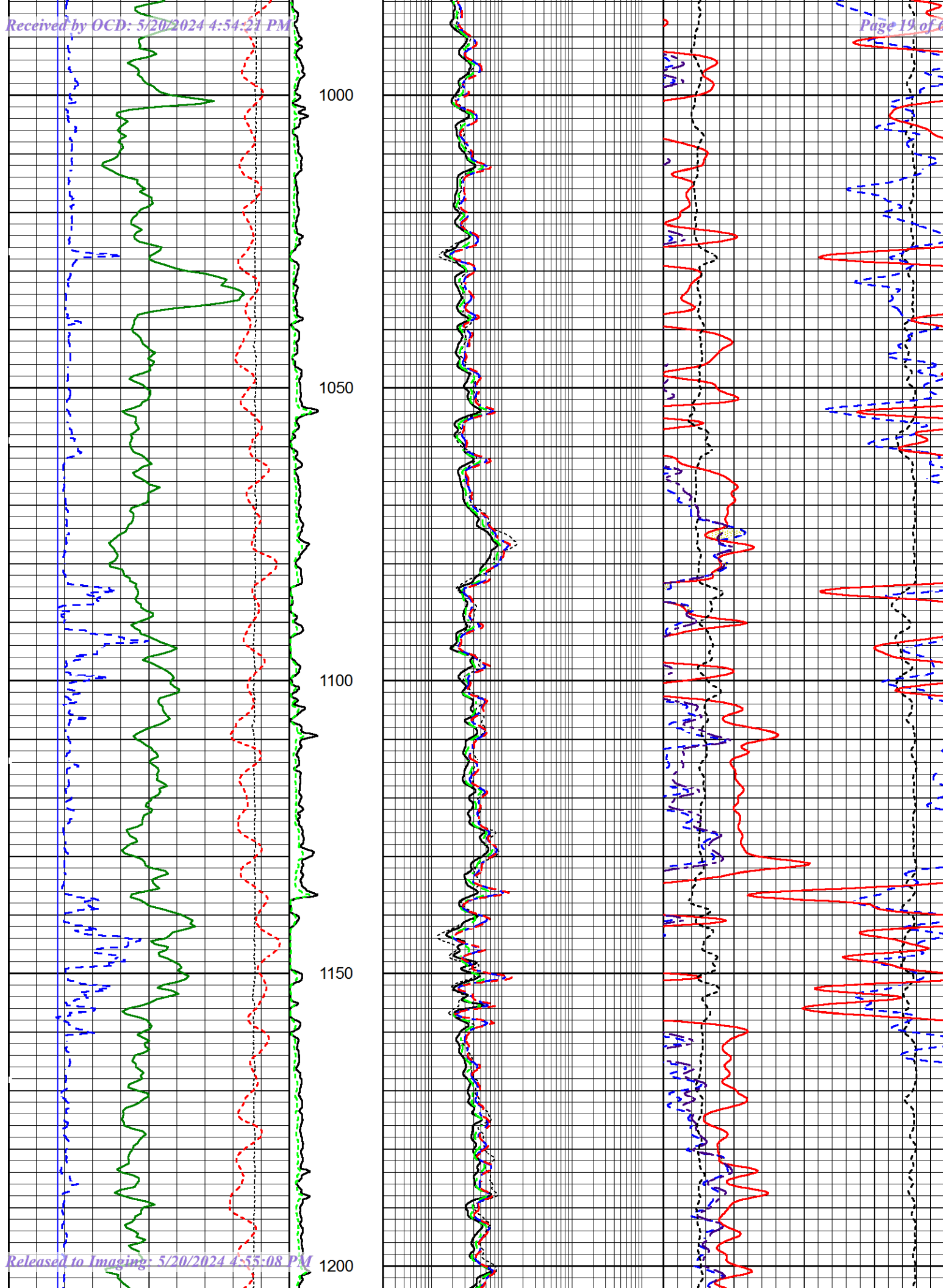
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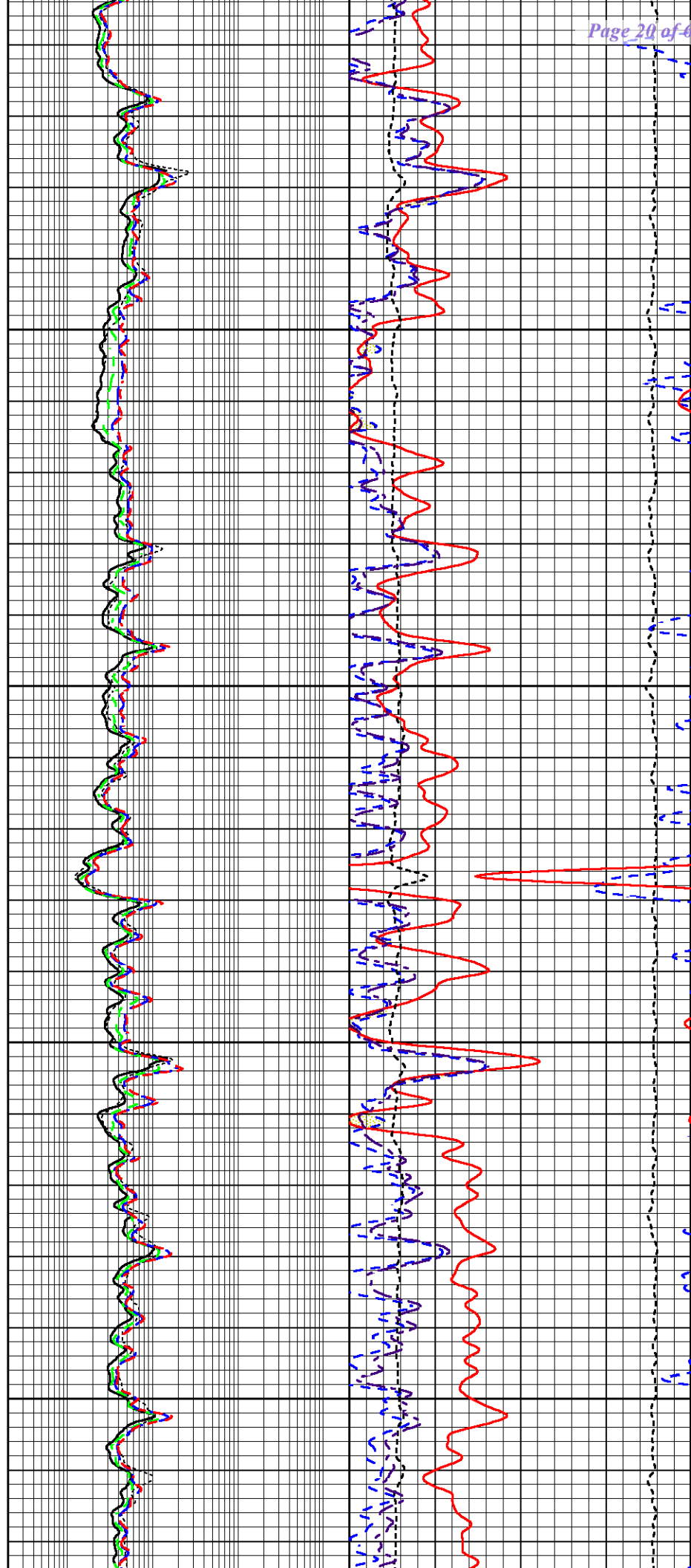
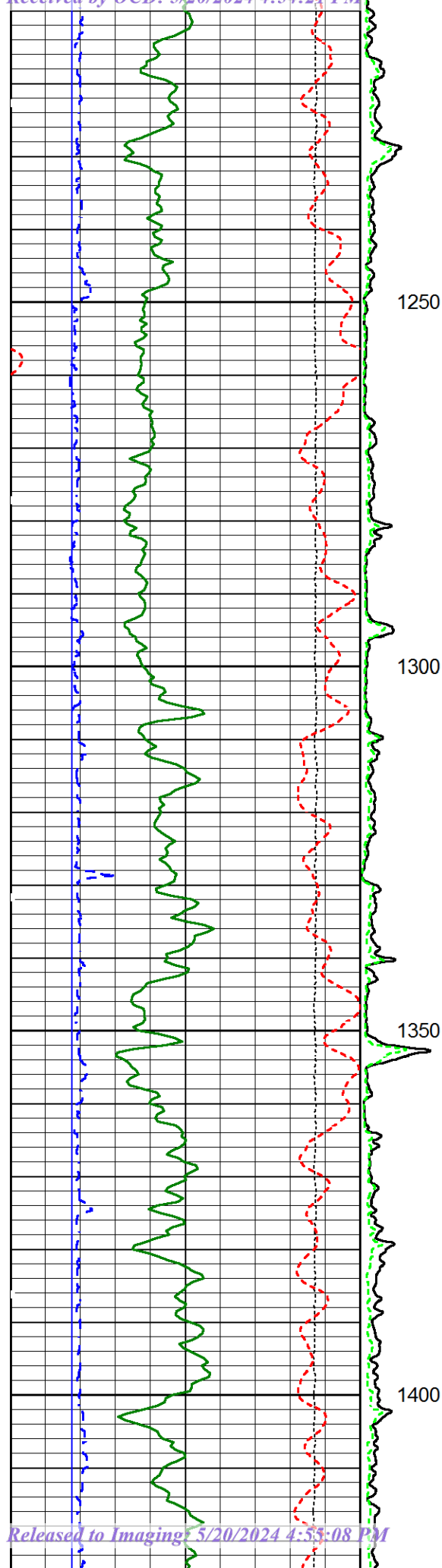
7	Caliper (in)	17	(Ohm-m)	0.2	20 IN Resistivity (Ohm-m)	2000	0.3	(Porosity Decimal Fraction)	0.1
	SP [-20mV+]	0	20	0.2	30 IN Resistivity (Ohm-m)	2000		Density Porosity	
0	SGR (GAPI)	200	NORM	0.2	60 IN Resistivity (Ohm-m)	2000	0.3	(Porosity Decimal Fraction)	-0.1
	Line Tension		(Ohm-m)	0.2	90 IN Resistivity (Ohm-m)	2000		Crossplot Porosity	
	5000 (lb)	0	0				0.3	(Porosity Decimal Fraction)	-0.1
							0	PE	10
								Density Correction	
								0.8 (g/cc)	-0.2

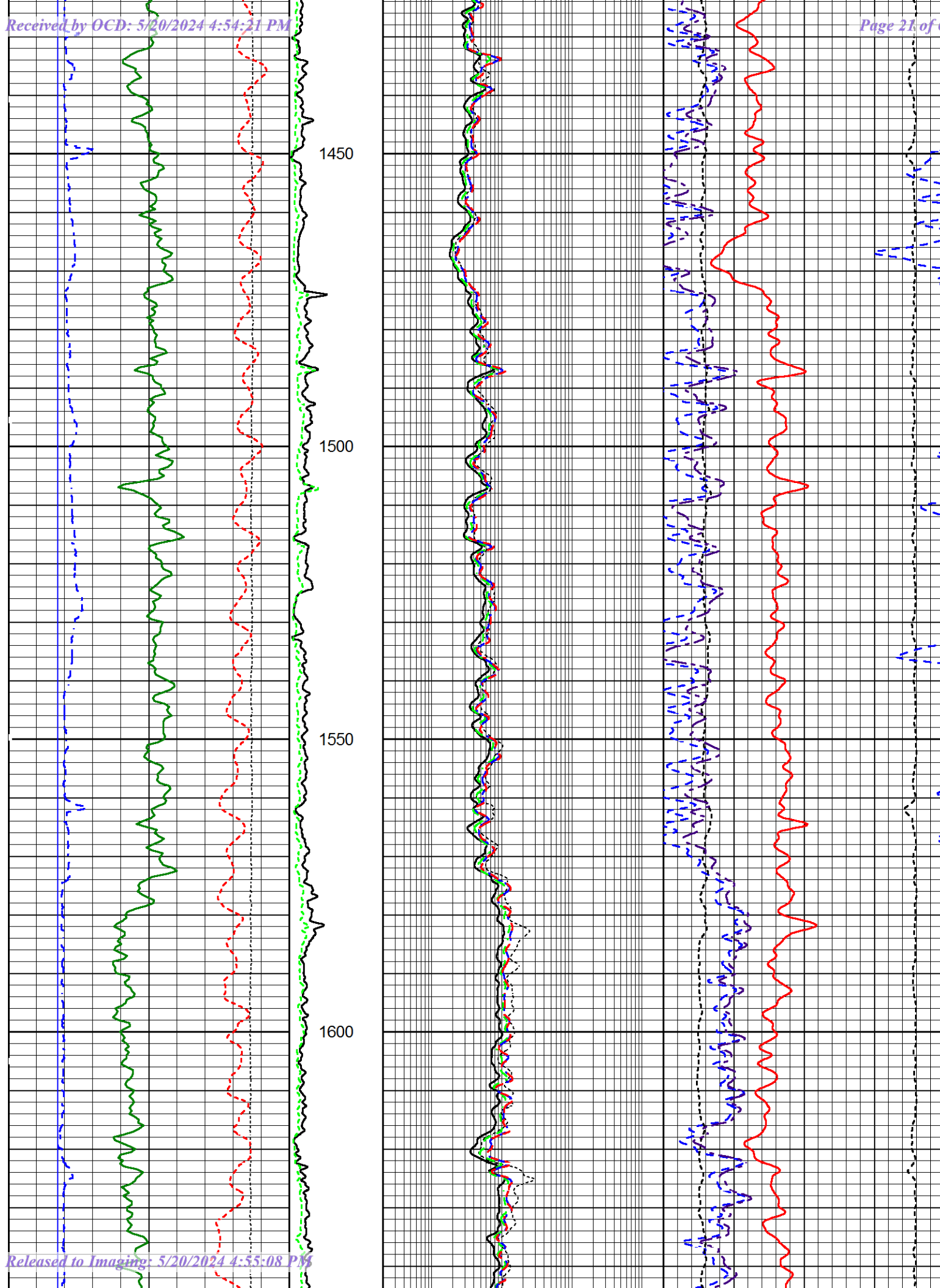


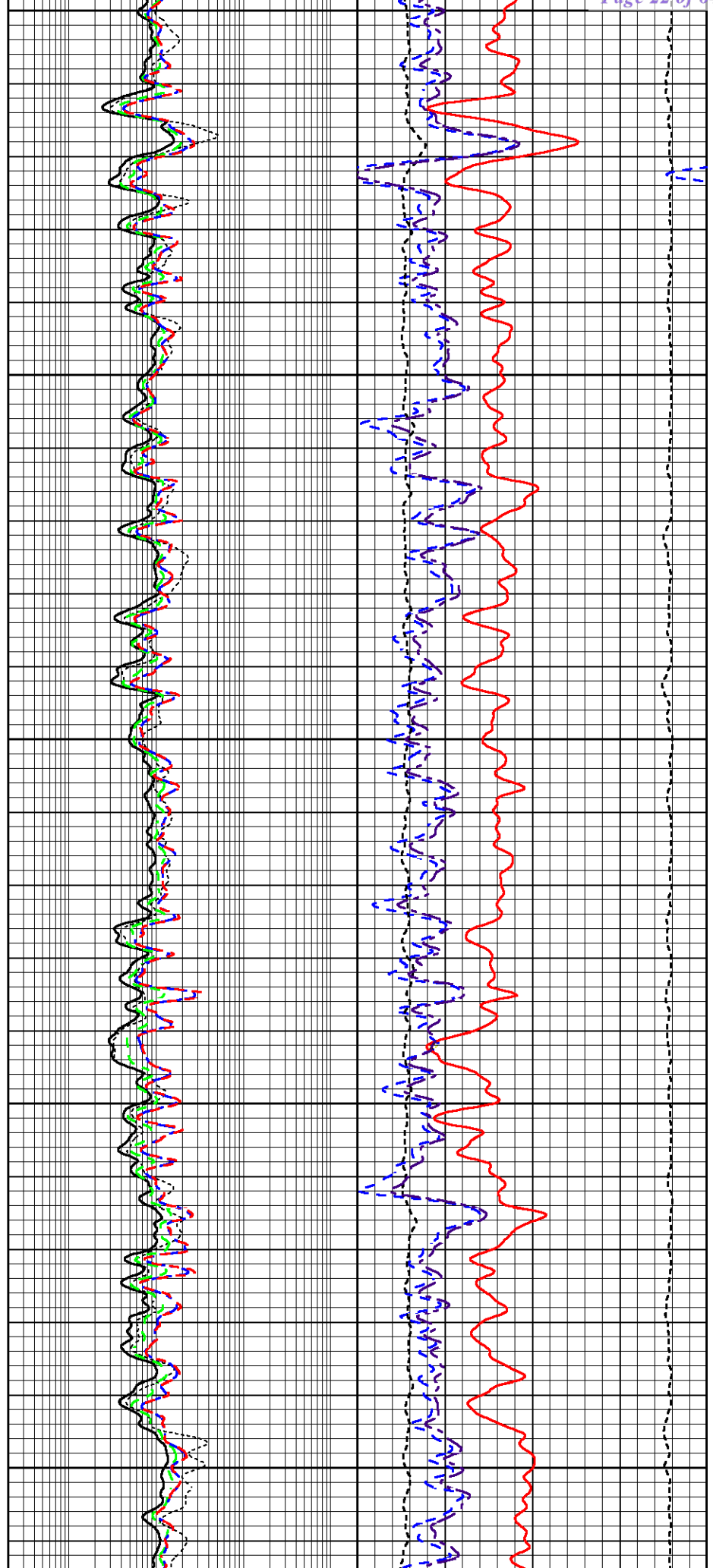
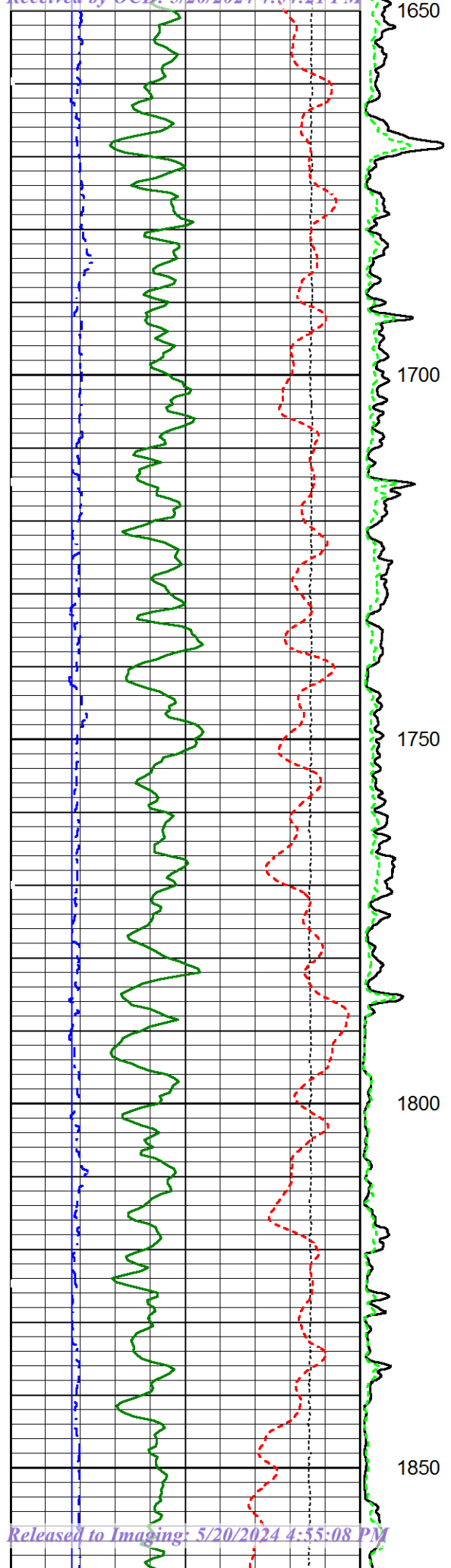


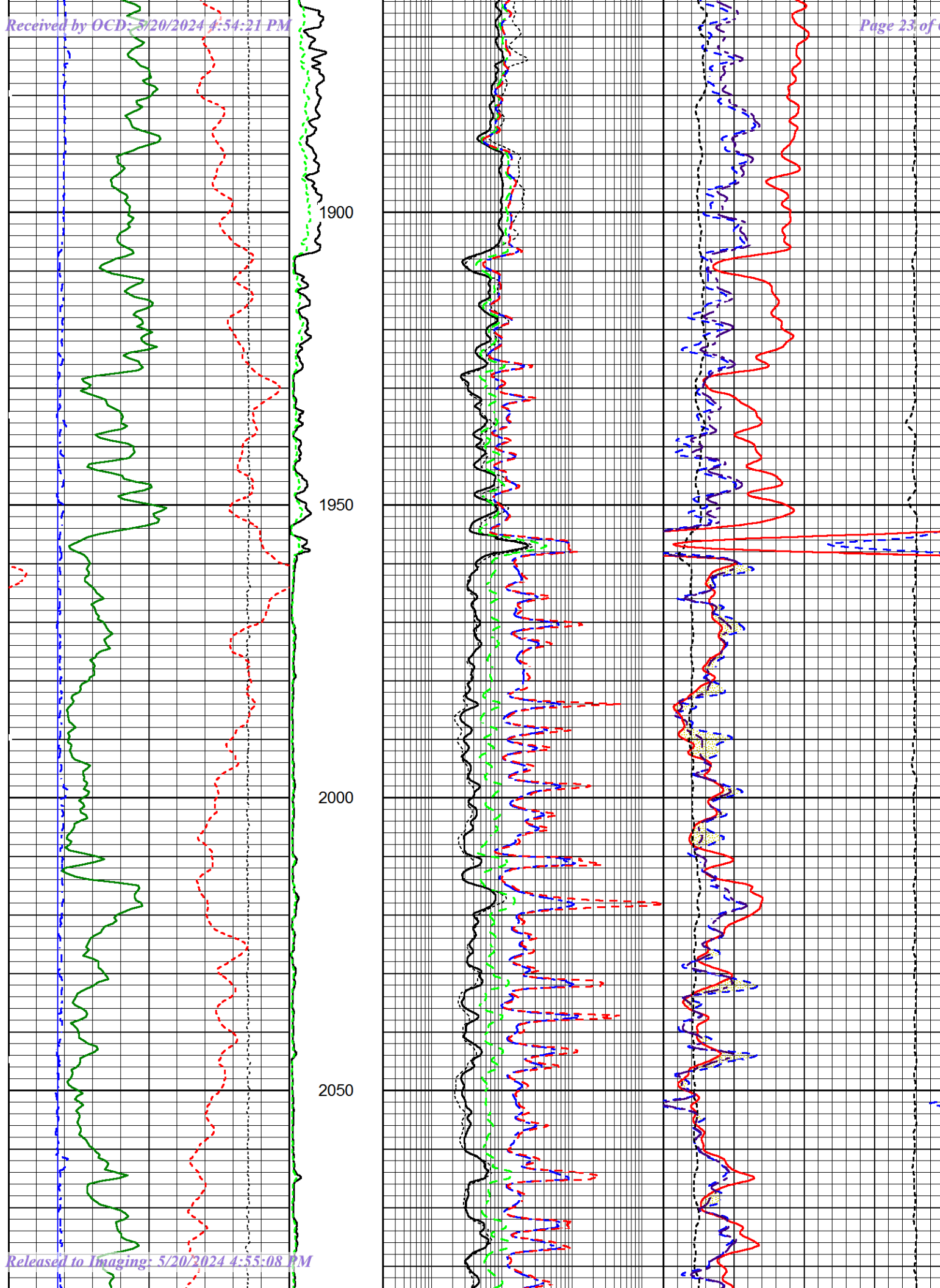


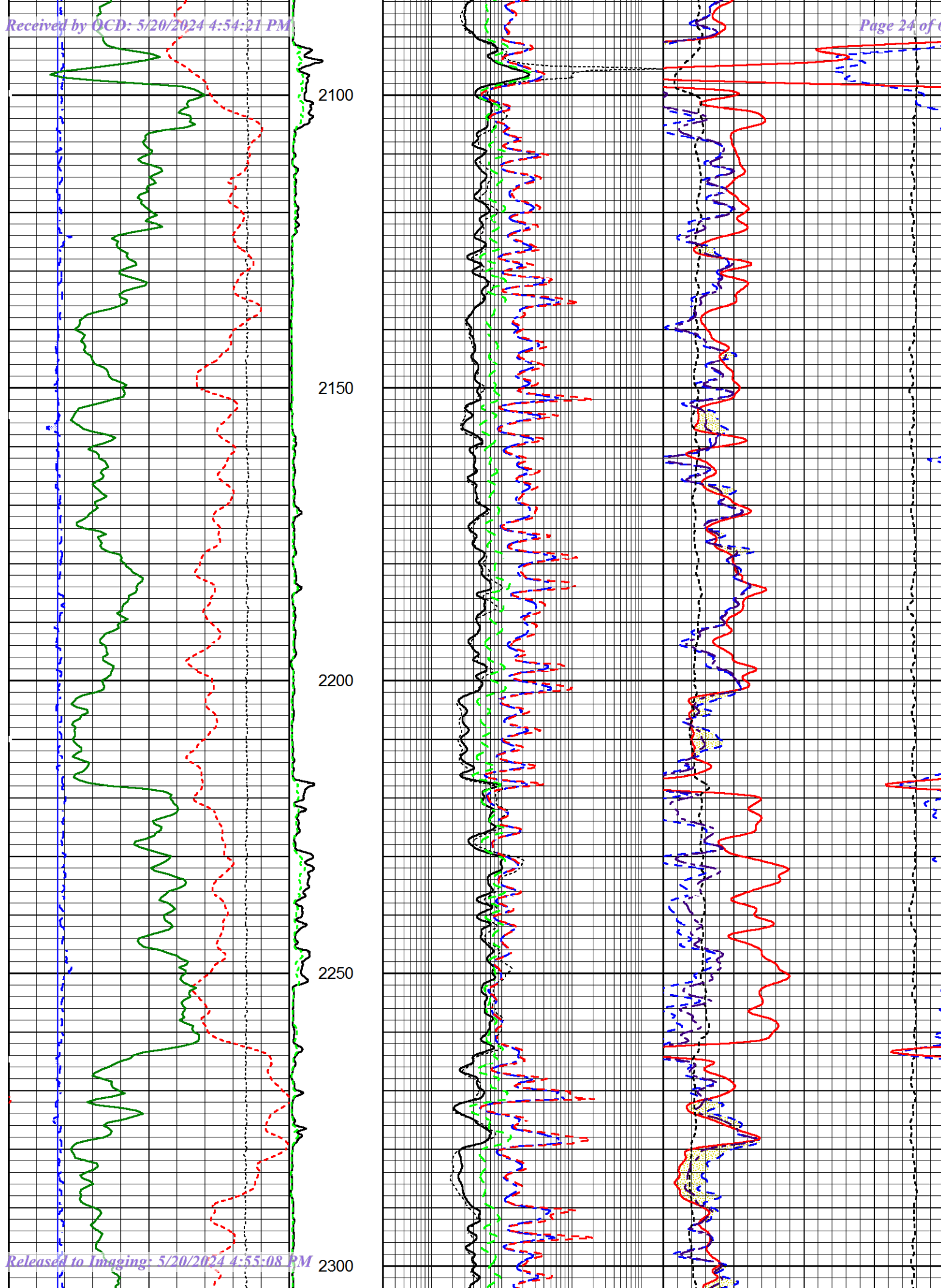


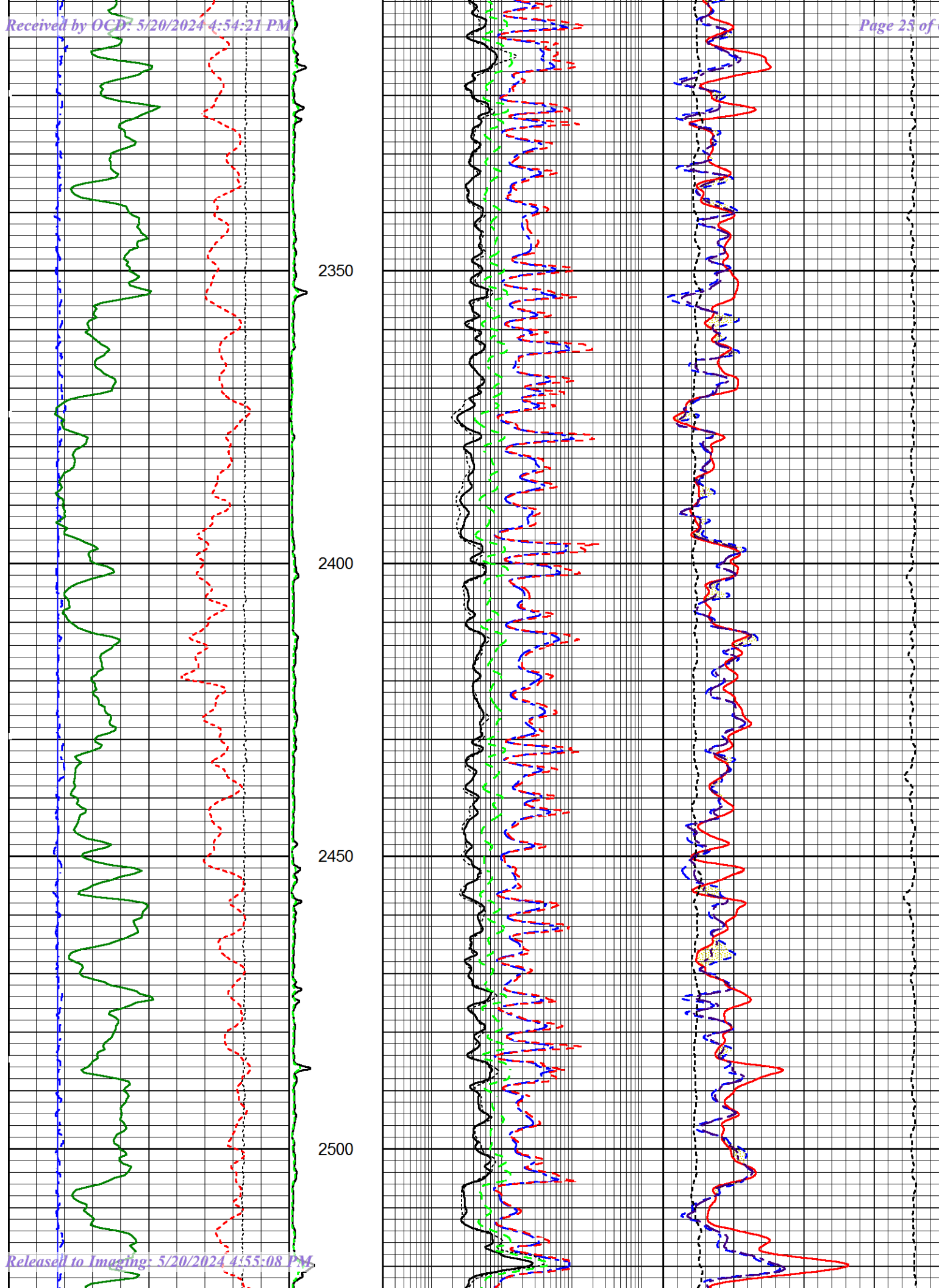


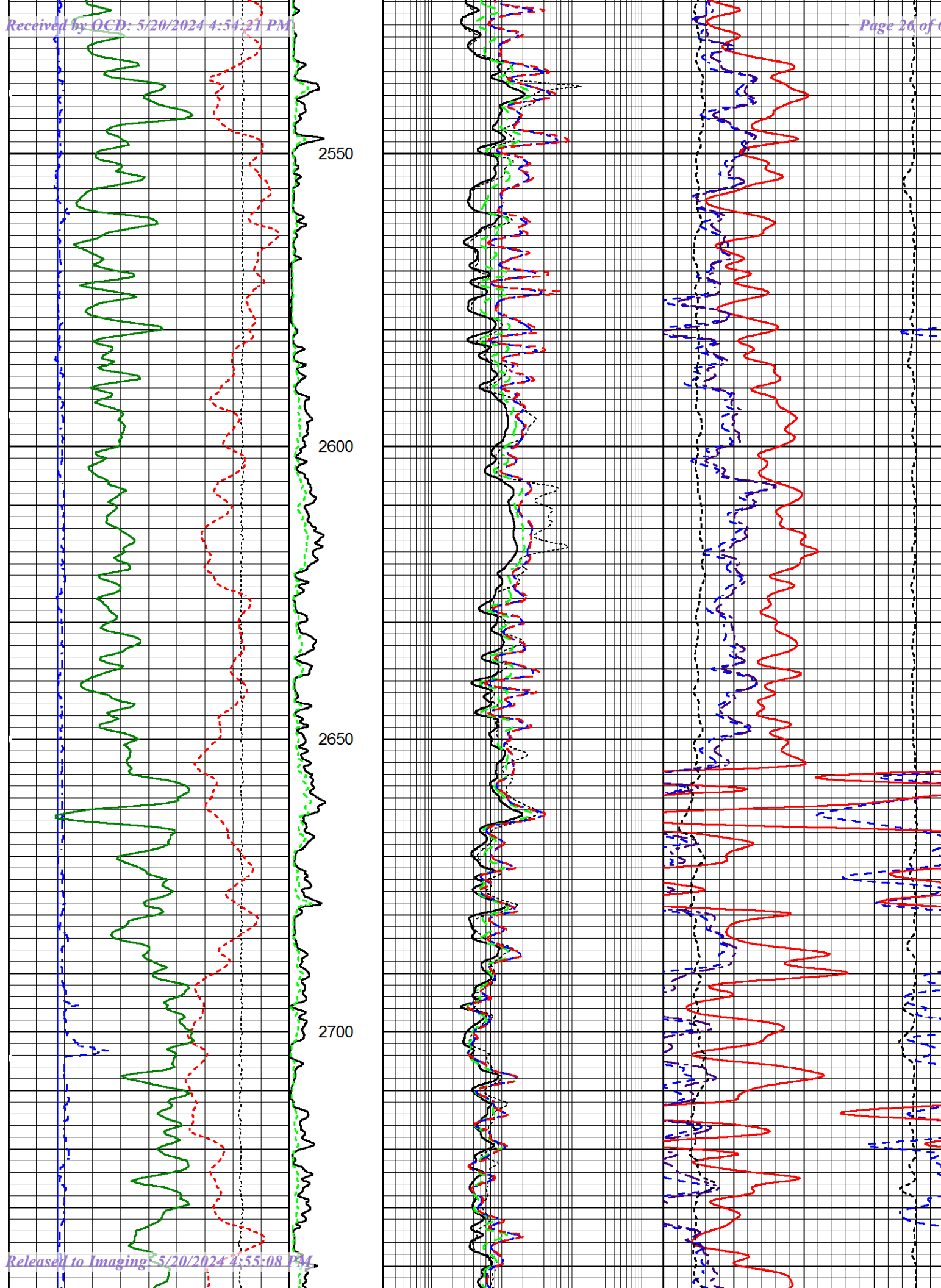


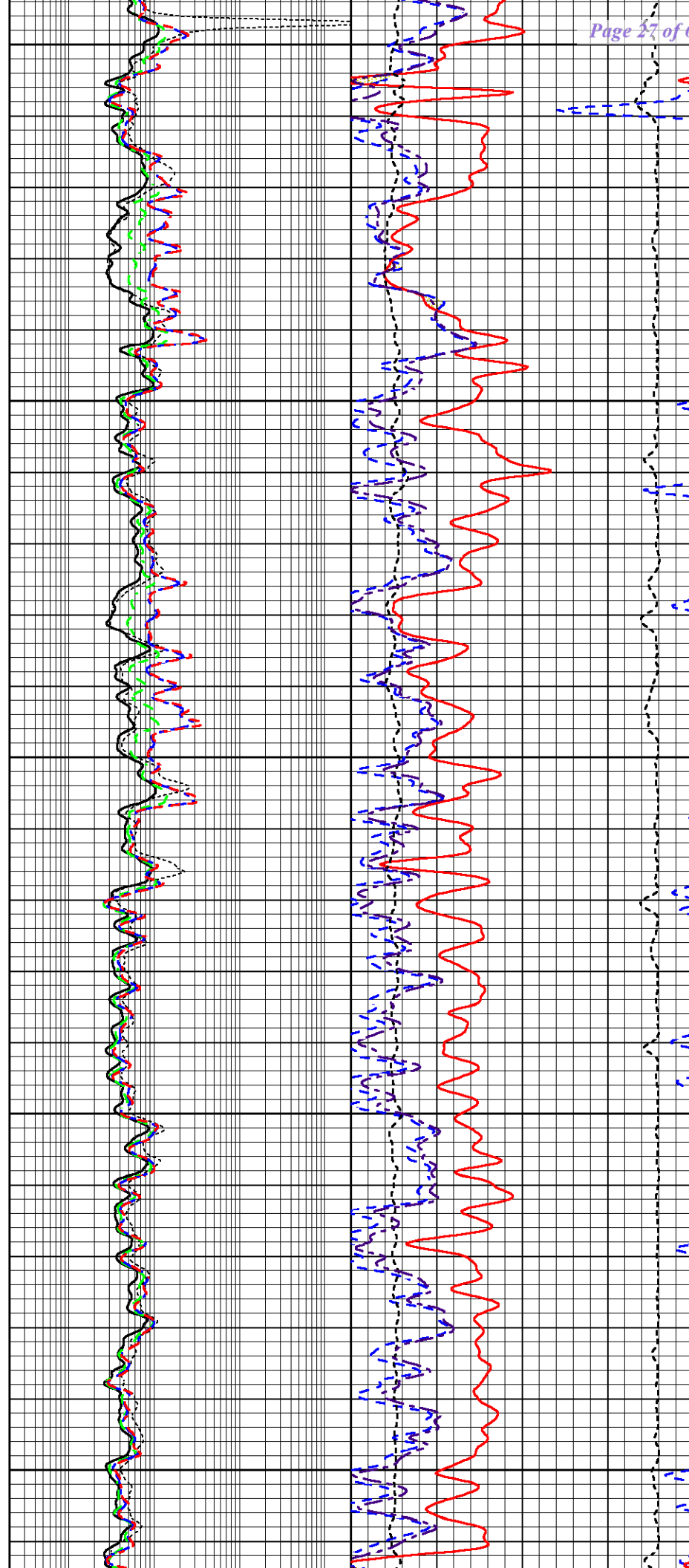
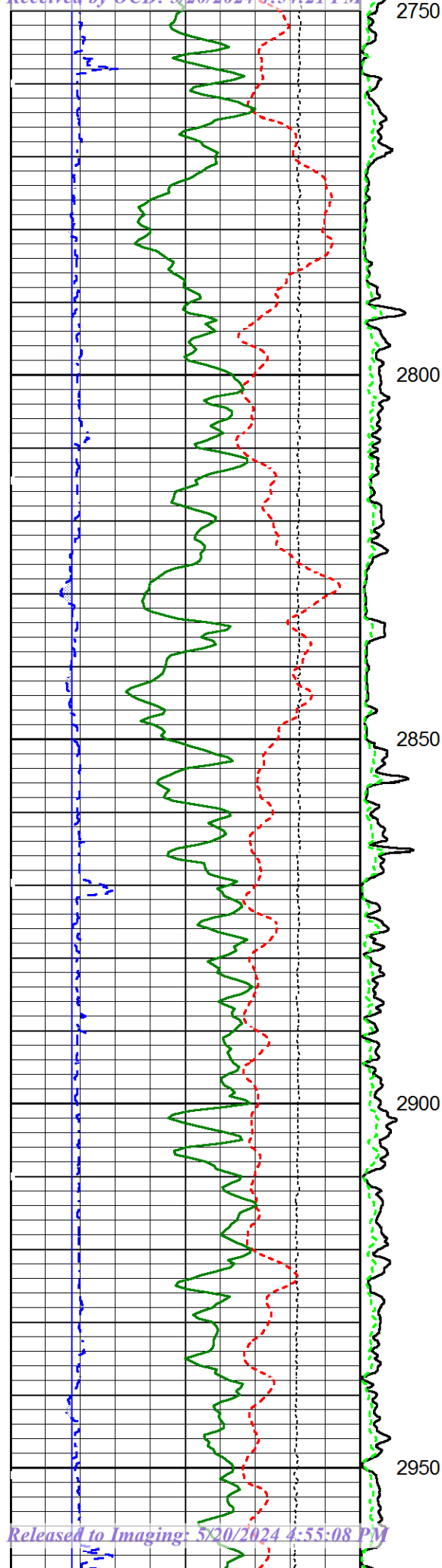


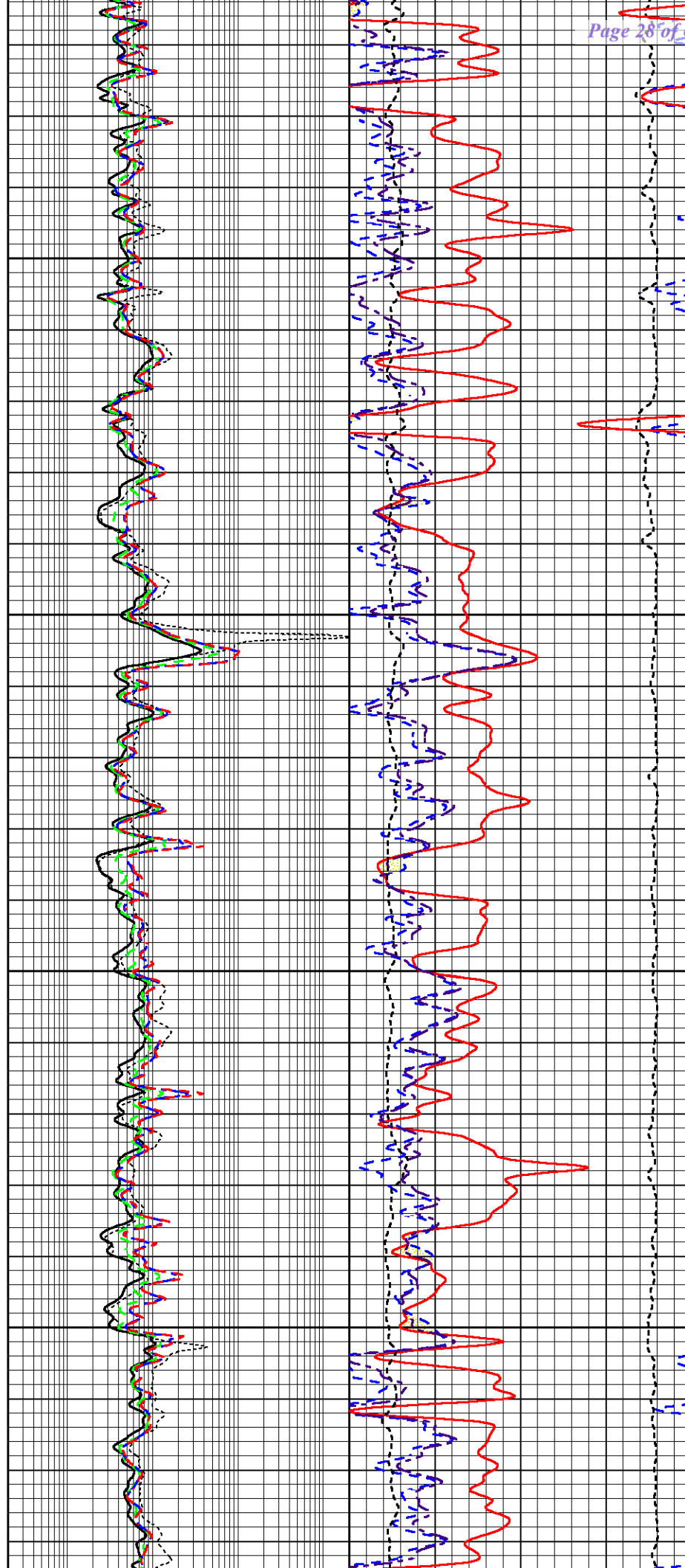
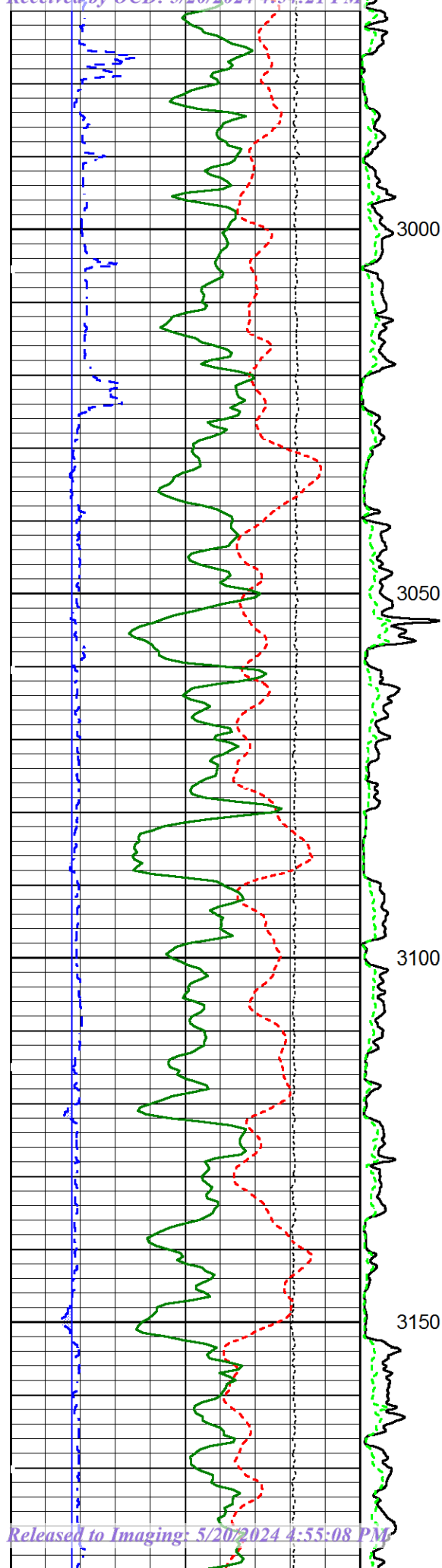


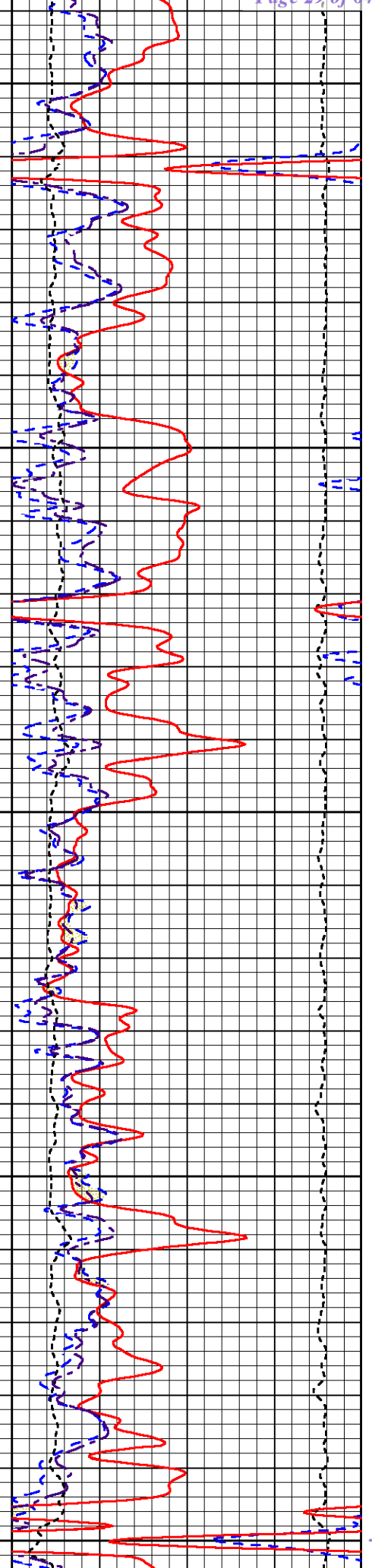
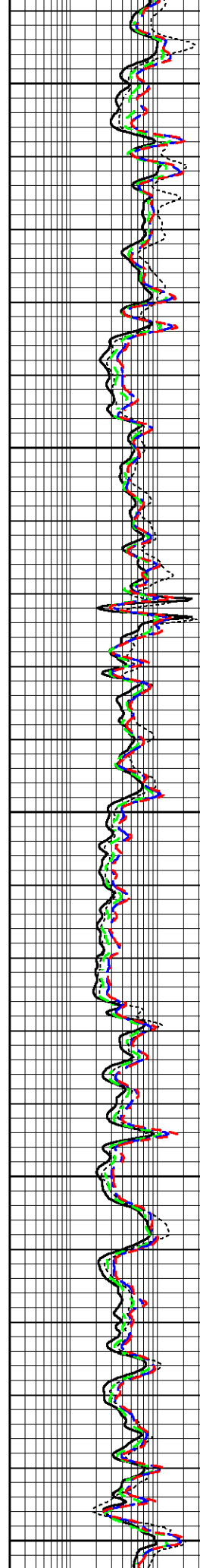
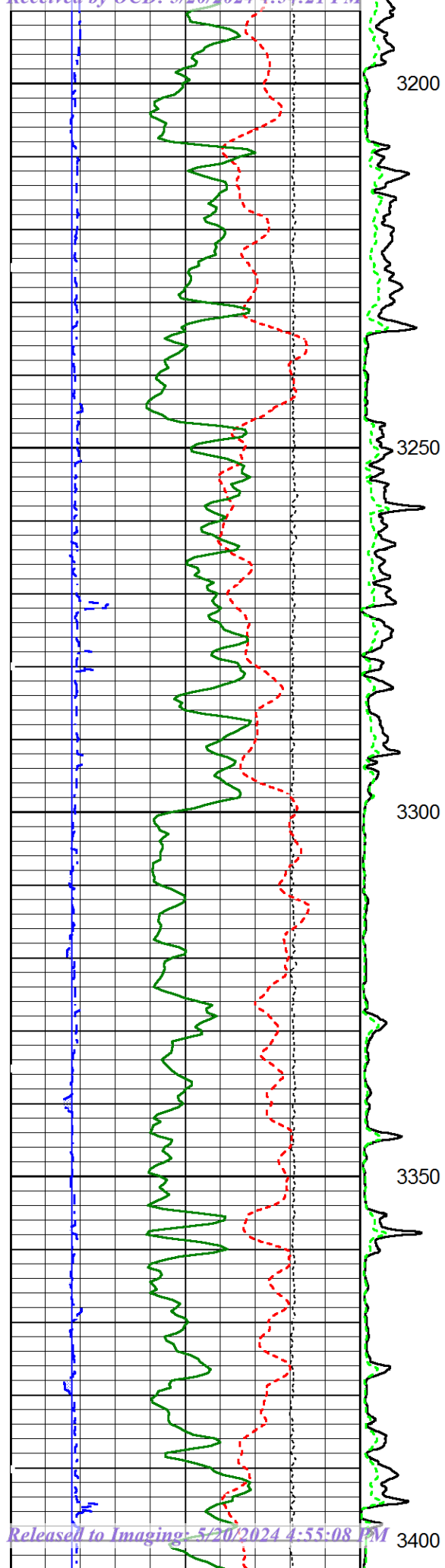


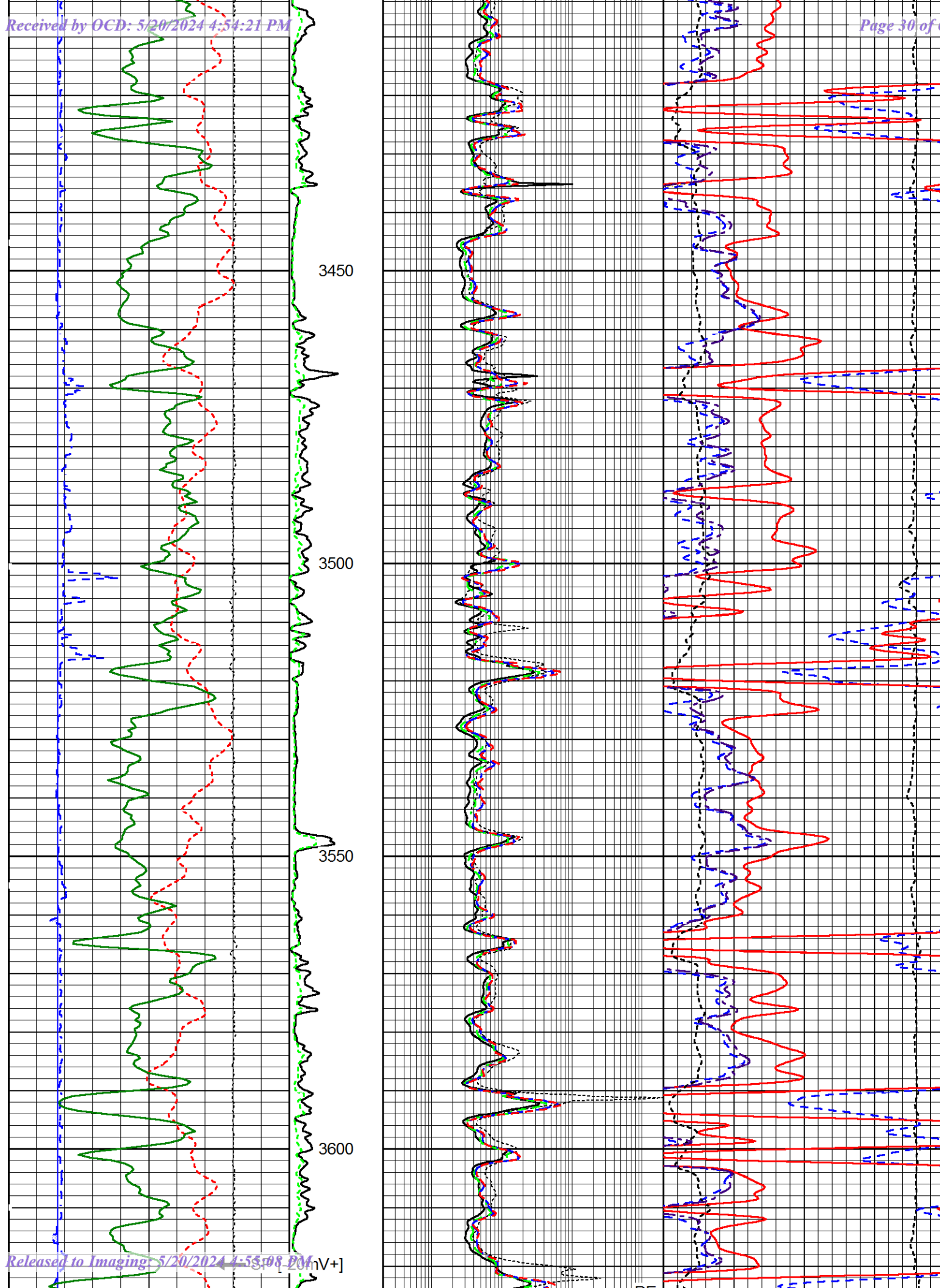


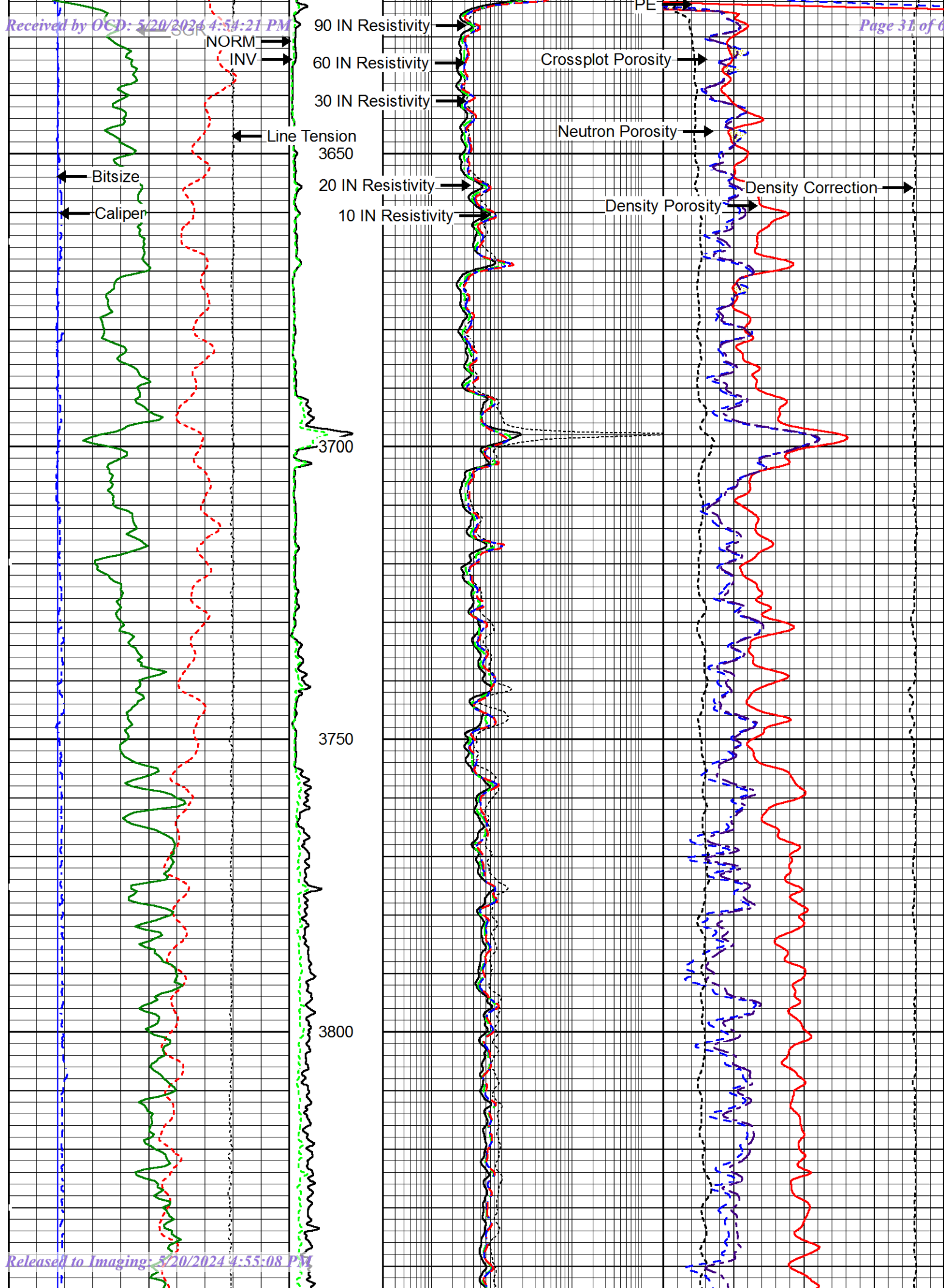


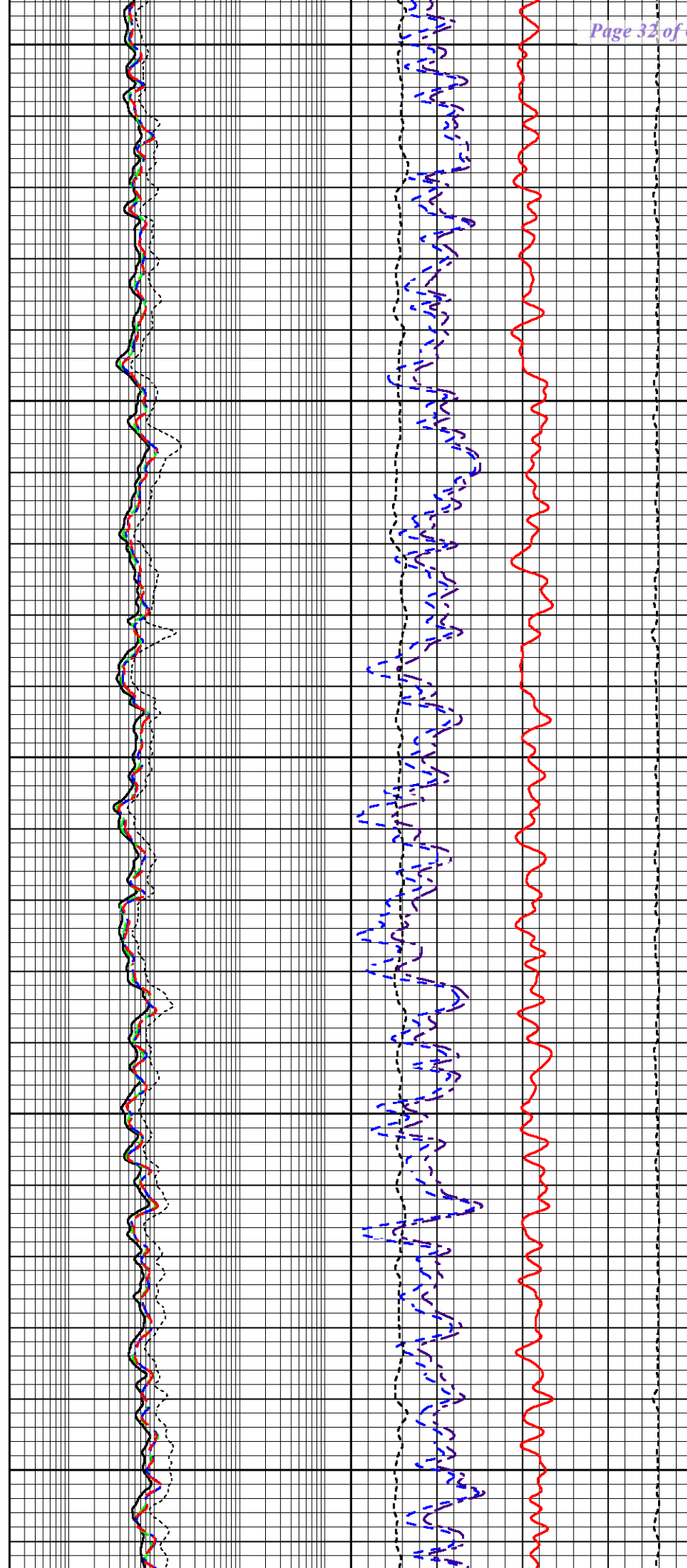
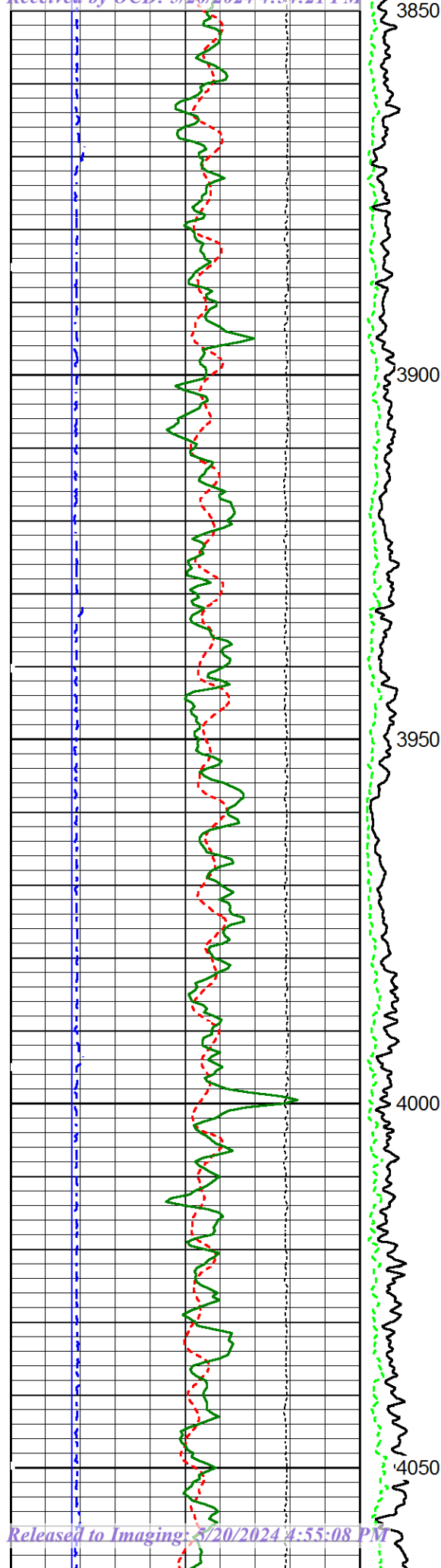


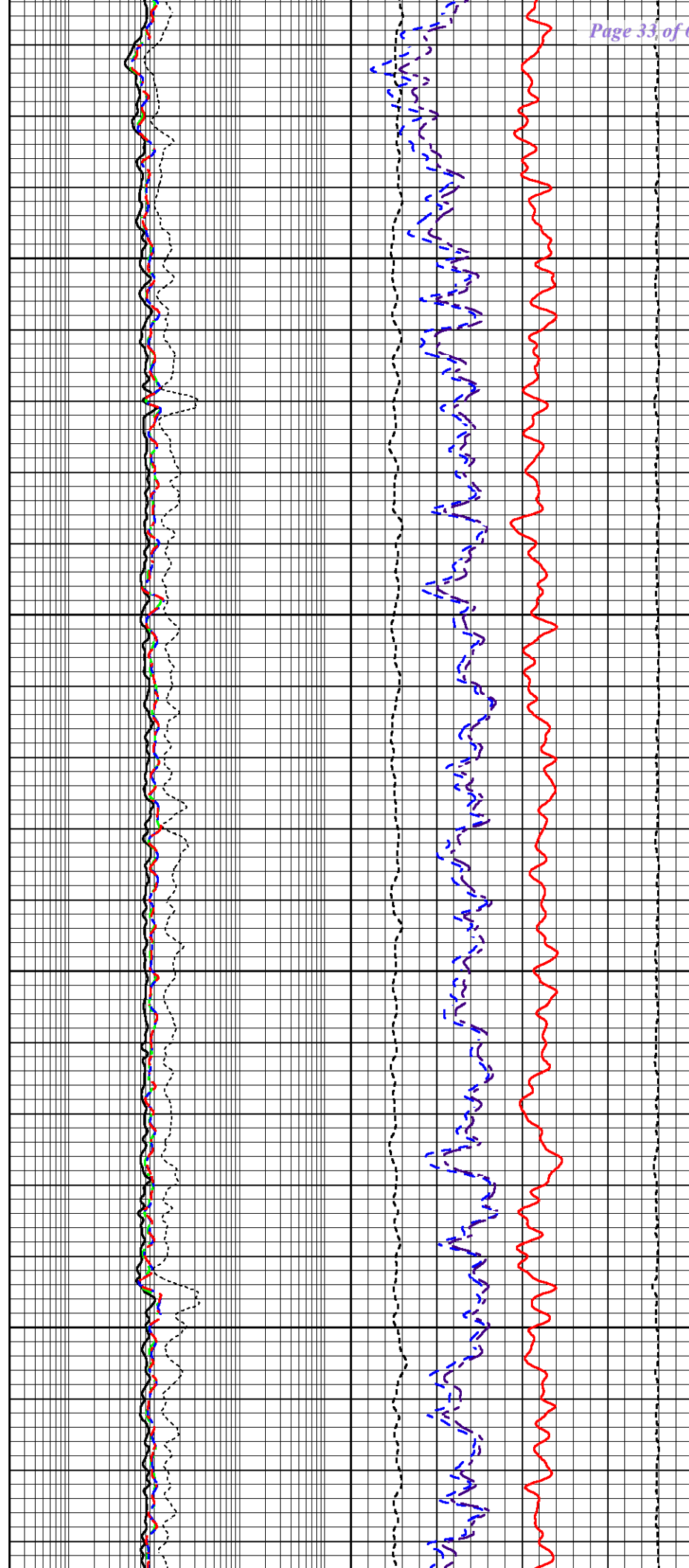
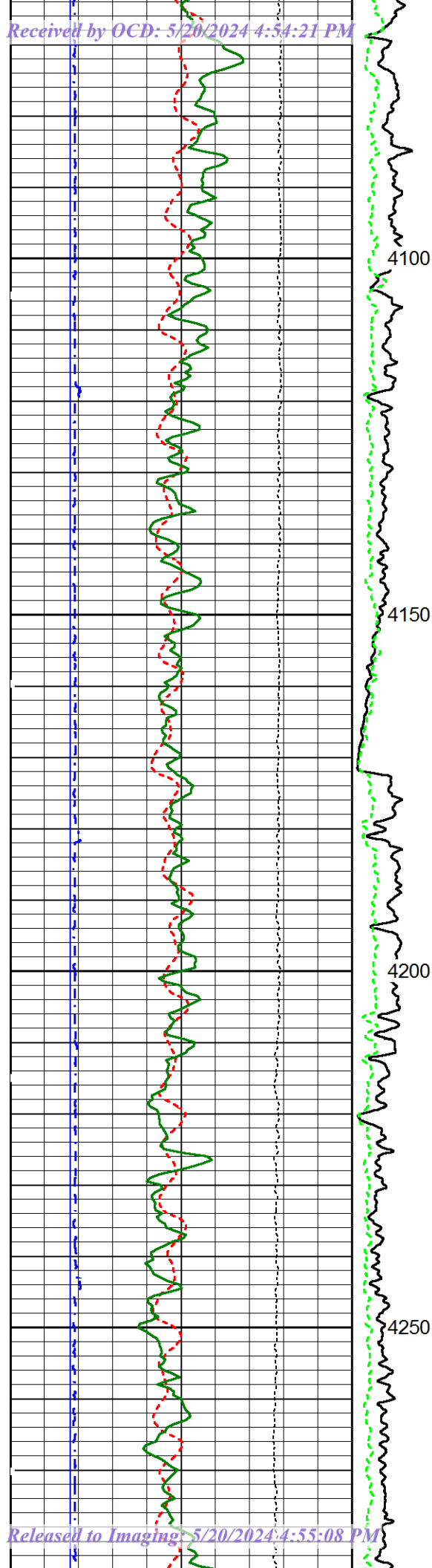


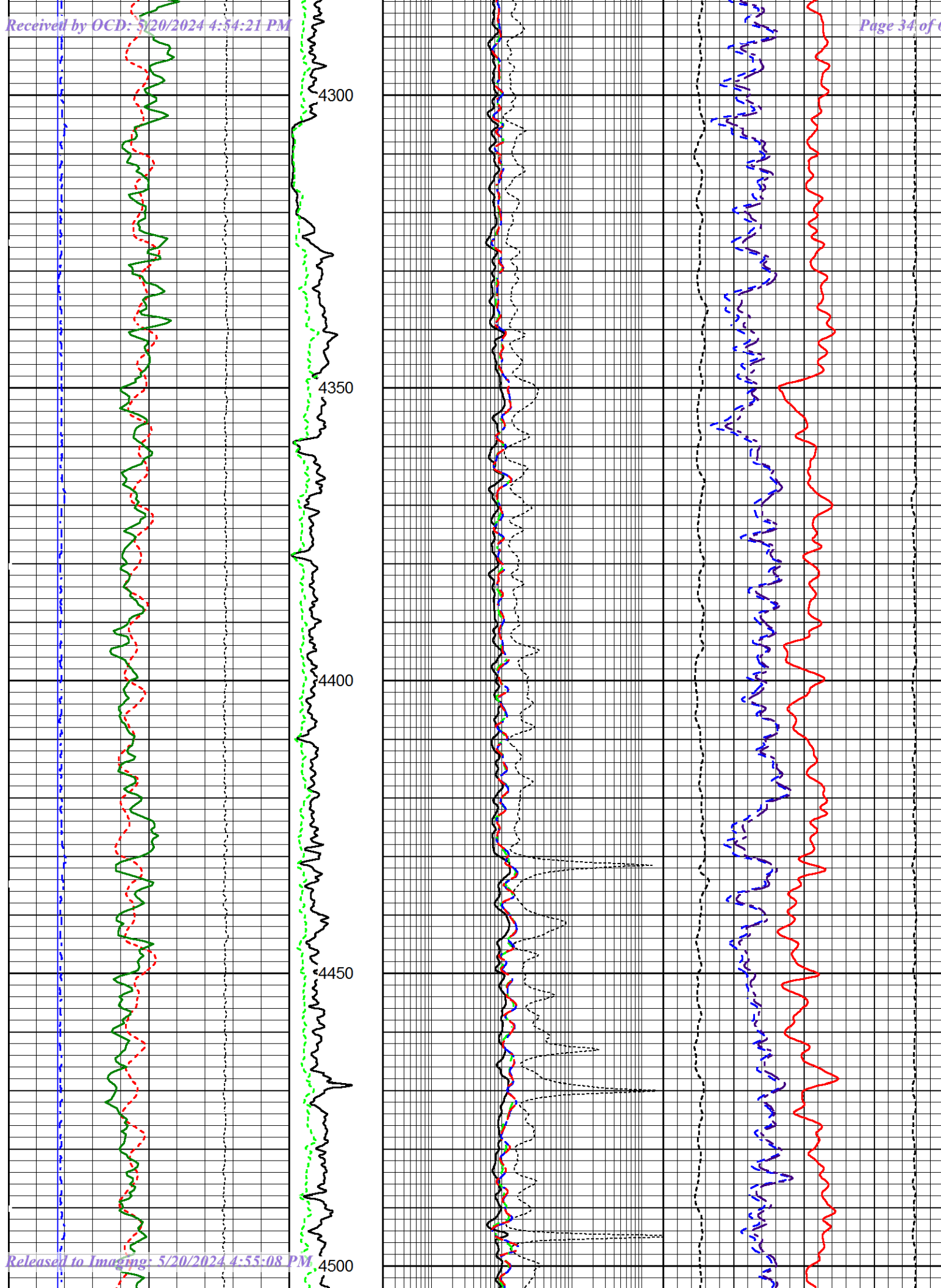


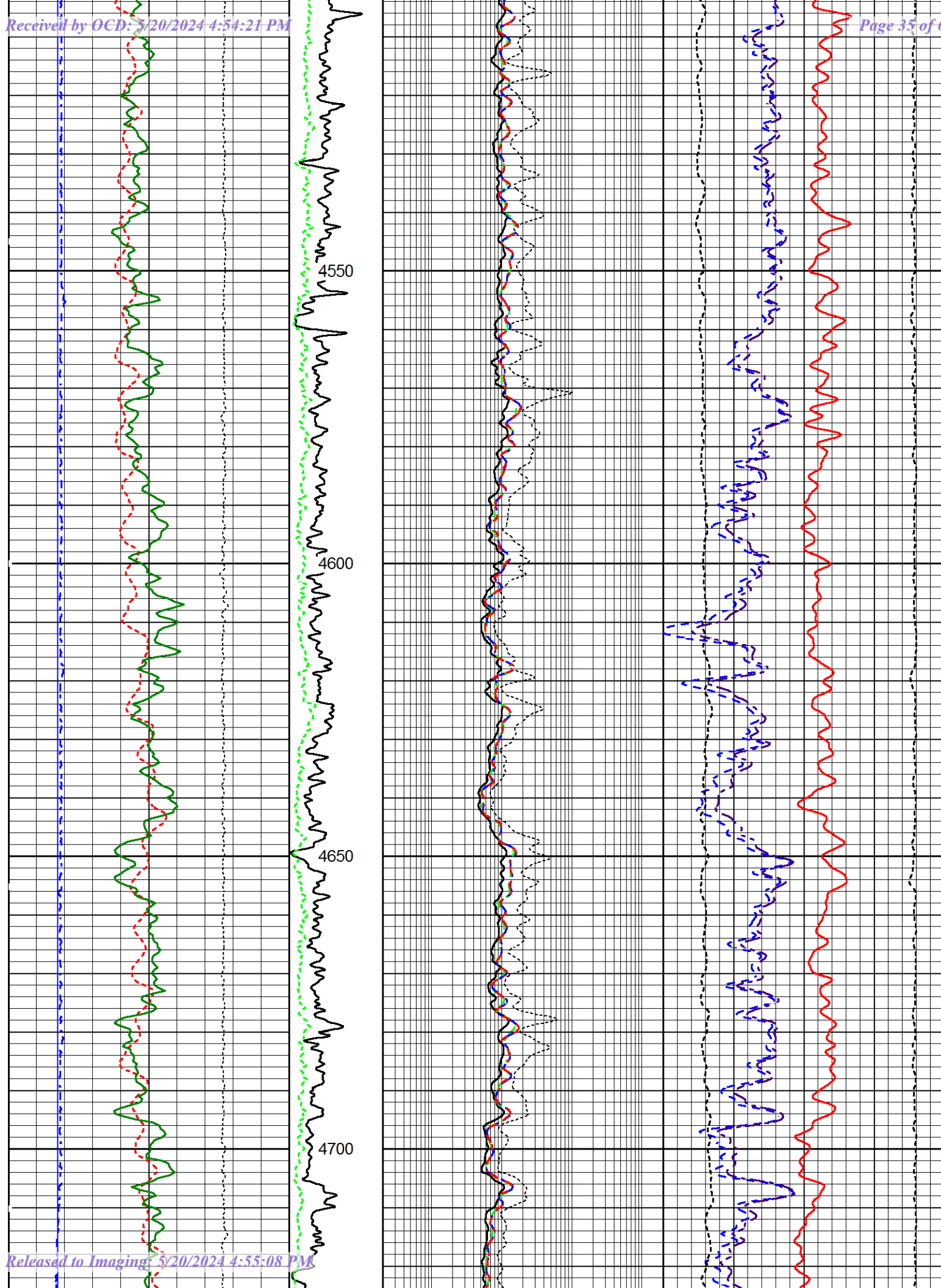


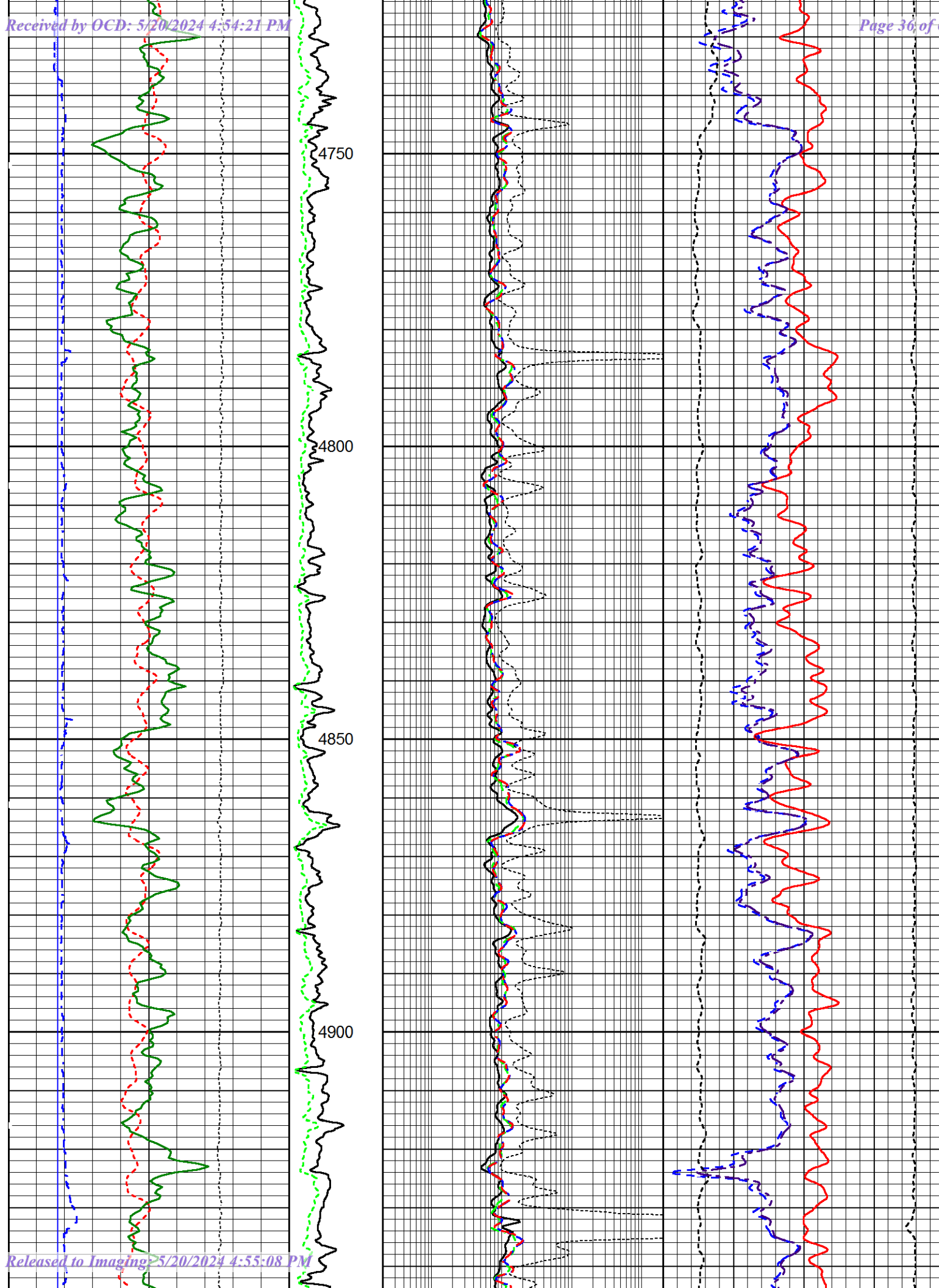


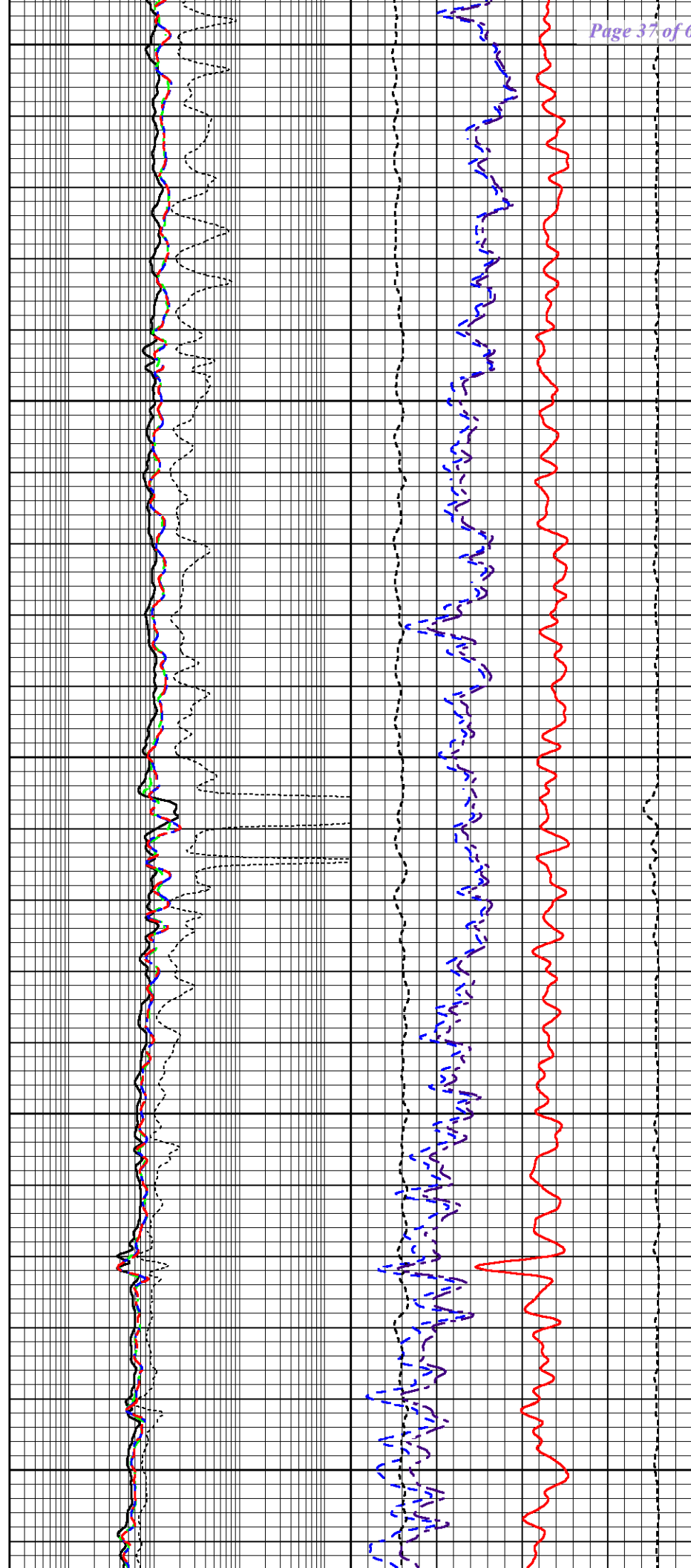
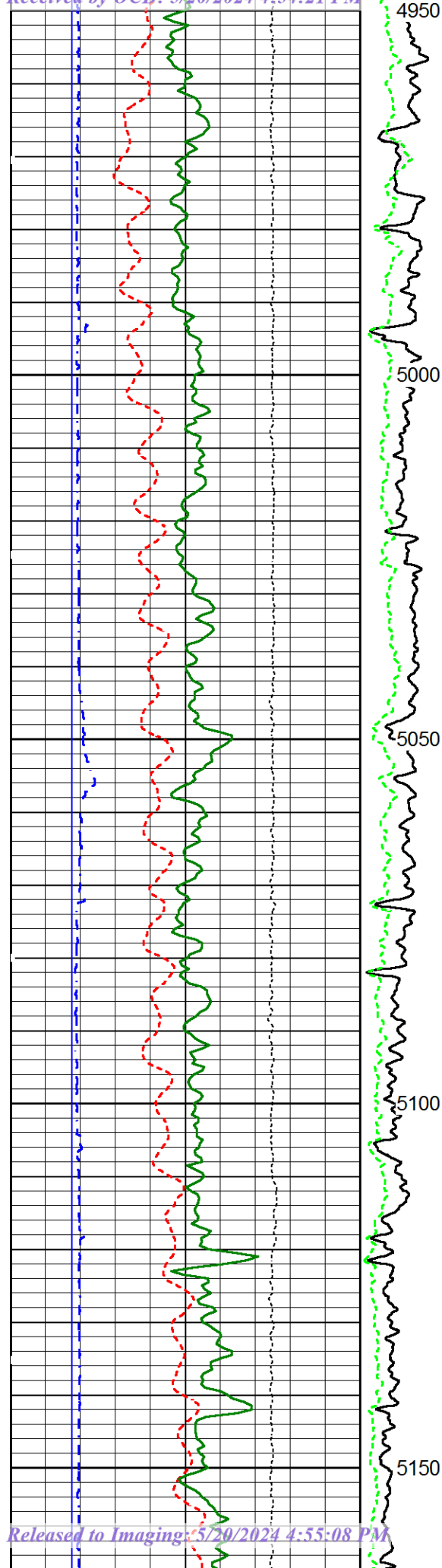


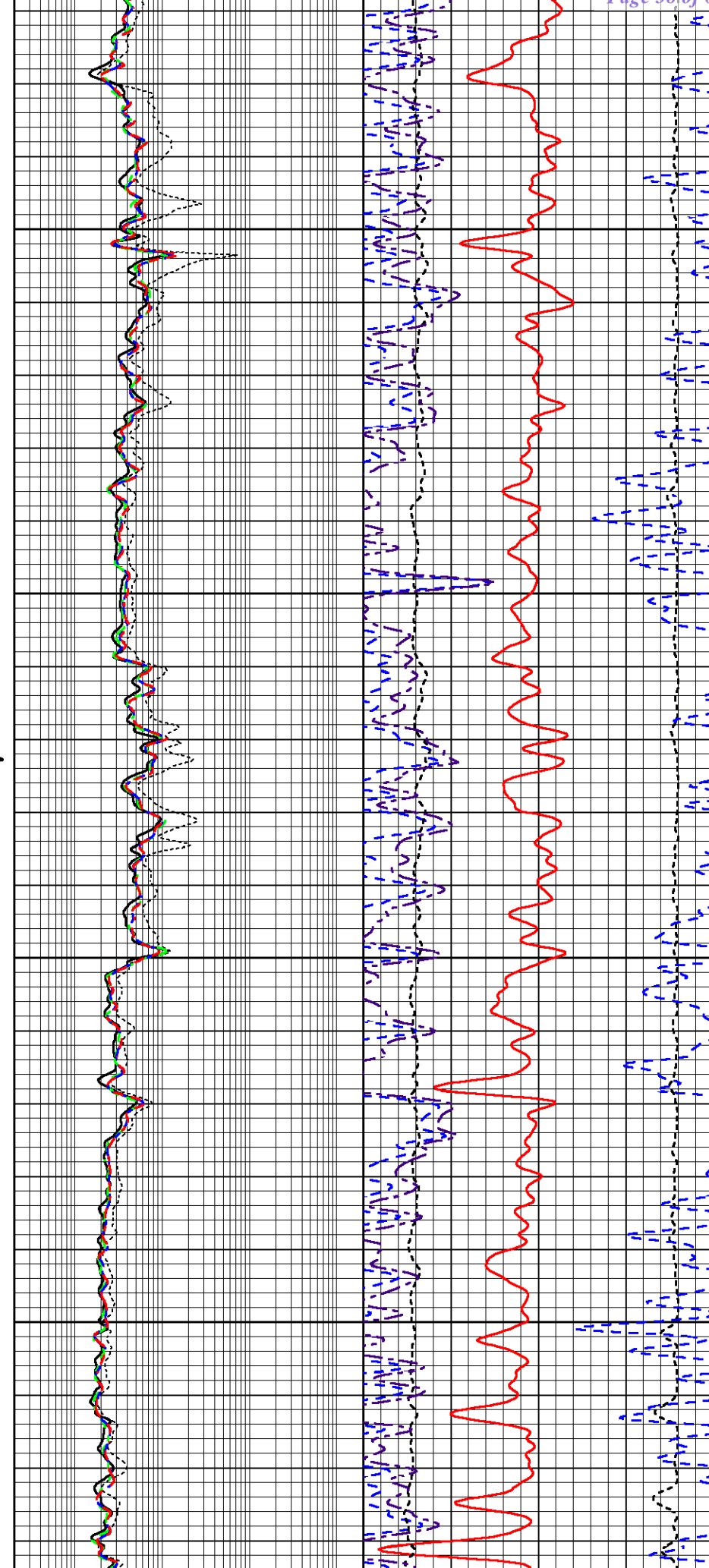
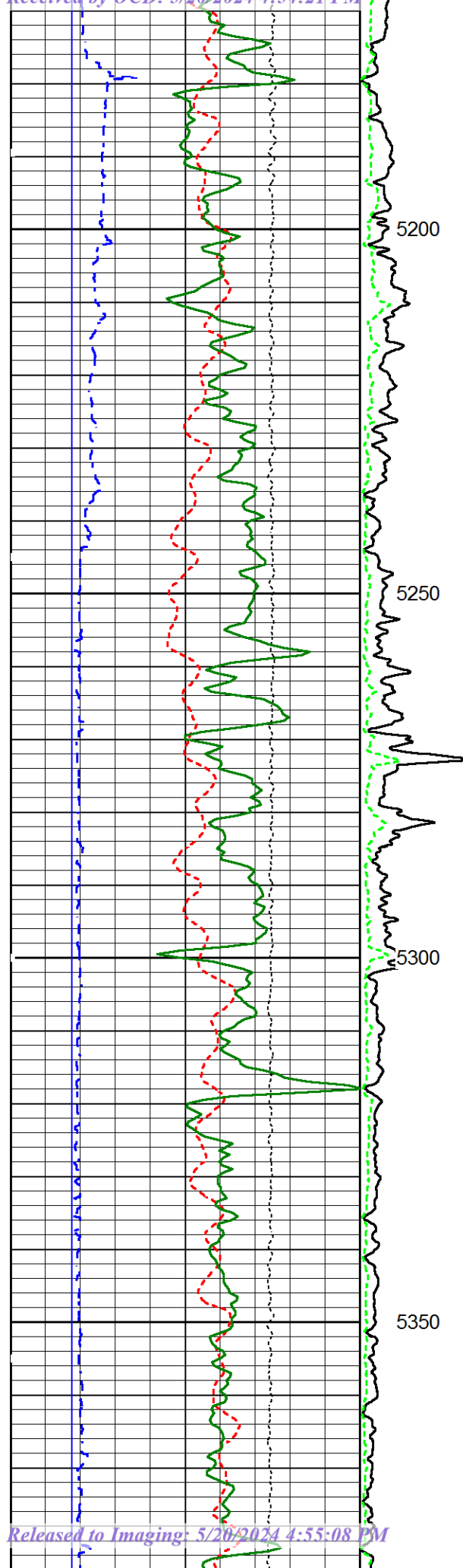


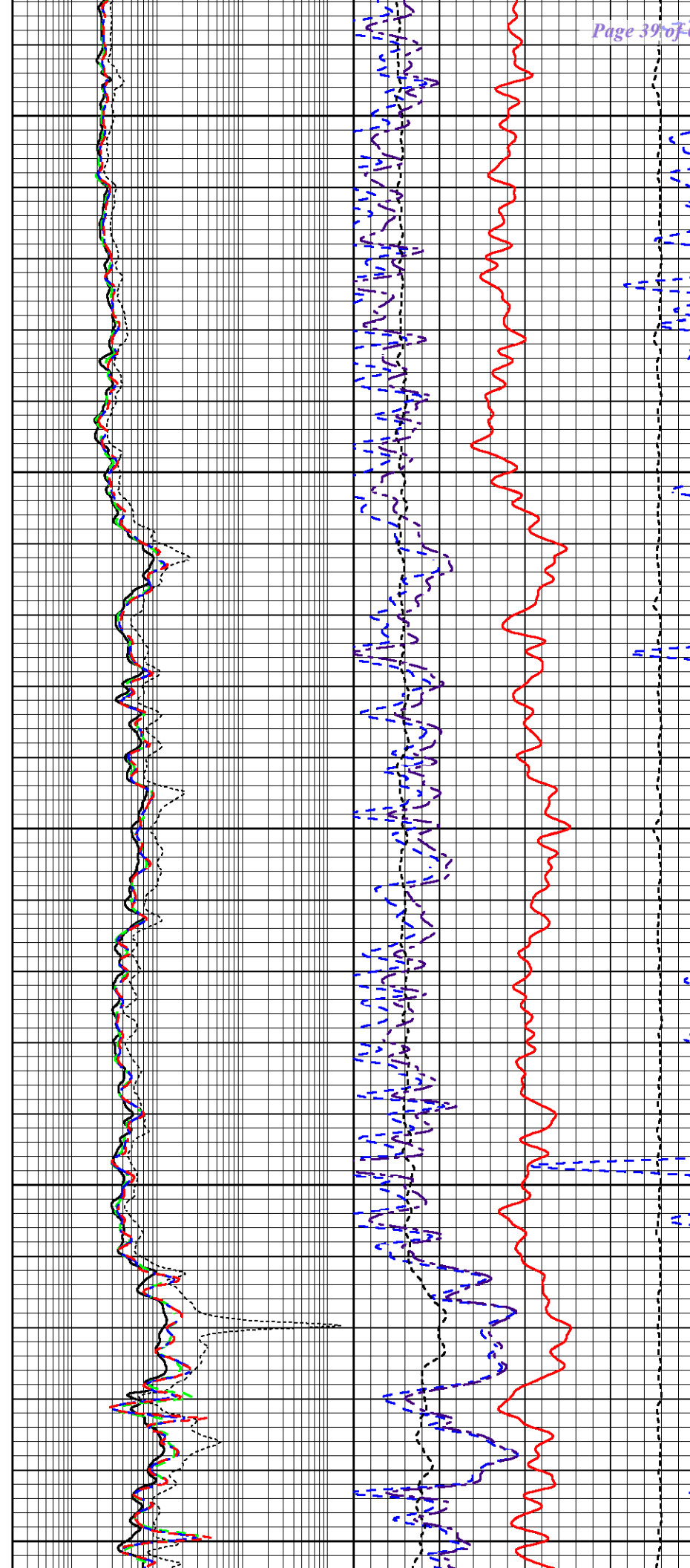
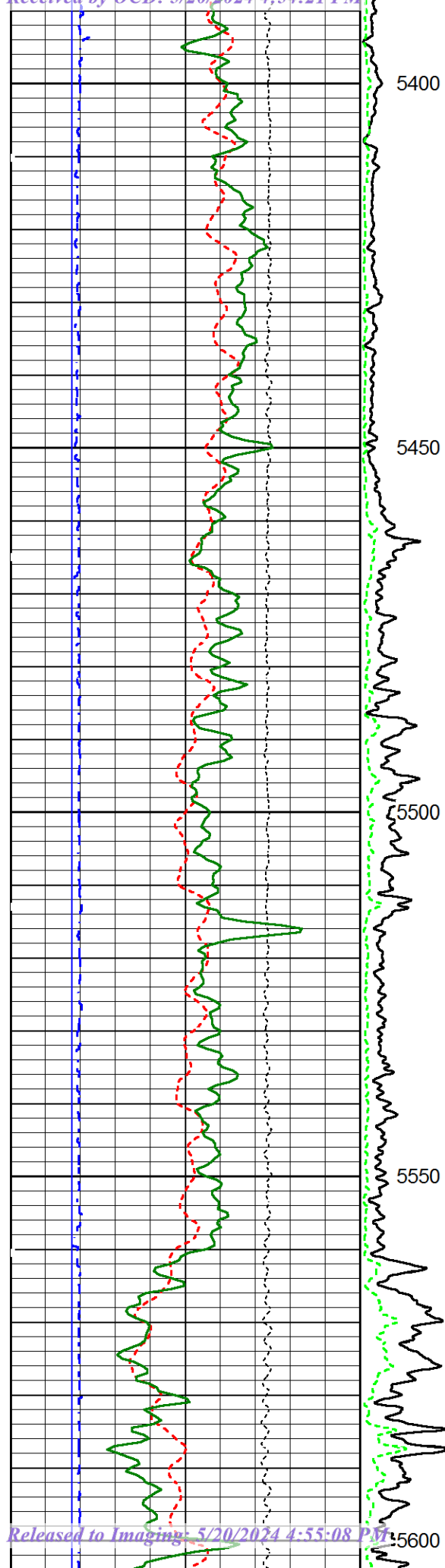


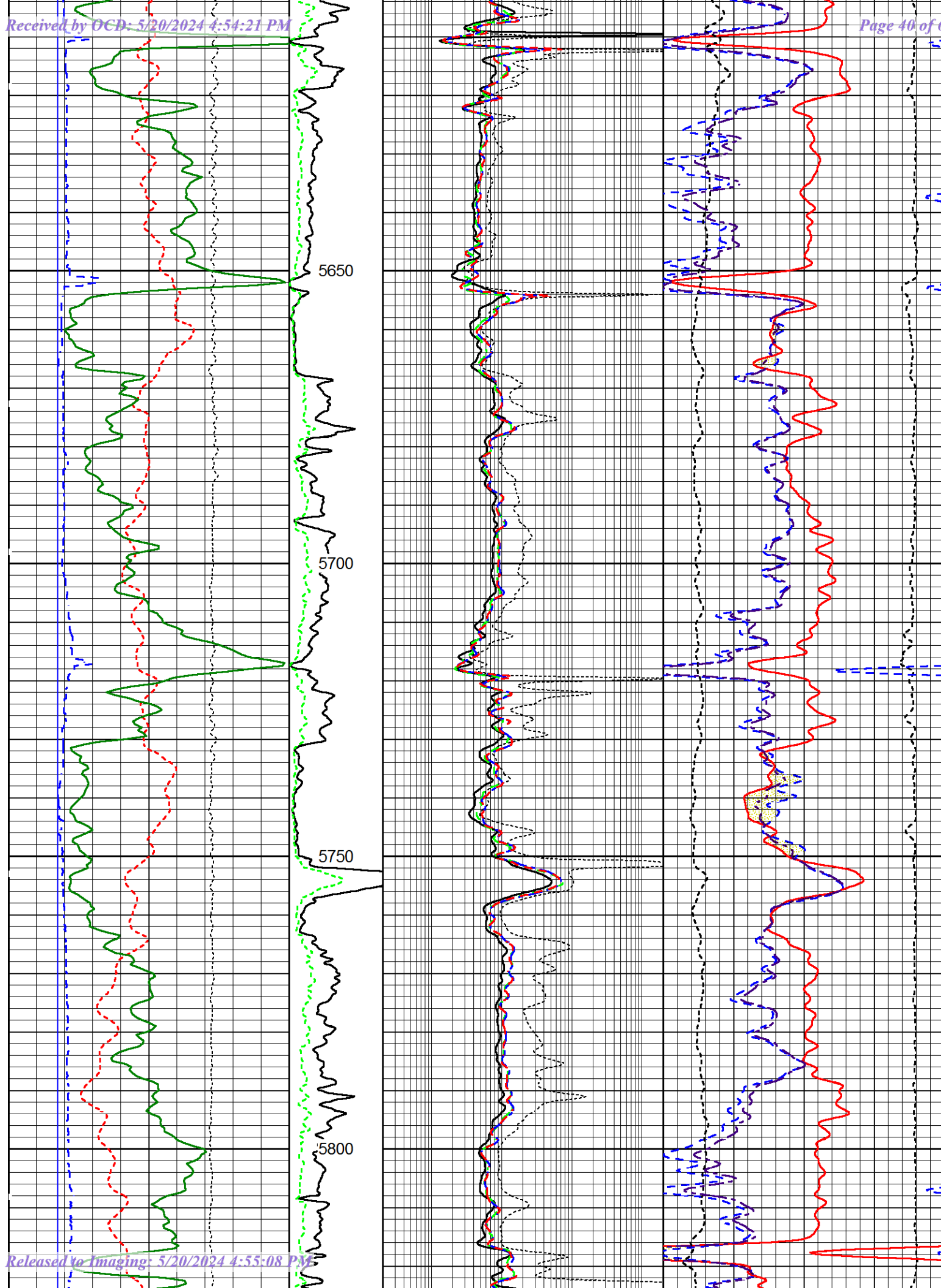


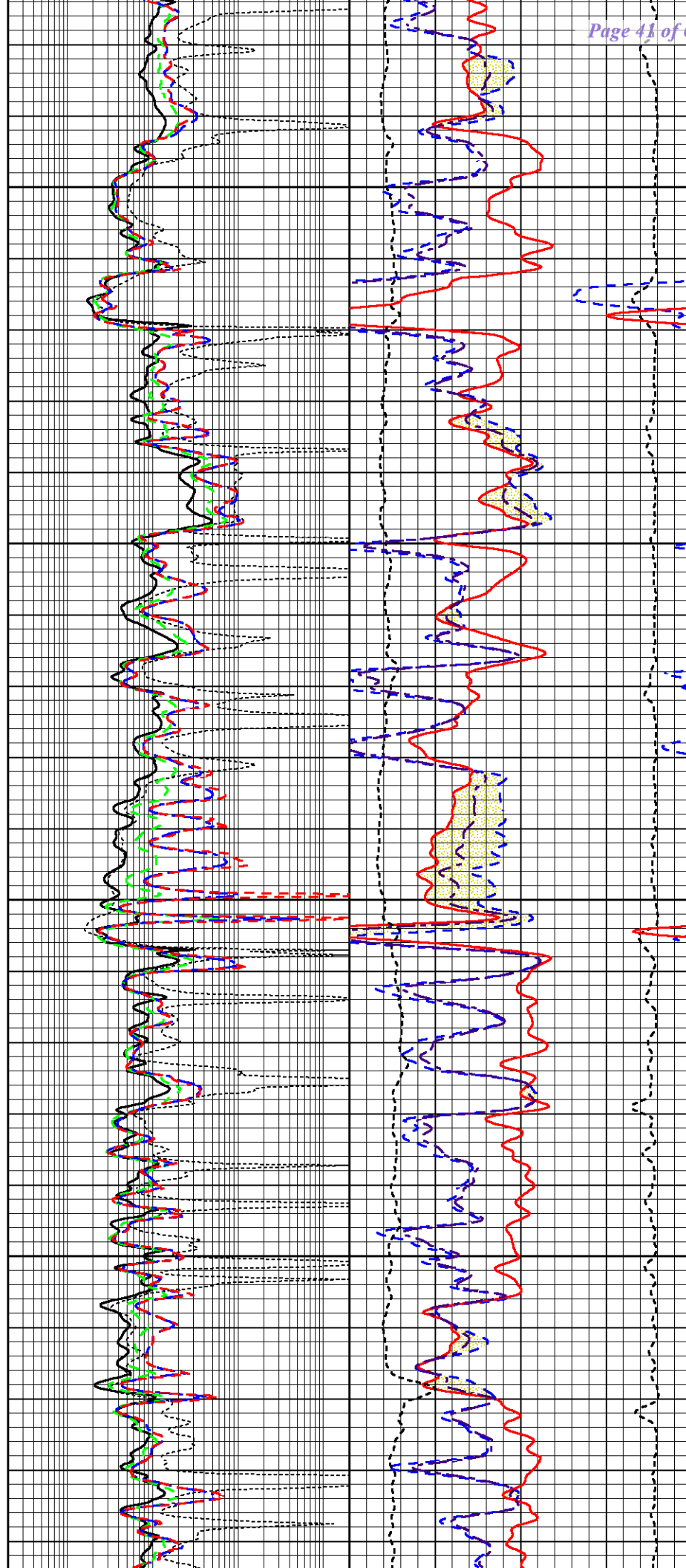
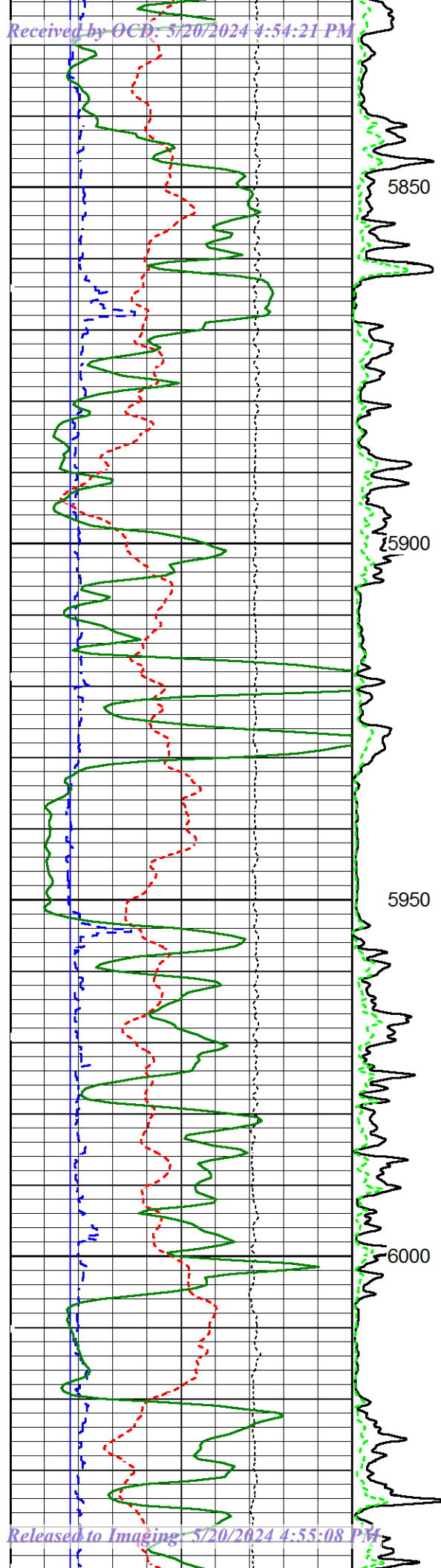


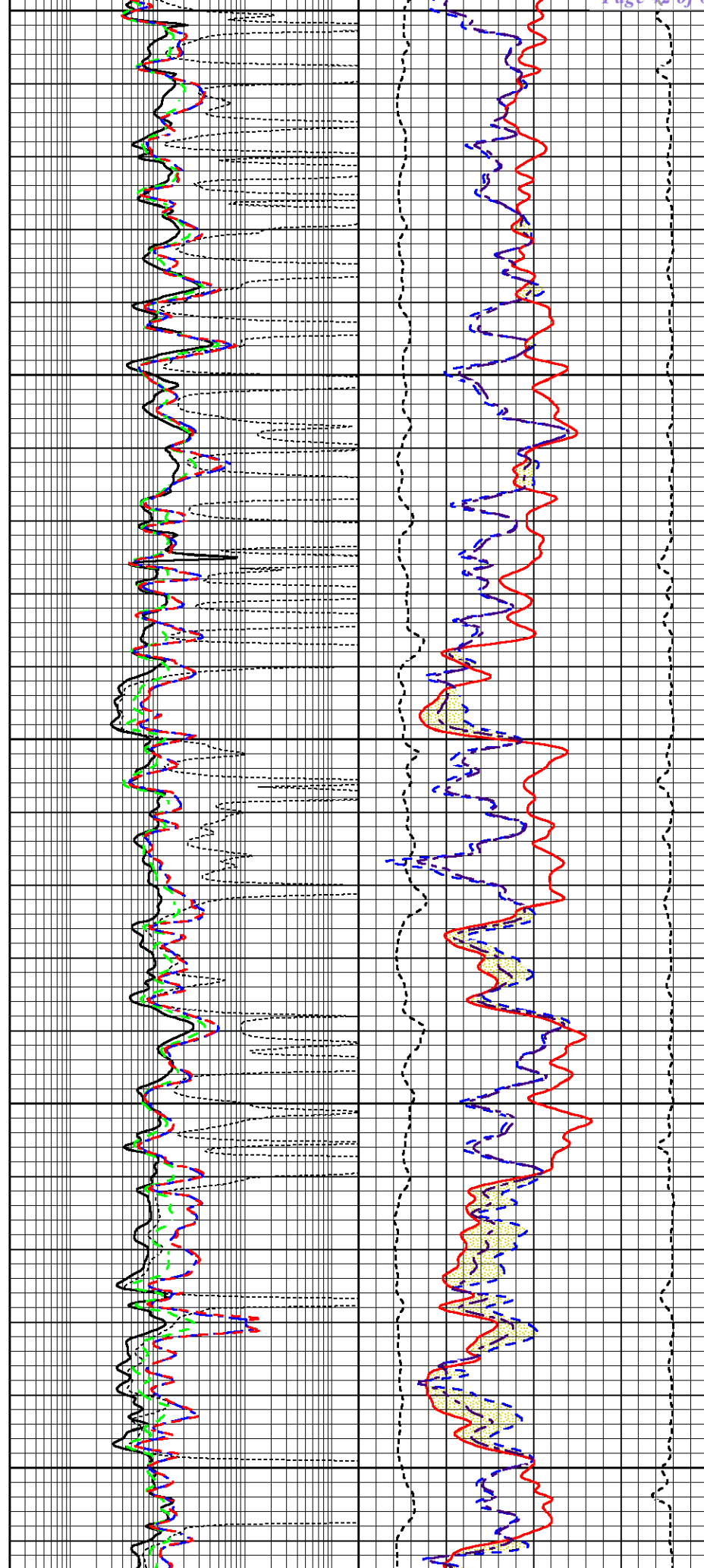
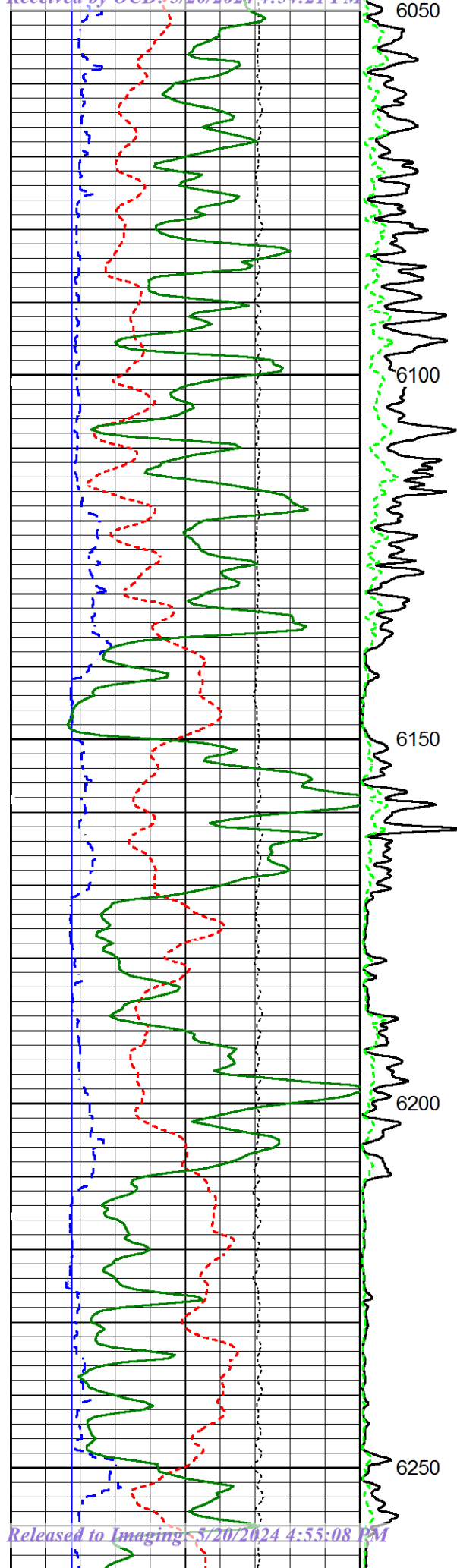


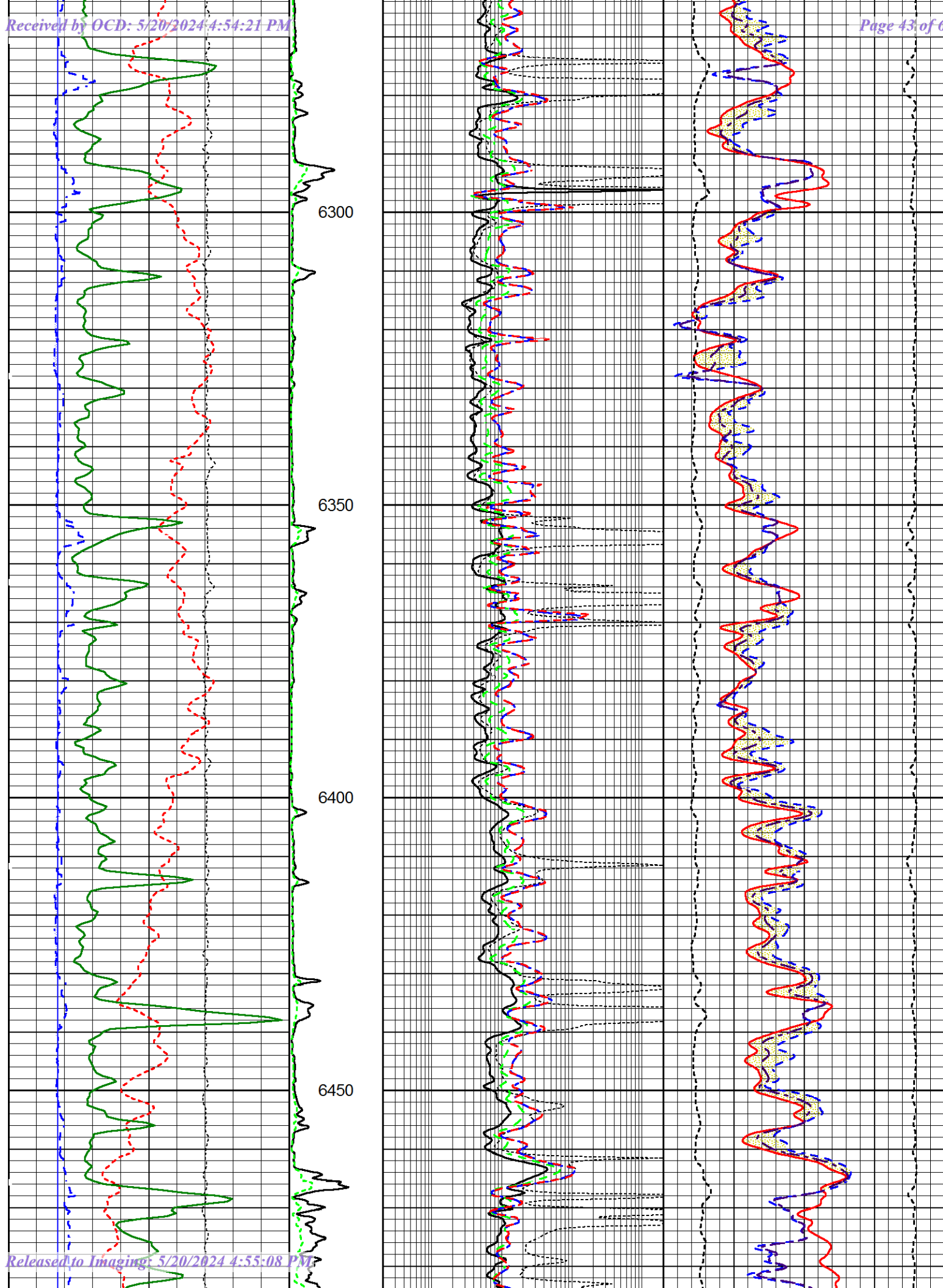


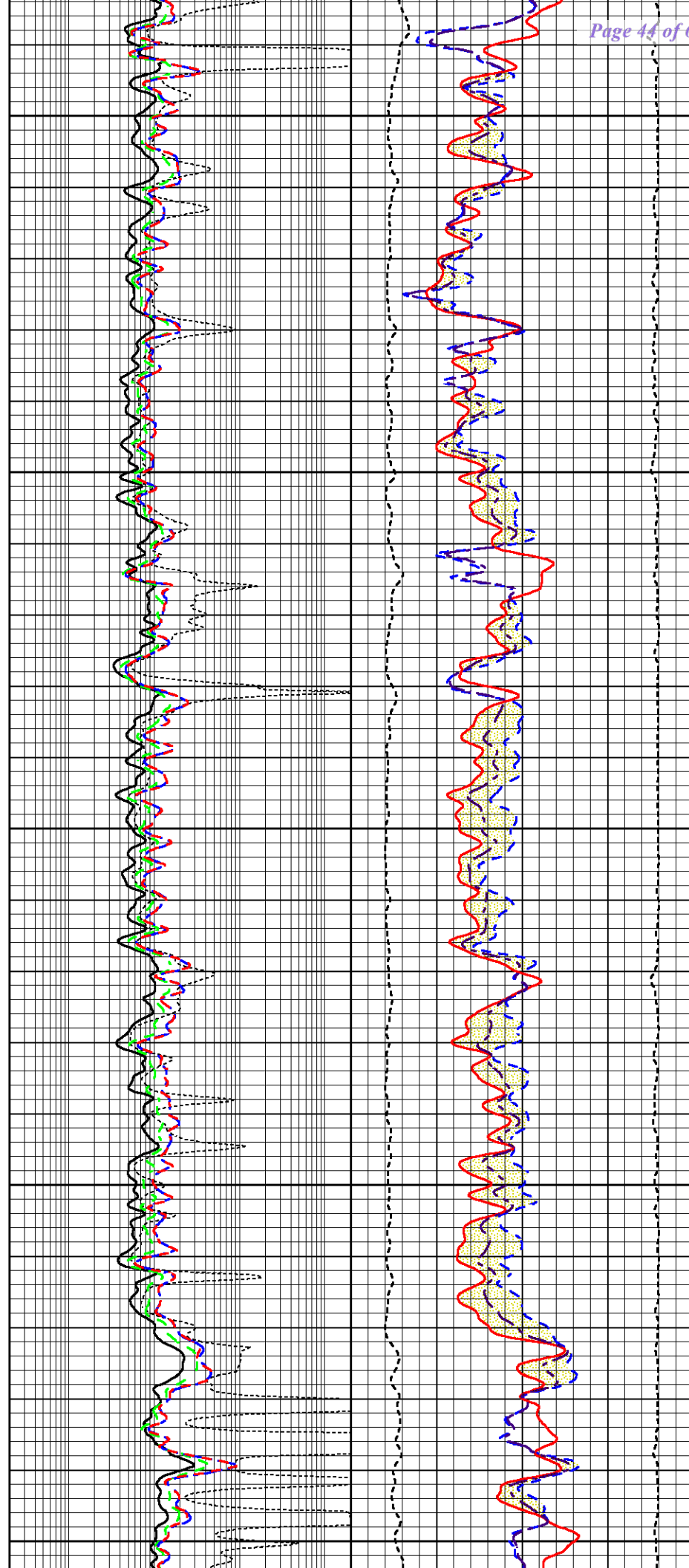
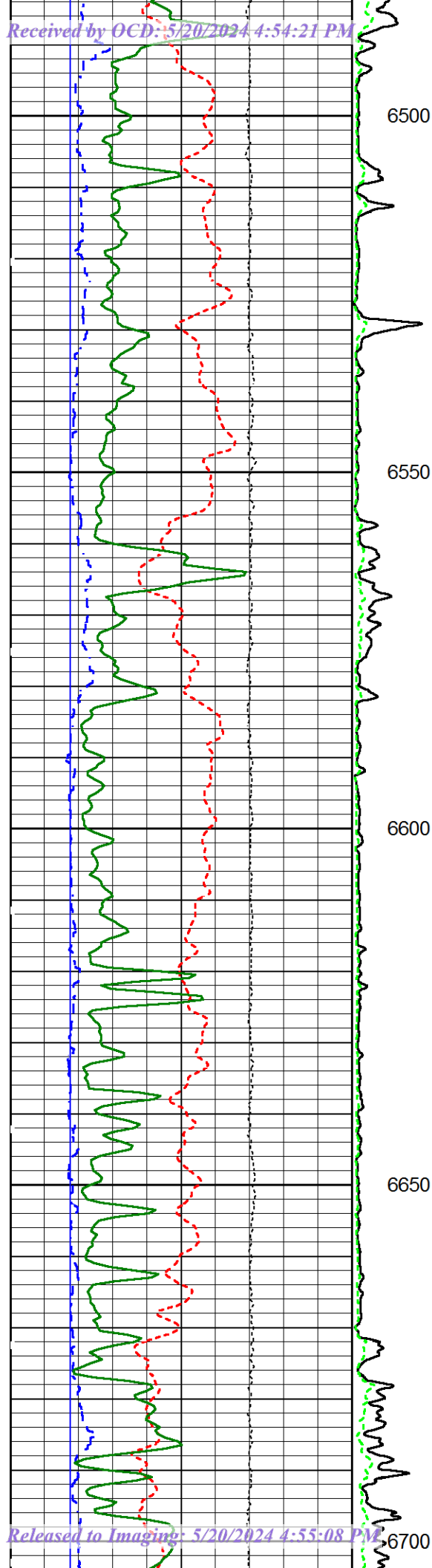


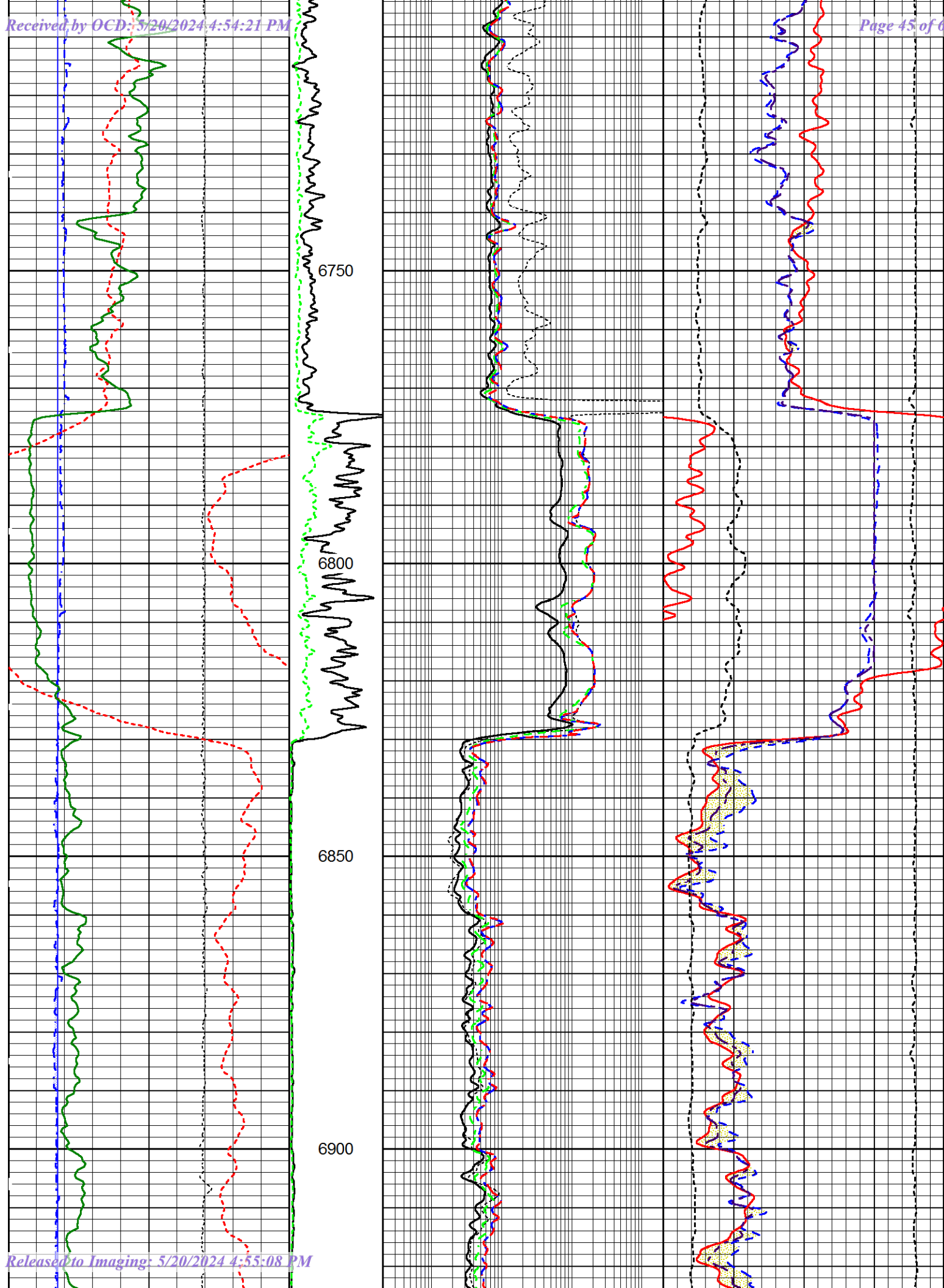


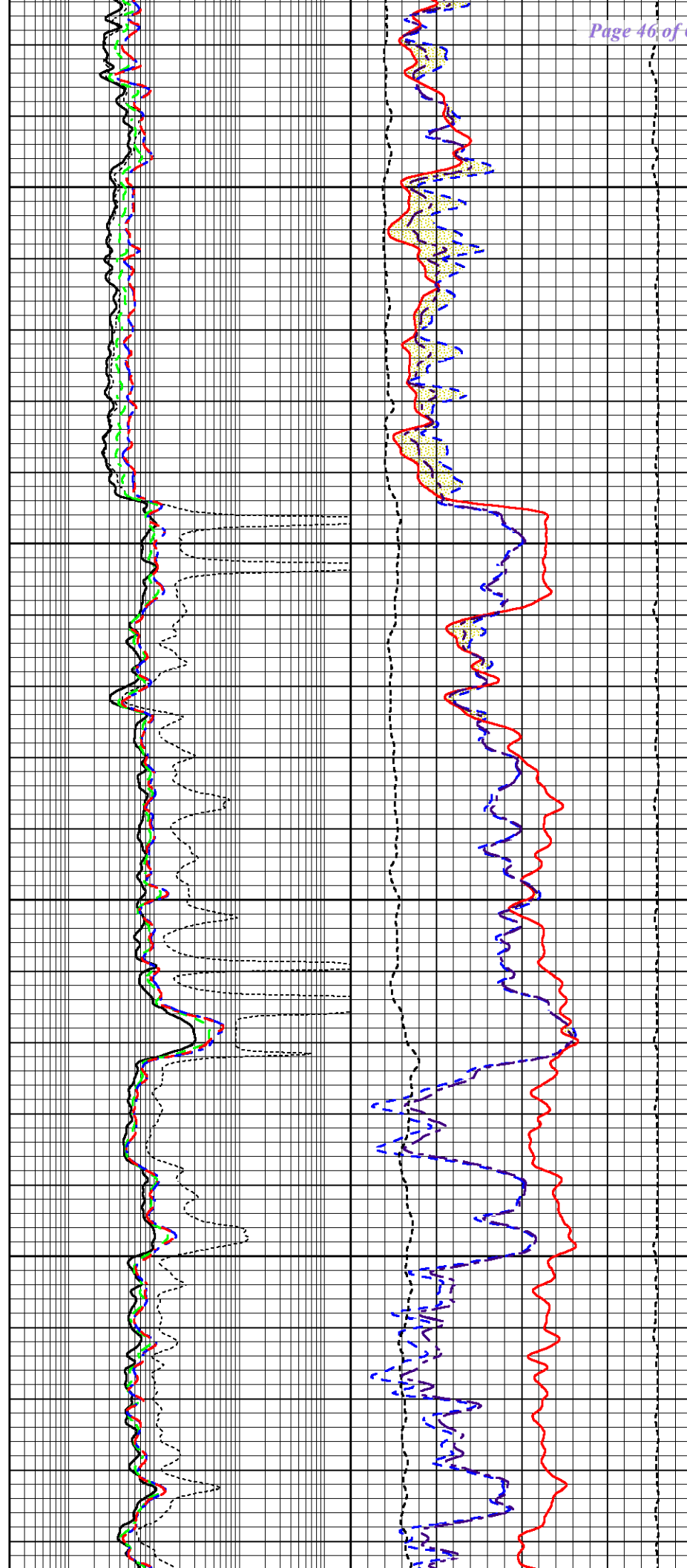
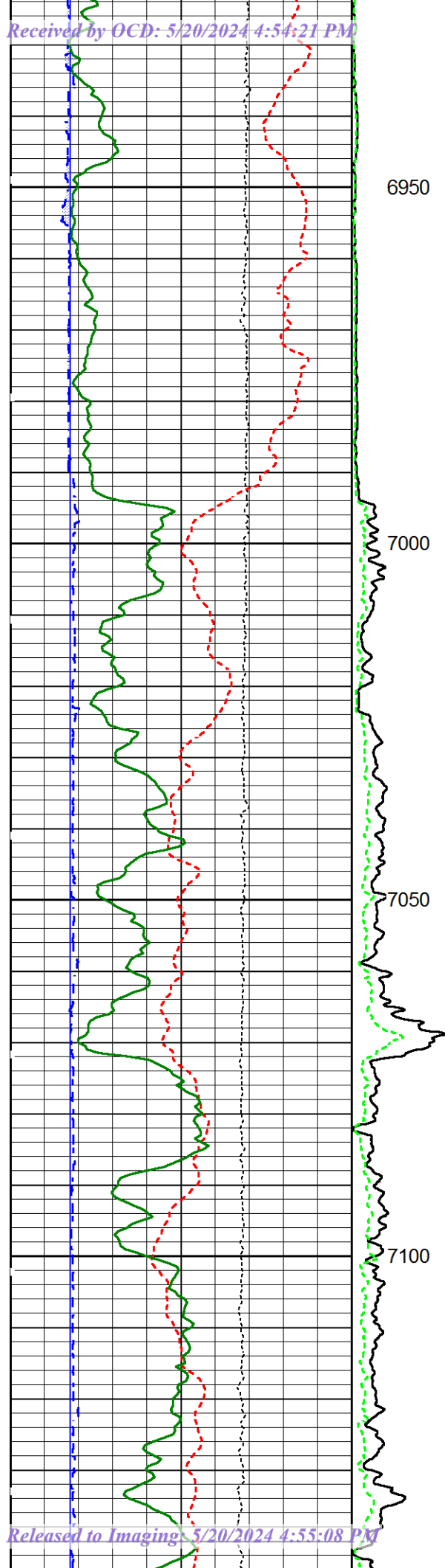


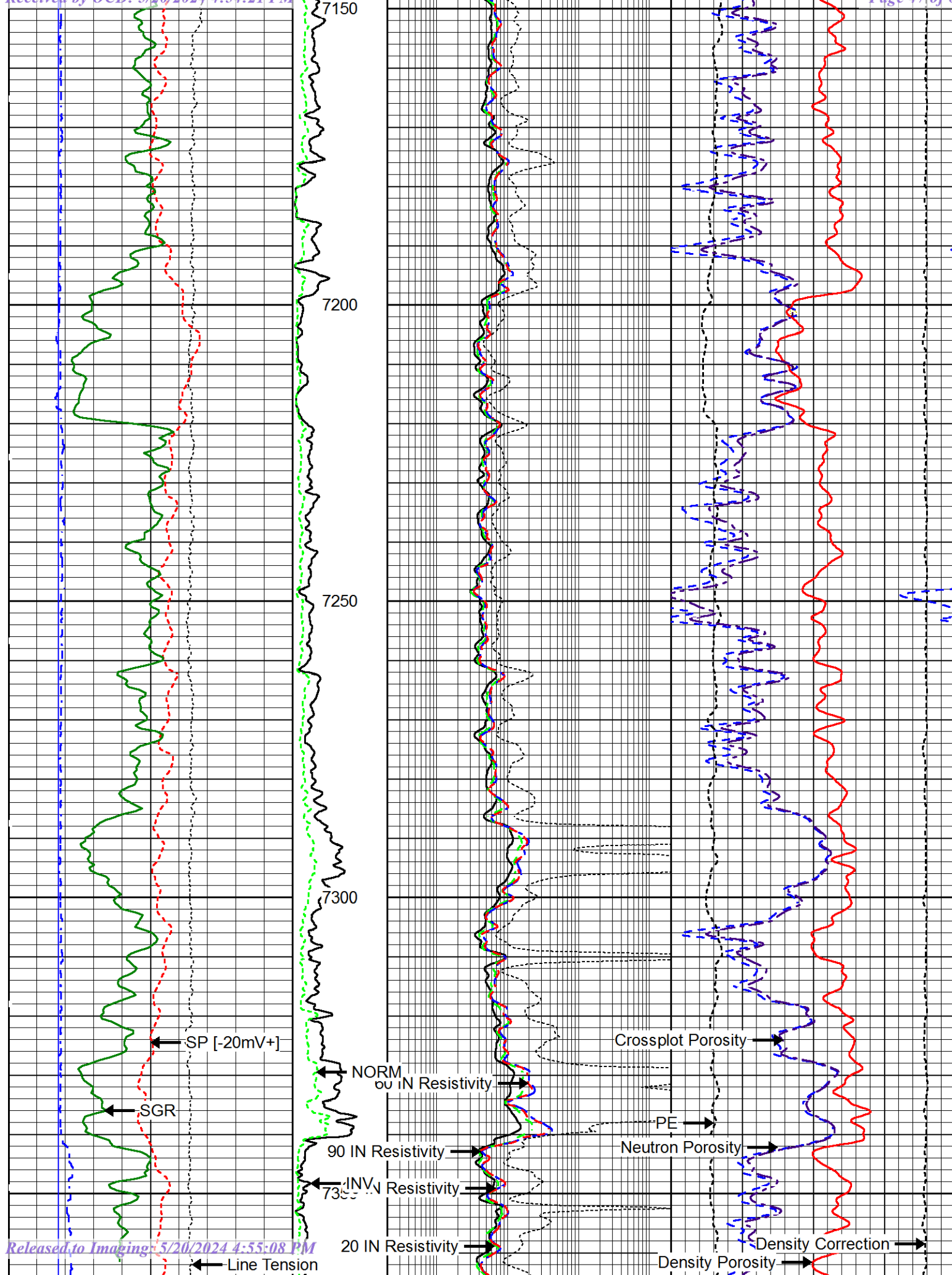


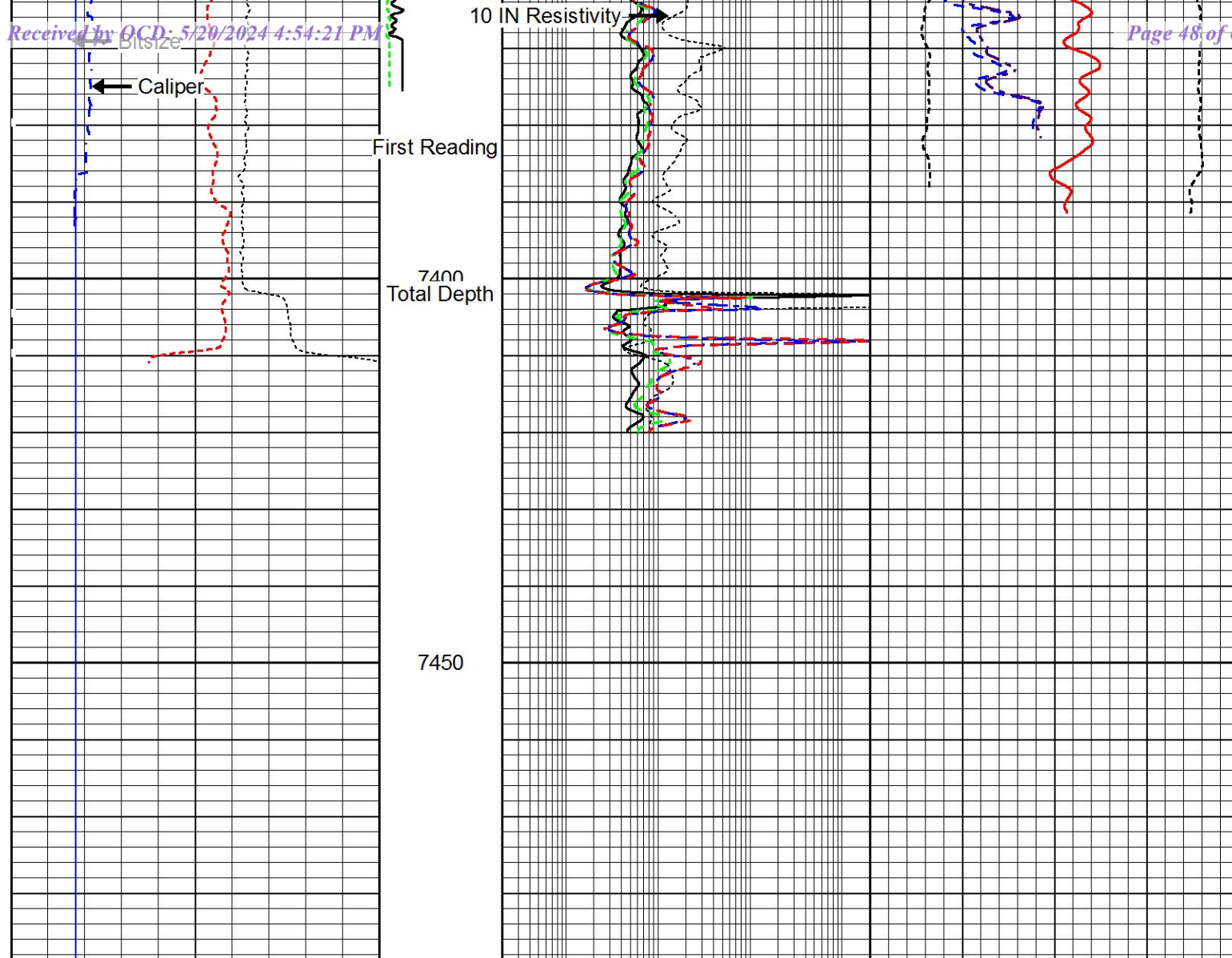












7	Bitsize (in)	17	INV	0.2	10 IN Resistivity (Ohm-m)	2000	Neutron Porosity
7	Caliper (in)	17	(Ohm-m)	0.2	20 IN Resistivity (Ohm-m)	2000	(Porosity Decimal Fraction) -0.1
	SP [-20mV+]	0	20	0.2	30 IN Resistivity (Ohm-m)	2000	Density Porosity
0	SGR (GAPI)	200	NORM	0.2	60 IN Resistivity (Ohm-m)	2000	(Porosity Decimal Fraction) -0.1
	Line Tension		(Ohm-m)	0.2	90 IN Resistivity (Ohm-m)	2000	Crossplot Porosity
	5000 (lb)	0	0				(Porosity Decimal Fraction) -0.1
							0 PE 10 Density Correction
							0.8 (g/cc) -0.2

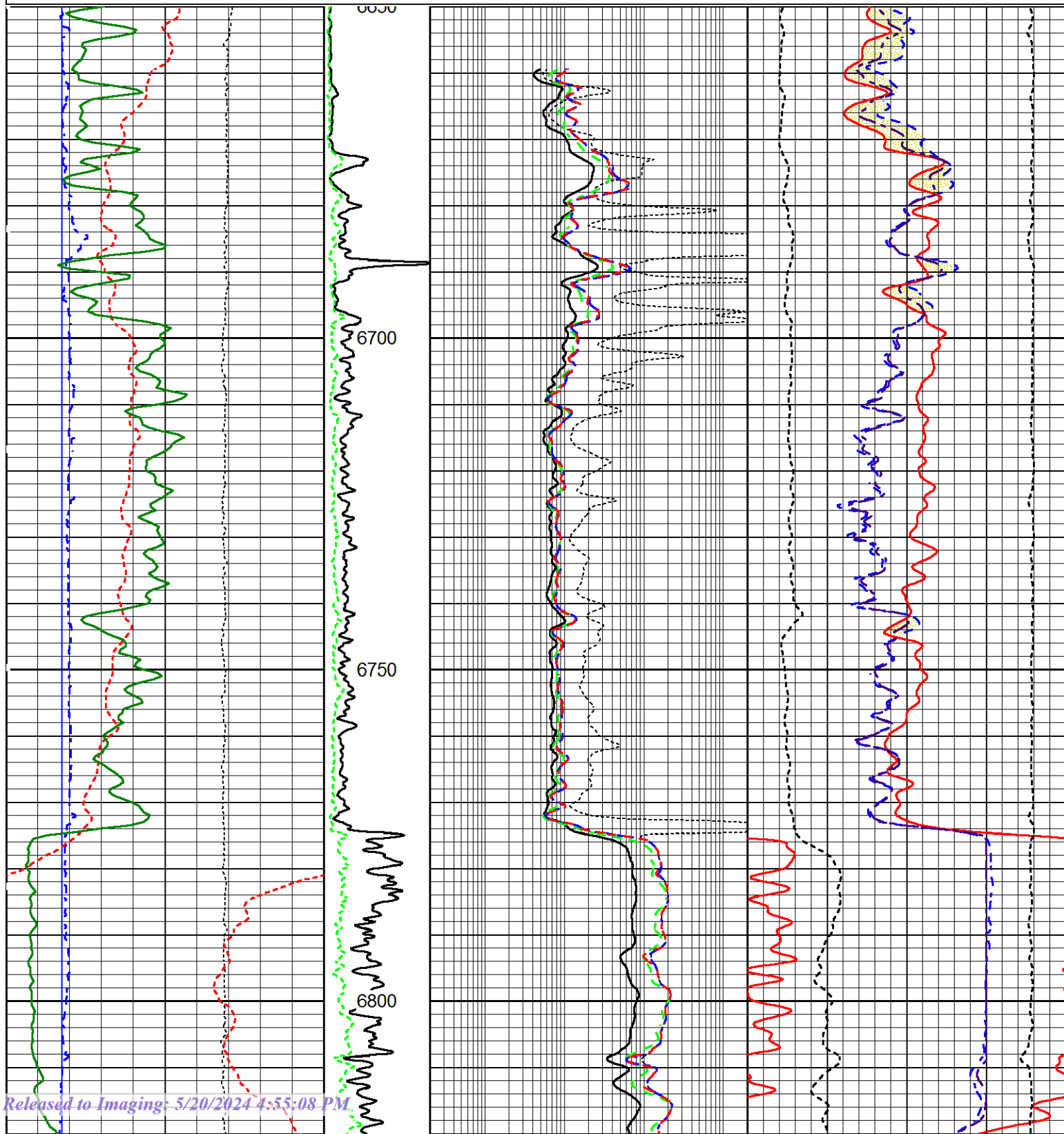


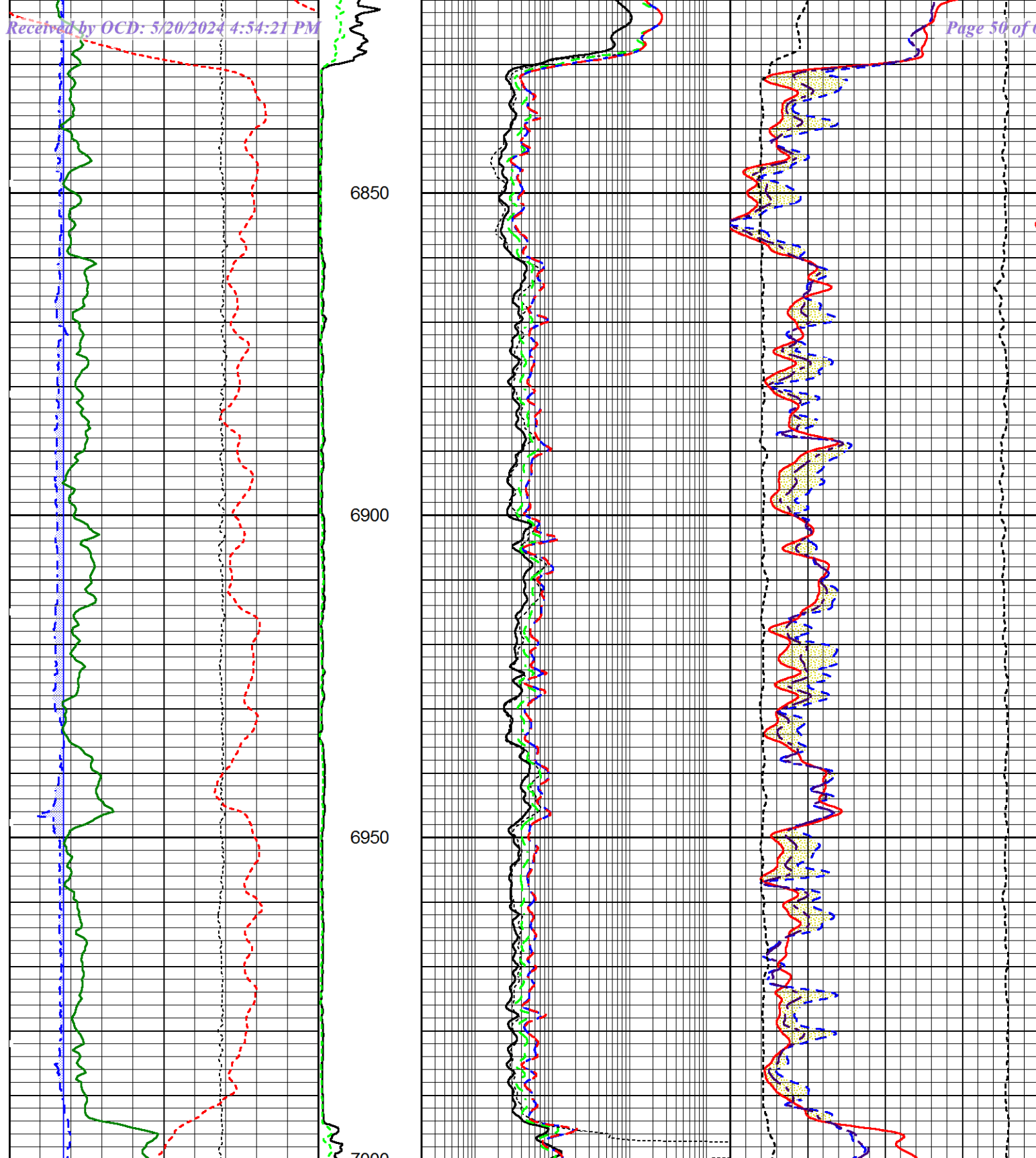
Main Pass



Repeat Pass

7	Bitsize (in)		17	INV (Ohm-m)	0.2	10 IN Resistivity (Ohm-m)		2000	Neutron Porosity		
7	Caliper (in)		17		0.2	20 IN Resistivity (Ohm-m)		2000	0.3	(Porosity Decimal Fraction) -0.1	
SP [-20mV+]			0		20	0.2	30 IN Resistivity (Ohm-m)		2000	Density Porosity	
0	SGR (GAPI)		200	NORM (Ohm-m)	0.2	60 IN Resistivity (Ohm-m)		2000	0.3	(Porosity Decimal Fraction) -0.1	
Line Tension 5000 (lb)			0		20	0.2	90 IN Resistivity (Ohm-m)		2000	Crossplot Porosity	
								0.3	(Porosity Decimal Fraction) -0.1		
					0	PE	10	Density Correction			
								0.8	(g/cc)	-0.2	





7	Bitsize (in)	17	INV	0.2	10 IN Resistivity (Ohm-m)	2000	Neutron Porosity
7	Caliper (in)	17	(Ohm-m)	0.2	20 IN Resistivity (Ohm-m)	2000	(Porosity Decimal Fraction) -0.1
	SP [-20mV+]	0	20	0.2	30 IN Resistivity (Ohm-m)	2000	Density Porosity
0	SGR (GAPI)	200	NORM	0.2	60 IN Resistivity (Ohm-m)	2000	(Porosity Decimal Fraction) -0.1
	Line Tension		(Ohm-m)	0.2	90 IN Resistivity (Ohm-m)	2000	Crossplot Porosity
	5000 (lb)	0	0				(Porosity Decimal Fraction) -0.1
							0 PE 10 Density Correction
							0.8 (g/cc) -0.2



Repeat Pass

Log Variables DatabaseC:\Sondex\Sondex Warrior\Data\enduringreswlybrook.db
Dataset West_Lybrook/well/run1/main/_vars_

Top - 417.97 ft

AIR_HOLE?	BOREID in	BOTTEMP degF	CASED?	CASEOD in	CASETHCK in	CASEWGHT lb/ft	DE-CENT
No	14.5	149	Yes	13.375	0	40	Yes
DEVI deg	FLUIDDEN g/cc	FRMSALIN kppm	MATRXDEN g/cc	MUDSALIN kppm	MudWgt lb/gal	NPORSEL	PERFS
0	1	0	2.71	0	9.4	Limestone	0
SO in	SPSHIFT mV	SRFTEMP degF	TDEPTH ft				
0.5	0	68	7408				

417.97 ft - Bottom

AIR_HOLE?	BOREID in	BOTTEMP degF	CASED?	CASEOD in	CASETHCK in	CASEWGHT lb/ft	DE-CENT
No	8.75	149	No	7	0	26	Yes
DEVI deg	FLUIDDEN g/cc	FRMSALIN kppm	MATRXDEN g/cc	MUDSALIN kppm	MudWgt lb/gal	NPORSEL	PERFS
0	1	0	2.71	0	9.4	Limestone	0
SO in	SPSHIFT mV	SRFTEMP degF	TDEPTH ft				
0.5	0	68	7408				

Calibration Report

Database File enduringreswlybrook.db
Dataset Pathname West_Lybrook/well/run1/pass5
Dataset Creation Tue Jan 15 11:30:34 2019 by Log Sondex

Induction Array Tool Calibration Report

Serial Number: B10110
Tool Model: 002

Master Calibration Performed: Fri Oct 26 15:32:33 2018
Temperature: 94.8 degF

Sonde Error:

Array	1	2	3	4	5	6	7	
Real	192.0	-12.7	-40.5	-15.0	-2.0	2.3	2.9	mmho/m
Imaginary	-18.2	5.6	-8.9	-11.8	-22.5	-1.2	5.1	mmho/m

Loop Gain:

Array	1	2	3	4	5	6	7	
Loop (real)	537.7	678.5	1295.3	1394.1	1144.8	712.8	404.8	mmho/m
Loop (imaginary)	73.3	92.5	389.8	419.5	344.5	214.5	121.8	mmho/m
Real	754.6	727.3	1235.4	1365.6	1152.8	736.4	421.2	mmho/m
Imaginary	57.5	104.4	378.7	408.4	324.7	218.8	133.9	mmho/m
Gain (mV)	0.050	0.017	1.015	1.010	0.004	0.071	0.000	

Before Survey Verification Performed:				Tue Jan 15 07:30:10 2019			
Sonde 1 Temperature:				91.3 degF			
Sonde 2 Temperature:				93.3 degF			
Array 1 Temperature:				93.3 degF			
Array	1	2	3	4	5	6	7
TxIR	0.0	0.0	-0.1	-0.1	-0.1	-0.1	-0.1
TxIX	0.0	0.0	0.2	0.2	0.2	0.2	0.2
Tx Magnitude	0.0	0.0	0.2	0.2	0.2	0.2	0.2
Gain	112.1	152.3	146.9	151.0	151.8	159.4	167.5
RxCR	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0	-0.0
RxCX	0.1	0.1	0.1	0.1	0.1	0.1	0.1
RxC Magnitude	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Tool Module Parameters							
Software Version:				8.0.0.4			
Borehole Size Source:				CALI			
Mud Resistivity Source:				MUDRES			
Mud Resistivity At Surface:				N/A			
Mud Resistivity Surface Temperature:				N/A			
Borehole Corrections:				Automatic			
Minimum Standoff:				0.4 in			
Litho Density Tool Calibration Report							
Serial Number:				B0872S70997B			
Tool Model:				B10872			
Caliper Calibration Performed:				Mon Jan 07 16:48:54 2019			
	Diameter			Reading			
Small Ring:	9.000	in		1709.800	cps		
Large Ring:	13.000	in		2058.300	cps		
Gain:	0.0115						
Offset:	-10.6247						
Master Calibration Performed:				Mon Jan 07 16:27:47 2019			
Source Number:				70997B			
Medium:				Water			
Al Block Density:				2.6002 g/cc			
	Background	Al Block	Al Block + Fe				
SS1	677.4	4467.7	3791.9	cps			
SS2	1927.0	30904.2	26367.3	cps			
SSTOTAL	4505.5	49338.8	41684.1	cps			
LITH	96.2	509.0	303.4	cps			
LL	188.4	862.2	753.9	cps			
LU	542.8	1119.9	1033.7	cps			
LS	731.2	1982.1	1787.6	cps			
LSTOTAL	1379.4	4808.5	3883.4	cps			
SSHV	1468.8	1474.0	1474.3	V			
LSHV	1414.7	1419.6	1421.4	V			
SSFF	-0.011	0.005	0.006				
LSFF	0.005	0.002	-0.007				

SS1	677.4	692.2	690.2	cps
SS2	1927.0	1946.8	1946.4	cps
SSTOTAL	4505.5	4577.9	4562.5	cps
LITH	96.2	98.4	95.6	cps
LL	188.4	188.2	186.7	cps
LU	542.8	548.0	551.3	cps
LS	731.2	736.1	738.0	cps
LSTOTAL	1379.4	1392.8	1389.2	cps
SSHV	1468.8	1461.4	1461.7	V
LSHV	1414.7	1407.4	1407.9	V
SSFF	-0.011	0.007	-0.014	
LSFF	0.005	0.016	0.003	

Tool Module Parameters				
Software Version:	8.0.0.6			
Borehole Size Source:	CALI			
Pad Type:	2			

Compensated Neutron Tool Calibration Report

Serial Number:	C2541S59796G
Tool Model:	009

Master Calibration Performed:	Thu Jan 03 15:00:01 2019			
Source Number:	59796G			
Short Spacing Counts:	4187.83		cps	
Long Spacing Counts:	156.76		cps	
High Voltage:	1367.67		V	
Target Ratio:	26.6600			
Ratio:	26.7144			
K-Factor:	0.9980			

Before Survey Verification Performed:				
After Survey Verification Performed:				
Verifier Number:	6490NN			
Verifier Values	Master Cal	Before Survey	After Survey	
Short Spacing Counts:	247.78			cps
Long Spacing Counts:	253.81			cps
High Voltage:	1367.62			V
Ratio:	0.9762			

Tool Module Parameters				
Software Version:	8.0.0.5			
Borehole Size Source:	CALI			
Clip Crossplot Porosity:	YES			
Lithology Identification Parameters:	Calcite	Quartz	Dolomite	
Uma:	13.77	4.79	9.03	barns/cc
RHOMA:	2.71	2.65	2.88	g/cc

Micro Electric Log Calibration Report

Serial Number:	002220331
Tool Model:	001

Caliper Calibration Performed:	Thu Jan 10 10:00:24 2019
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	Pad Arm			Backup Arm		
	Radius		Reading	Radius		Reading
Small Jig:	4.000	in	1353.200	4.000	in	1365.300
Large Jig:	6.000	in	1402.600	6.000	in	1410.500
Gain:			0.0405			0.0442
Offset:			-50.7854			-56.4115

Pad Calibration

	Inverse	Normal
Gain:	1.0000	1.0000
Offset:	0.0000	0.0000

Tool Module Parameters

Software Version: 8.0.0.4

Borehole Fluid Resistivity Calibration Report

Serial Number: 000001
Tool Model: 001

Master Calibration Performed: Thu Sep 16 10:07:52 2010

Resistivity Polynomial Equation:

$$0.2530x^2 + 0.5610x + 0.0310$$

Temperature Calibration:

Reference		Reading	
53.60	degF	846.40	bits
107.42	degF	919.20	bits

Spectral Gamma Ray Calibration Report

Serial Number: 10012700
Tool Model: 003

Performed: Thu Jan 10 12:00:24 2019

Source Number: #14
Calibrator Value: 207.0 API

Background Reading: 151.7 cps
Calibrator Reading: 1681.1 cps

Sensitivity: 0.135 API / cps

Performed: Fri Jan 11 11:30:32 2019

Verifier Number: 571

Concentrations	K %	U ppm	T ppm
	5.4	6.9	25.3

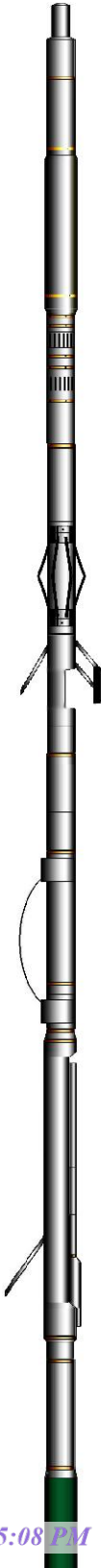
K Peak: Passed
U Peak:
T Peak:

Before Survey Verification Performed: Tue Jan 15 07:15:24 2019
After Survey Verification Performed: Tue Jan 15 15:35:24 2019

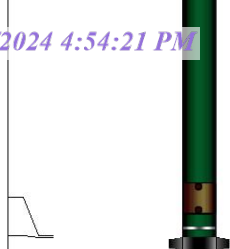
	Before Survey	After Survey	
Background Reading:	154.5	152.8	cps
Verifier Reading:	1207.5	1184.5	cps

Passed
Passed
Passed

U Peak:		
T Peak:		
Tool Module Parameters		
Software Version:	8.0.0.5	
Borehole Correction:	No	
Stand Off:	N/A	
Mud Type:	N/A	
Borehole Size Source:	N/A	

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
CHD	53.66		CHD-001 (10012297) Cable Head	2.19	3.38	35.00
			XTU-008 (C10001400) Crossover Ultrawire Toolbus to Ultralink	2.08	3.38	47.00
SGR	46.32		SGR-003 (10012700) Spectral Gamma Ray Tool	4.94	3.88	120.00
BFR	42.65		BFR-001 (000001) Borehole Fluid Resitivity	3.80	3.38	75.00
Overbody	38.20		Overbody-Over-cen Overbody Centralizer	3.00	3.38	10.00
			MEL-001 (002220331) Micro Electric Log	9.17	3.38	190.00
MEL	33.28					
KJT	31.49		KJT-001 (10010515) Knuckle Joint	2.86	3.38	72.00
CNLSC	25.59		CNL-009 (C2541S59796G) Compensated Neutron Logging Tool	5.28	3.38	100.00
CNSSC	25.09					
			LDT-B10872 (B0872S70997B) Litho Density Tool	9.75	4.50	310.00
LDT	15.44					
IAT	8.44		IAT-002 (D101110)	10.00	3.38	100.00

SP 0.43
BN 0.38



BN-SOFF (000001)
Bottom Nose Standoff

0.38 6.88 6.00

Dataset: enduringreswlybrook.db: West_Lybrook/well/run1/main
Total length: 53.66 ft
Total weight: 1161.00 lb
O.D.: 6.88 in

Company: Enduring Resources

Well: West Lybrook Unit 2309-24 N WSW

Field: West Lybrook

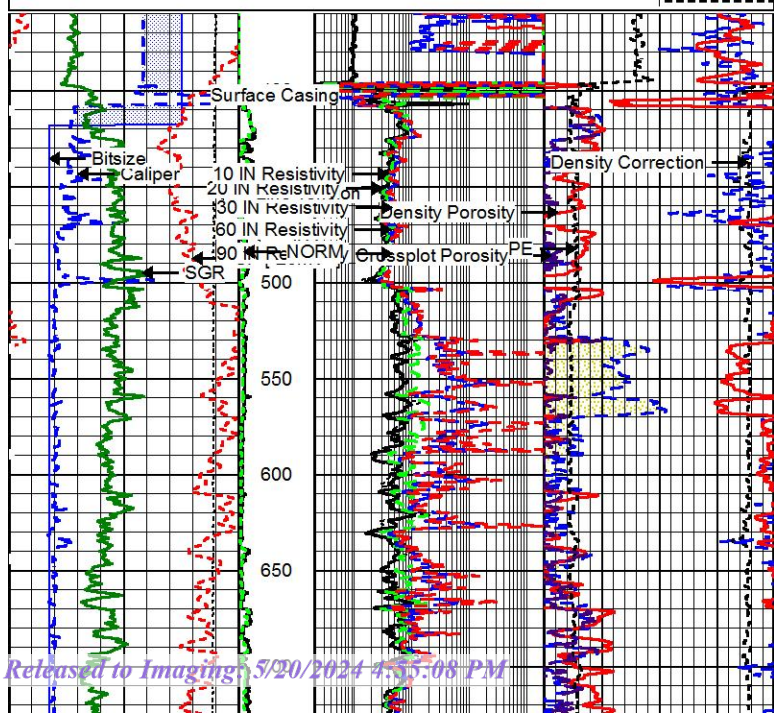
State: New Mexico

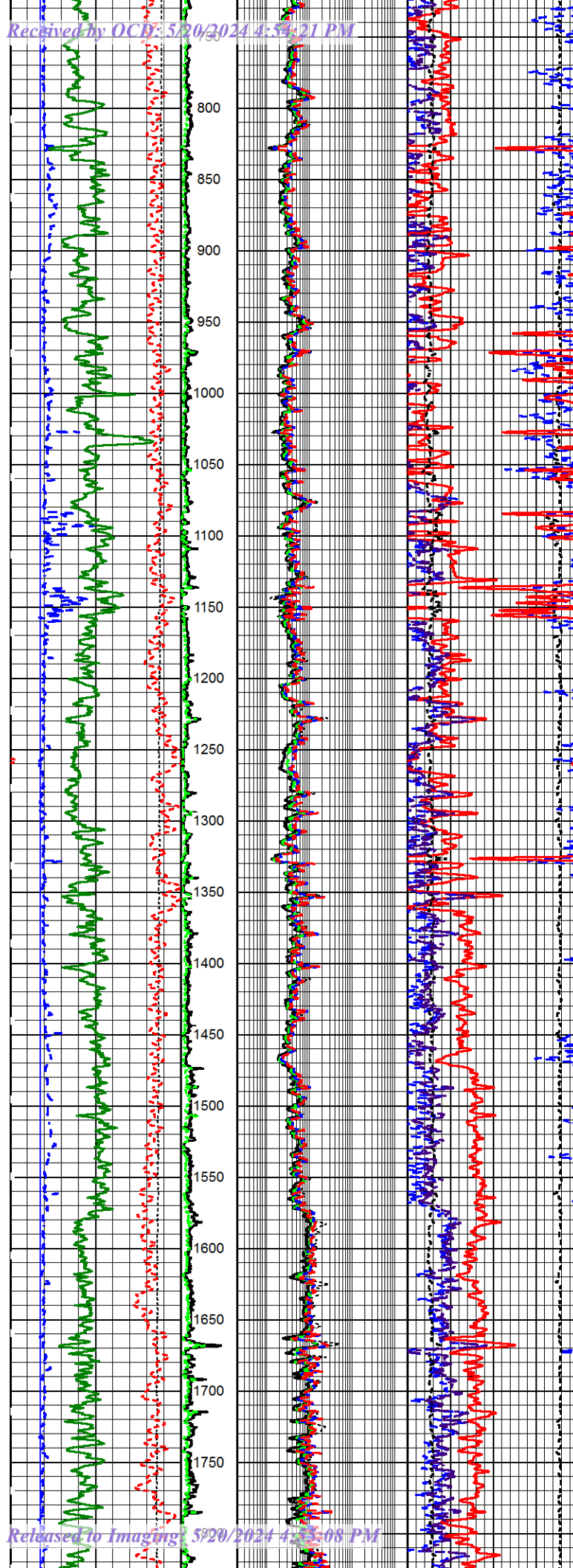


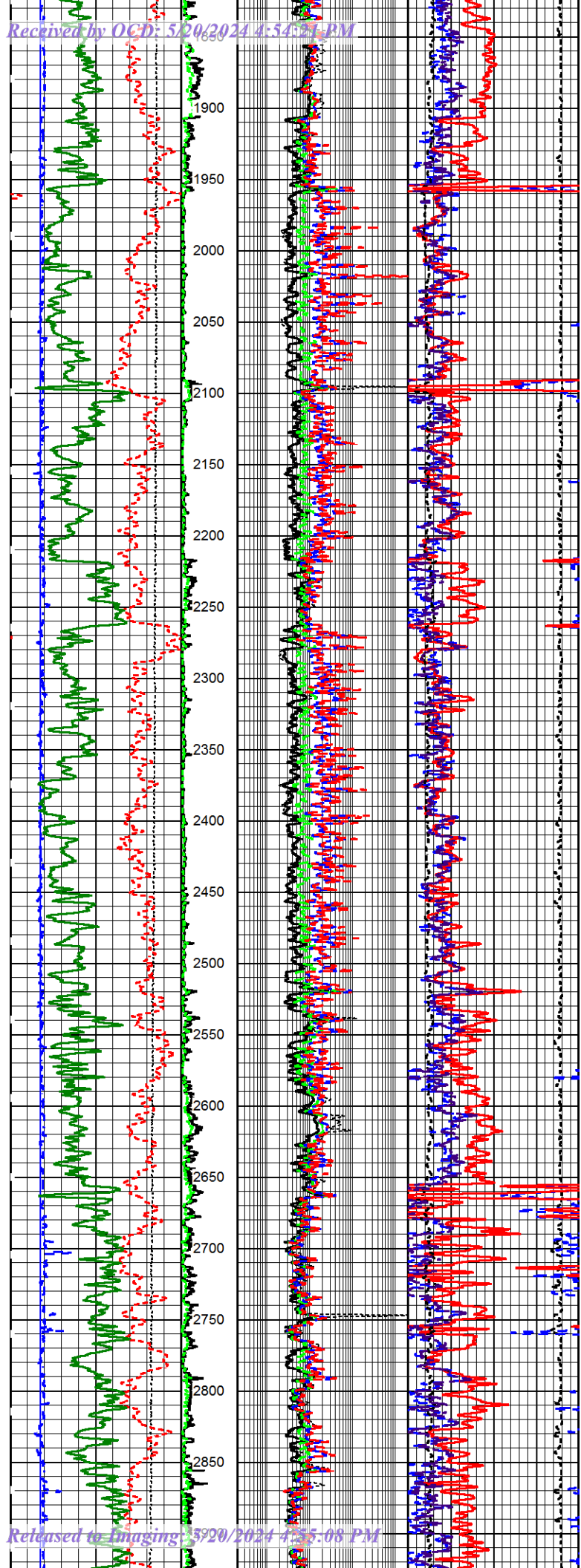
Main Pass

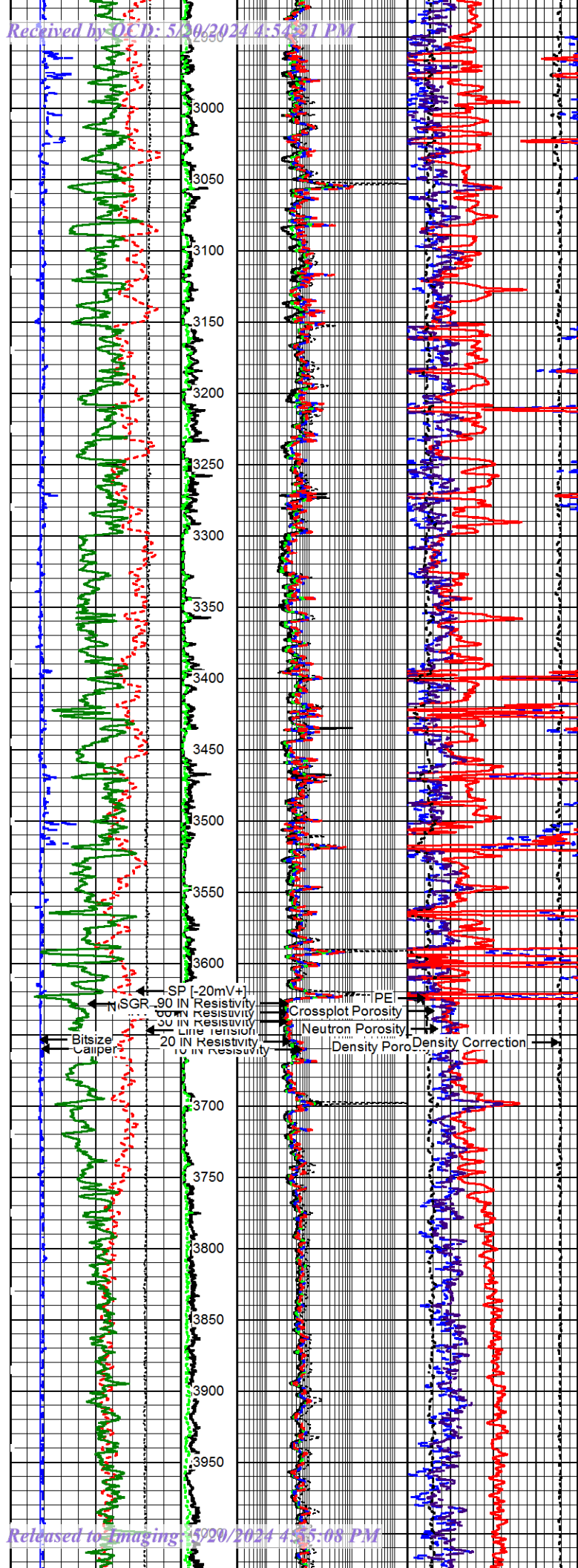
Database File enduringreswlybrook.db
Dataset Pathname West_Lybrook/well/run1/main
Presentation Format 3com_iat
Dataset Creation Tue Jan 15 15:23:37 2019
Charted by Depth in Feet scaled 1:1200

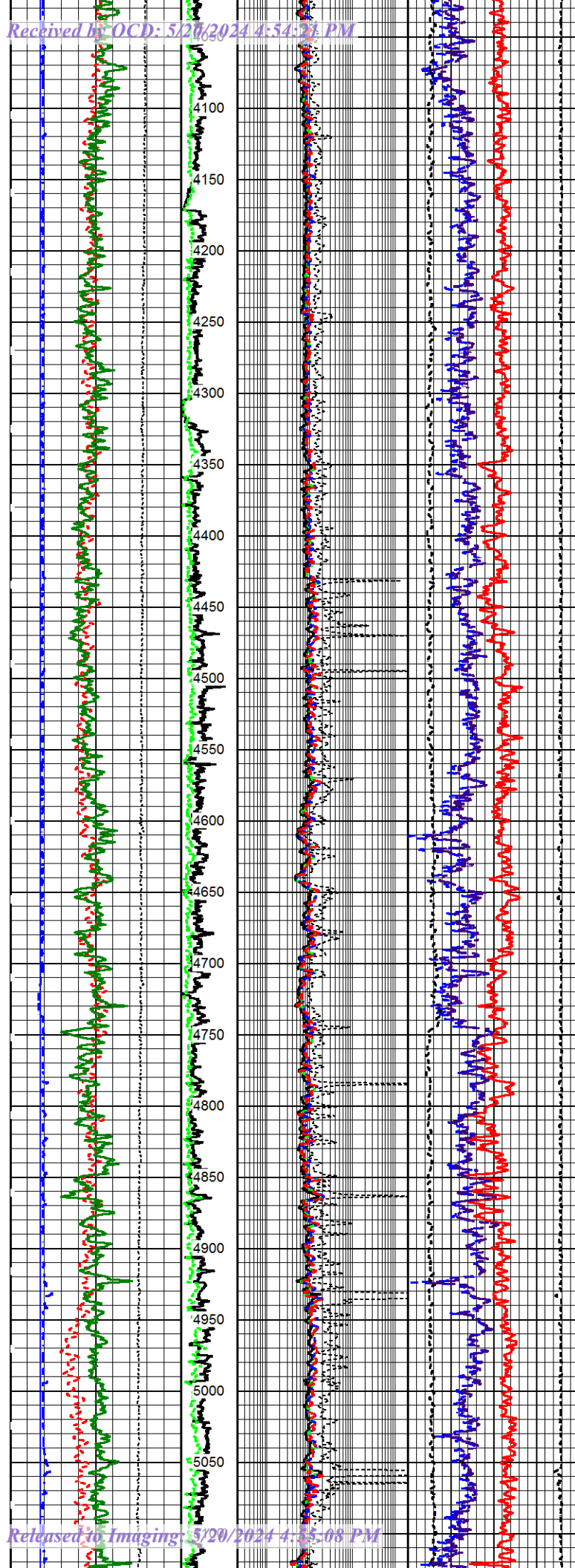
7	Bitsize (in)	17	INV	10 IN Resistivity	Neutron Porosity
7	Caliper (in)	17	Ohm-m	0.2 (Ohm-m) 2000	Porosity Decimal Fraction
	SP [-20mV+]	0 20		20 IN Resistivity	0.3 -0.1
0	SGR (GAPI)	200	NORM	0.2 (Ohm-m) 2000	Density Porosity
	Line Tension	Ohm-m		30 IN Resistivity	Porosity Decimal Fraction
	5000lb) 0	0 20		0.2 (Ohm-m) 2000	0.3 -0.1
				60 IN Resistivity	Crossplot Porosity
				0.2 (Ohm-m) 2000	Porosity Decimal Fraction
				90 IN Resistivity	0.3 -0.1
				0.2 (Ohm-m) 2000	0 PE 10 Density Correcti
					(g/cc)
					0.8 -0.2

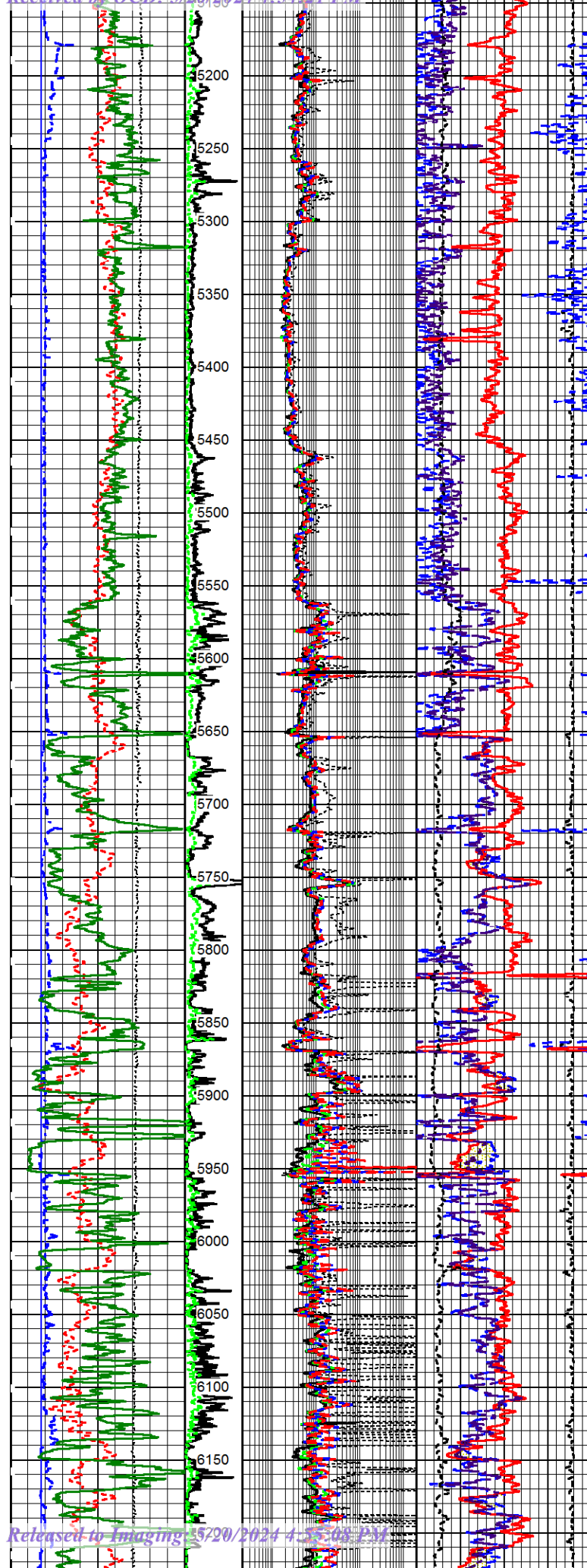


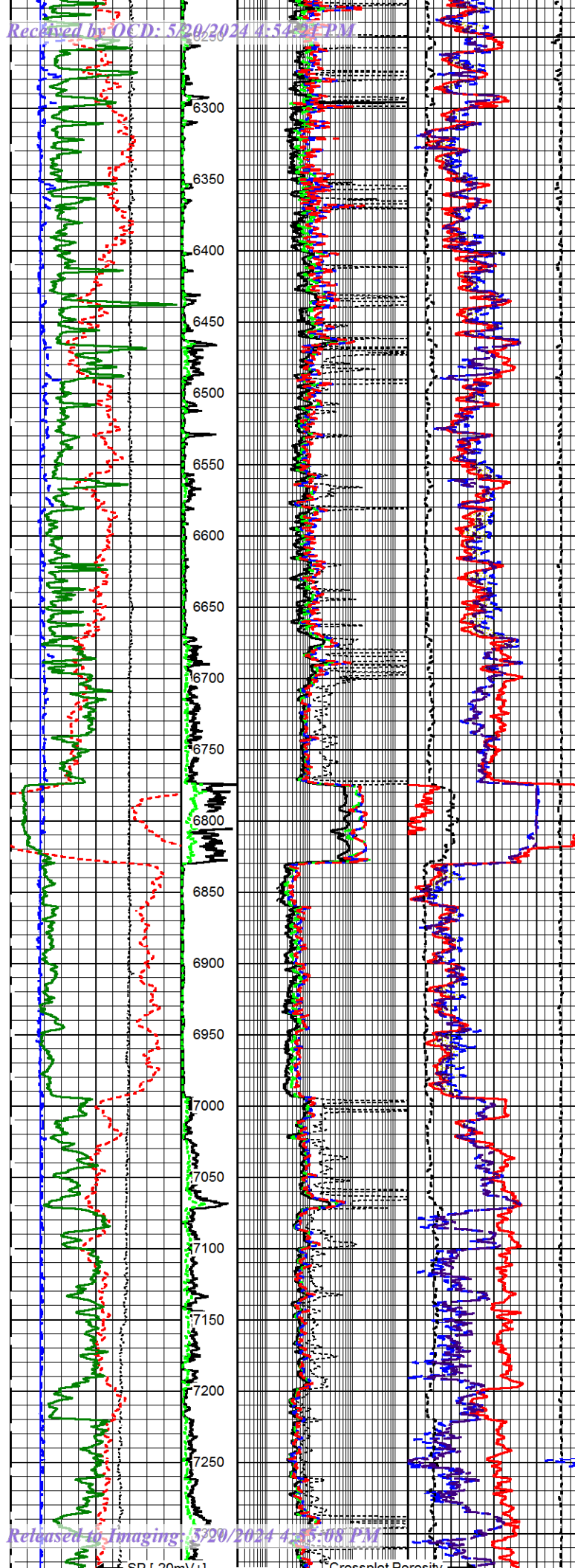


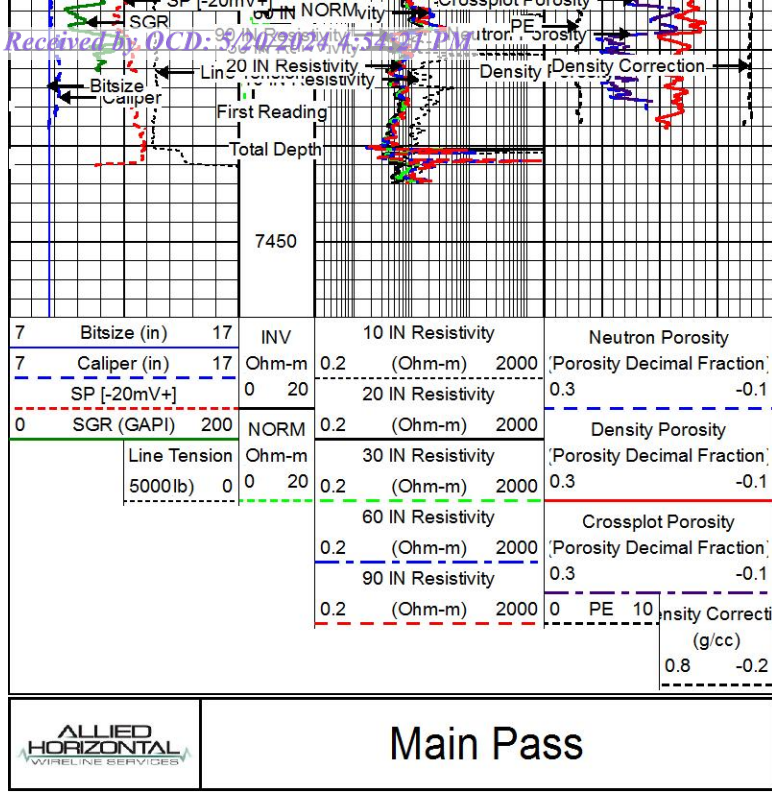












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District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 346080

CONDITIONS

Operator: NEW MEXICO ENERGY MINERALS & NATURAL RESOURCE 1220 S St Francis Dr Santa Fe , NM 87504	OGRID: 264235
	Action Number: 346080
	Action Type: [IM-SD] Well File Support Doc (ENG) (IM-AWF)

CONDITIONS

Created By	Condition	Condition Date
pgoetze	None	5/20/2024