

Visualization of Operational Data by test: Warm up and On test  
Oils: 832-0; 833-0  
Updated MM measurement system/ Final set up (2018 Eng.  
work) / Old Emerson Coeff.

Elisa Santos  
2 13 2019

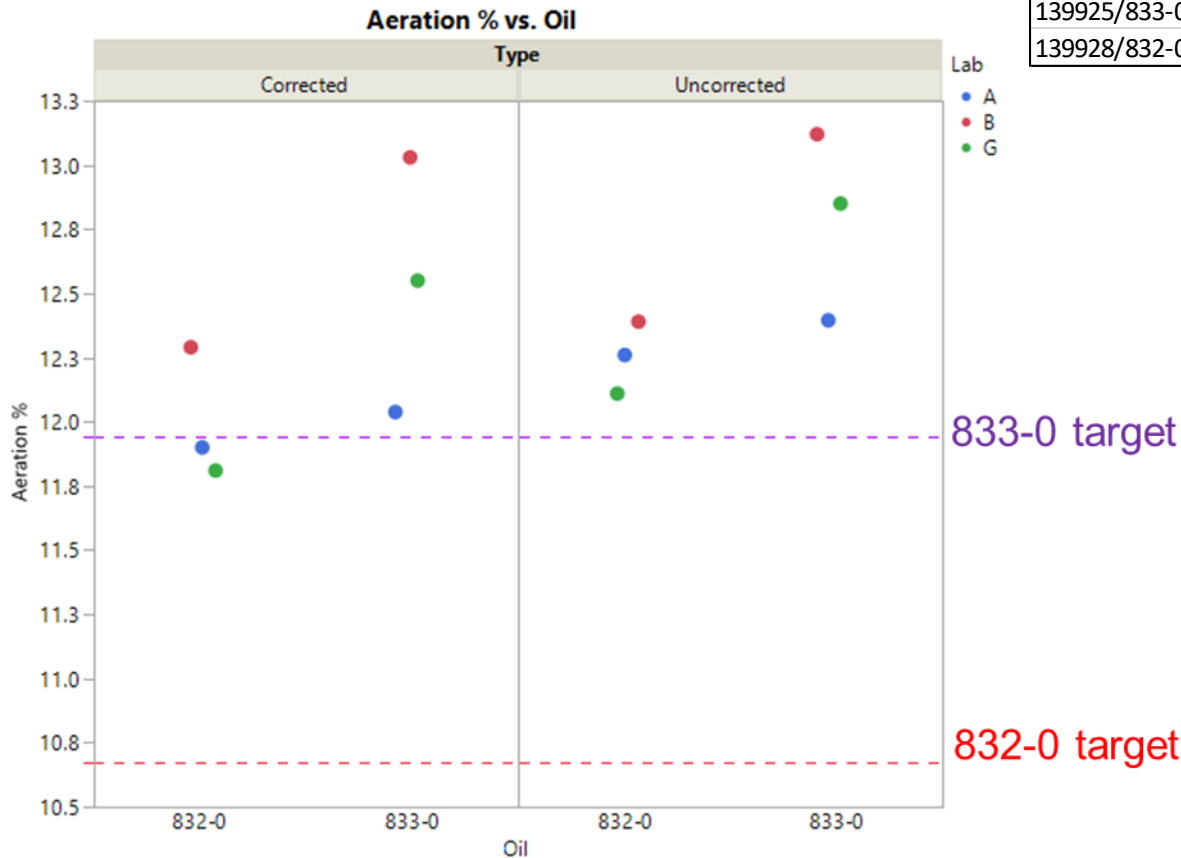
Performance you can rely on.



# Summary: 832-0 preliminary analysis – 6 out of 9 tests



Test/Oil/ Rig Owner/ Data from Lab	N Rows	40-50 hr Final Aeration DAQ	UNCORRECTED 40-50 hr Final Aeration DAQ
134124/833-0/G/G	6483	12.55	12.85
134125/833-0/A/A	8400	12.04	12.4
136106/832-0/A/A	8400	11.9	12.26
137291/832-0/B/B	8399	12.29	12.39
139925/833-0/B/B	8399	13.03	13.12
139928/832-0/G/G	6483	11.81	12.11



Lab G shorter files

## Dash zero oils preliminary analysis

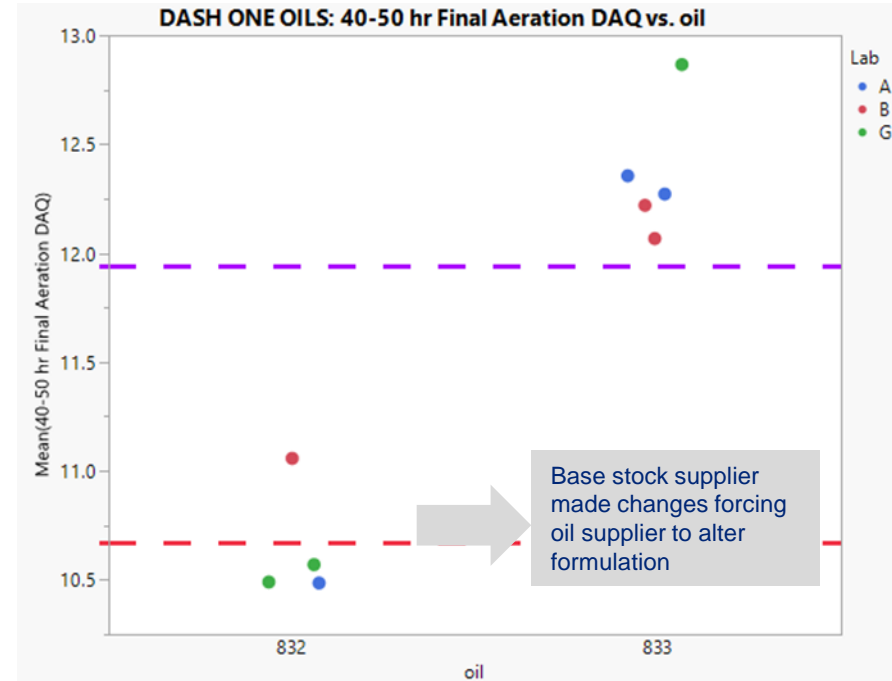
Summary: uncorrected

Oil	Mean(UNCORRECTED 40-50 hr Final Aeration DAQ)	Std Dev(UNCORRECTED 40-50 hr Final Aeration DAQ)
832-0	12.25	0.1401
833-0	12.79	0.3663

Summary: "corrected"

Oil	Mean(40-50 hr Final Aeration DA)	Std Dev(40-50 hr Final Aeration DAQ)
832-0	12.00	0.2551
833-0	12.54	0.4961

## Dash one oils



Corrected

Oil	Mean	standard deviation
832	10.65	0.2740
833	12.36	0.3039

\* Include uncorrected for final analysis

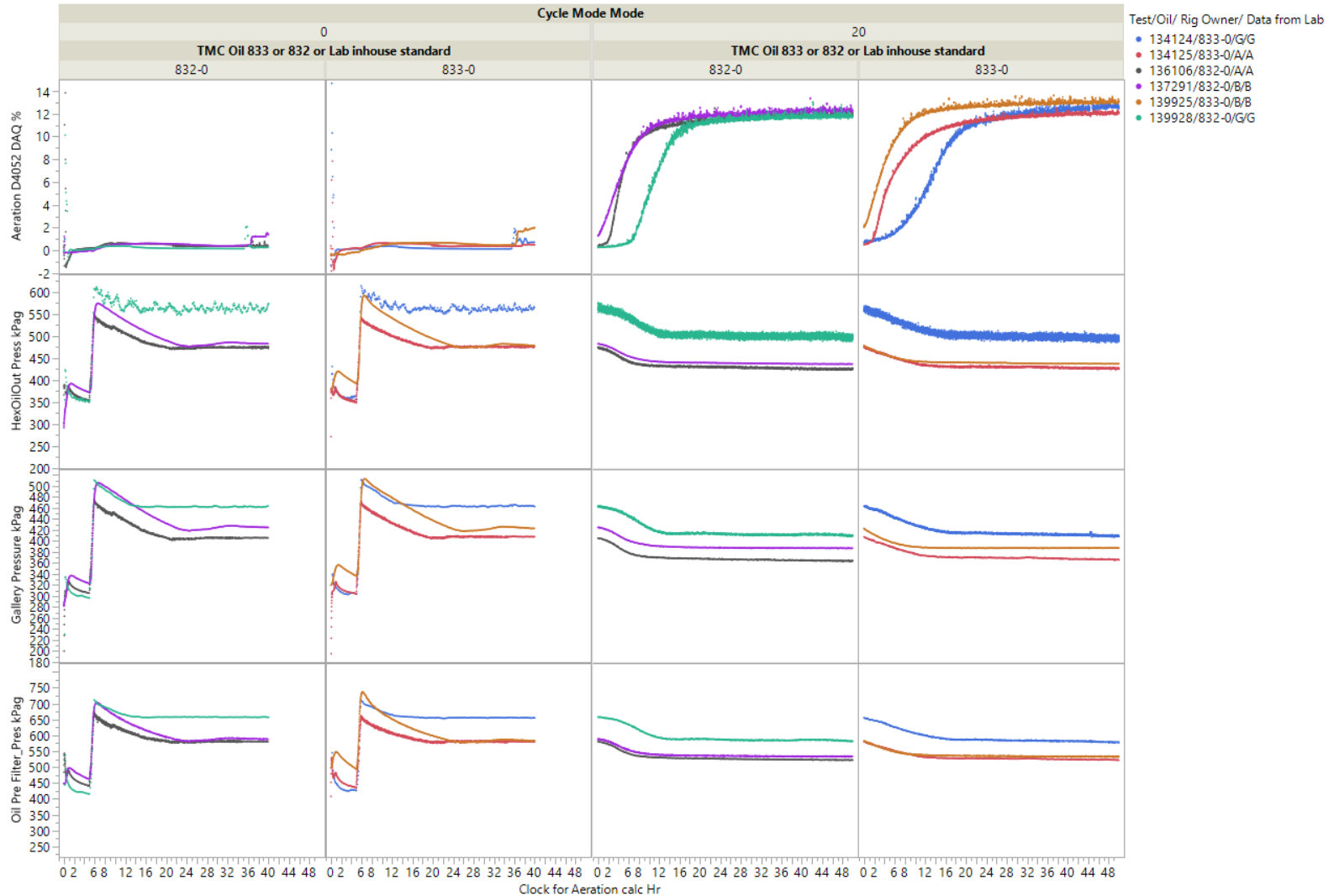




# Warm up and on test by oil

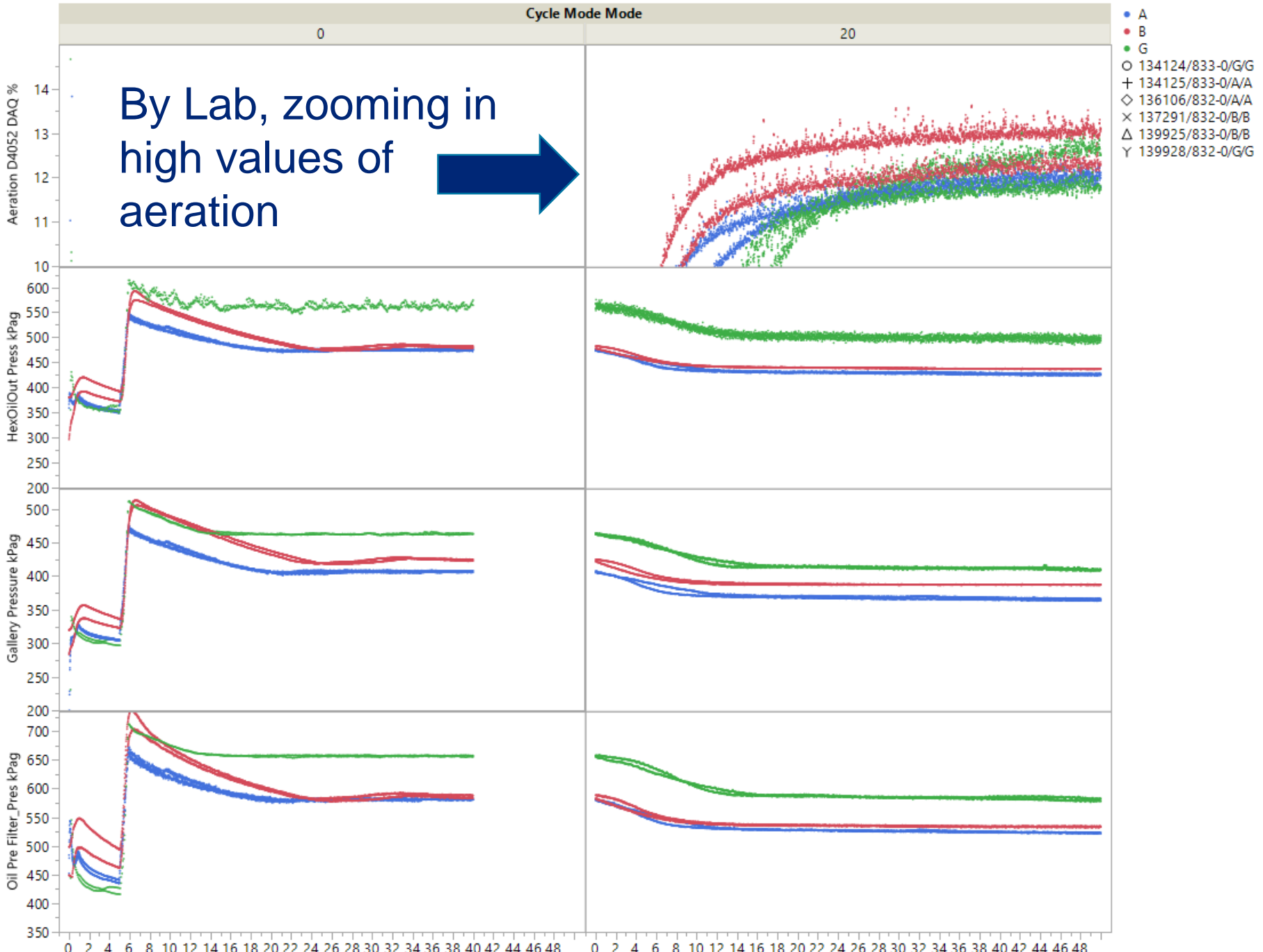


Aeration D4052 DAQ % & 3 more vs. Clock for Aeration calc Hr





### Aeration D4052 DAQ % & 3 more vs. Clock for Aeration calc Hr



By Lab, zooming in high values of aeration

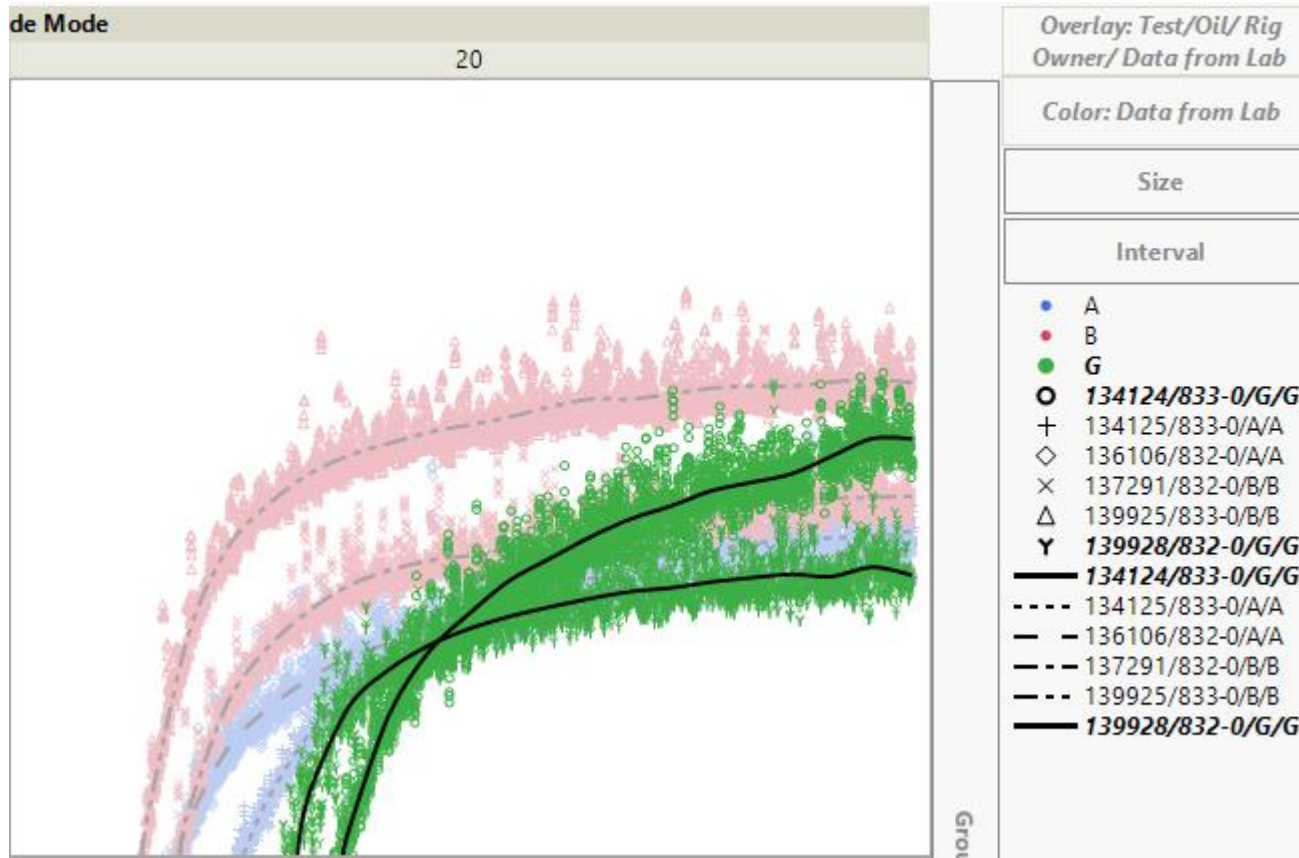


- A
- B
- G
- 134124/833-0/G/G
- + 134125/833-0/A/A
- ◇ 136106/832-0/A/A
- × 137291/832-0/B/B
- △ 139925/833-0/B/B
- Y 139928/832-0/G/G

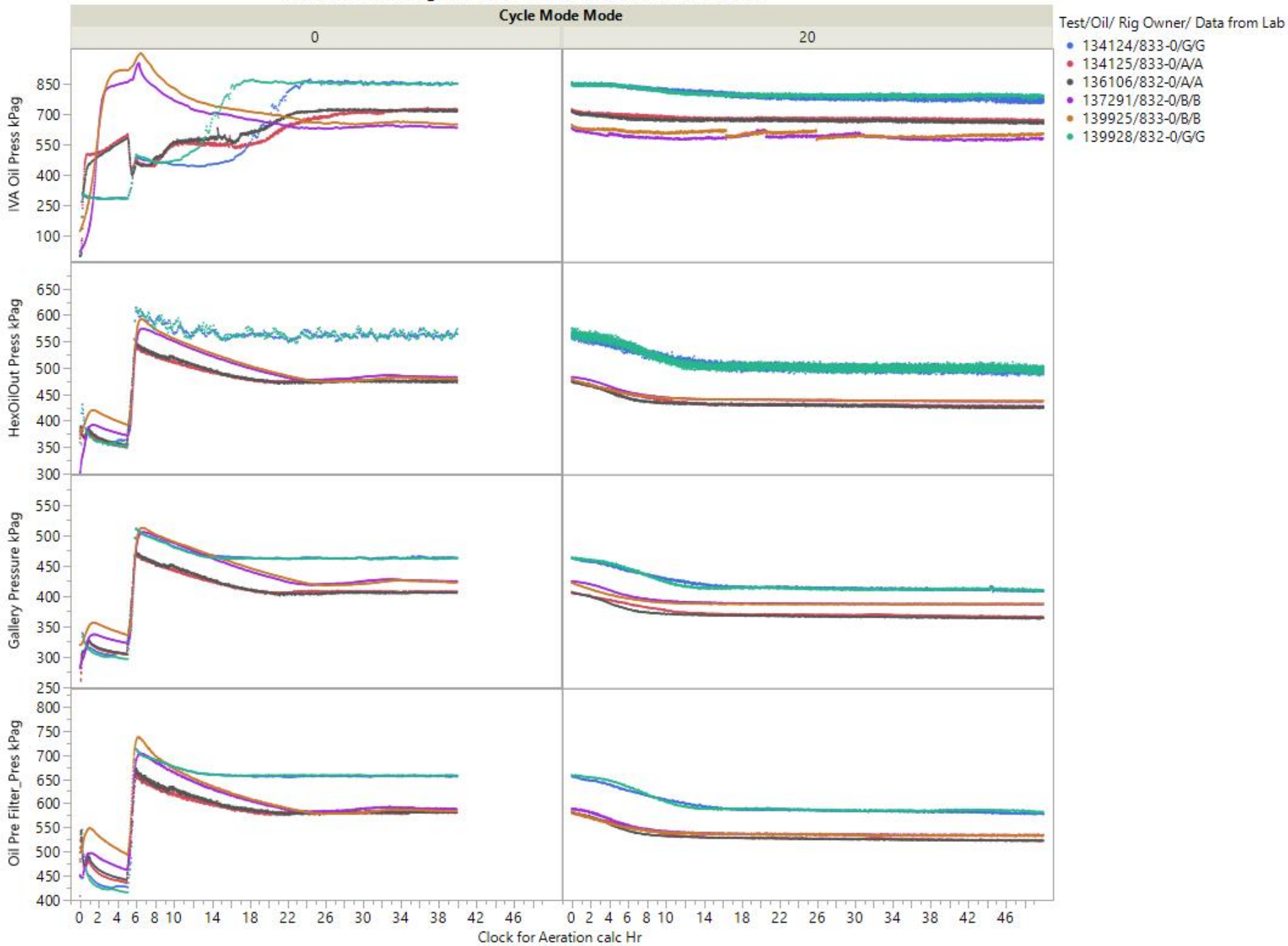




# Is the bump present in both tests?

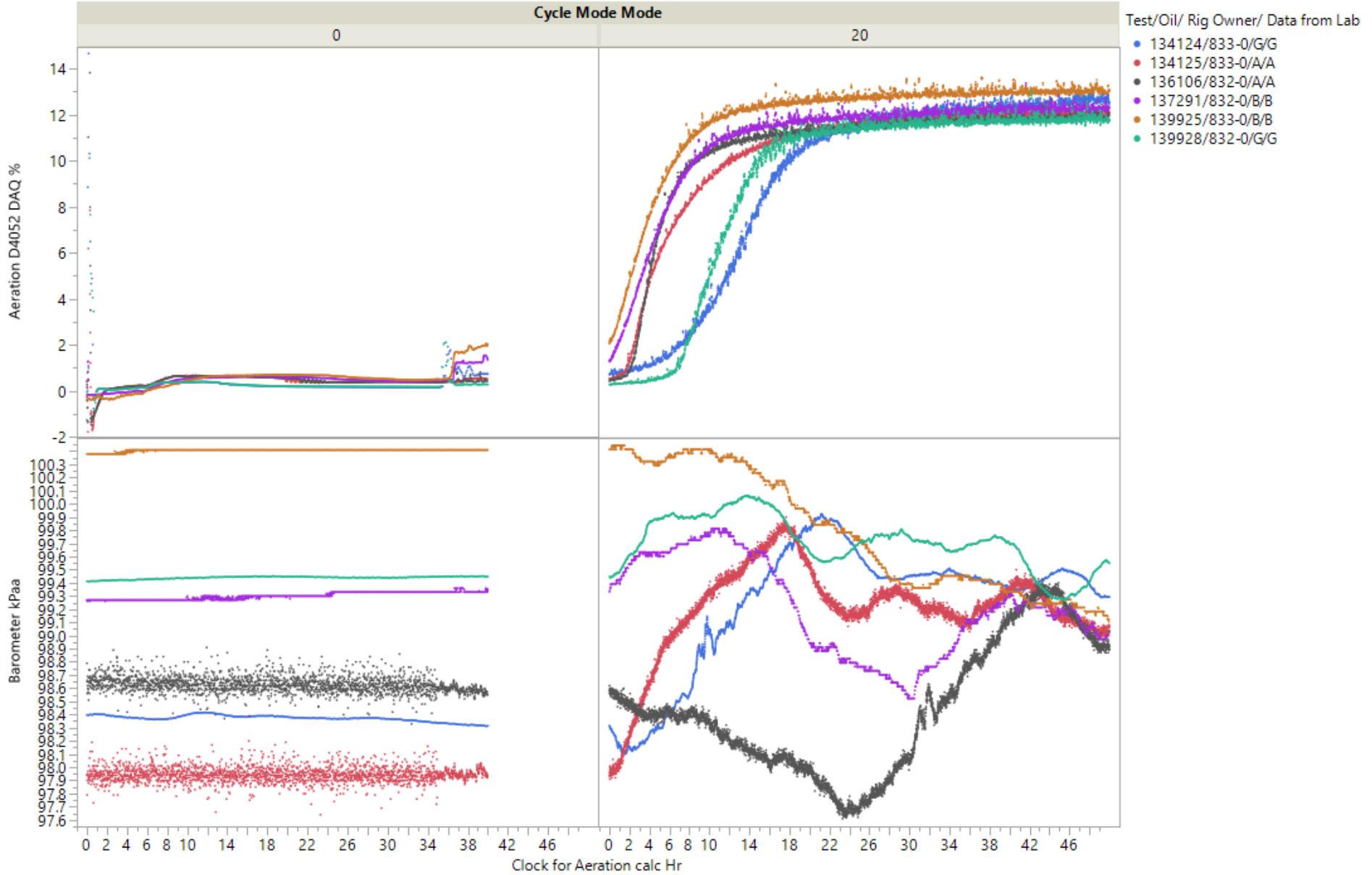


# IVA Oil Press kPag & 3 more vs. Clock for Aeration calc Hr



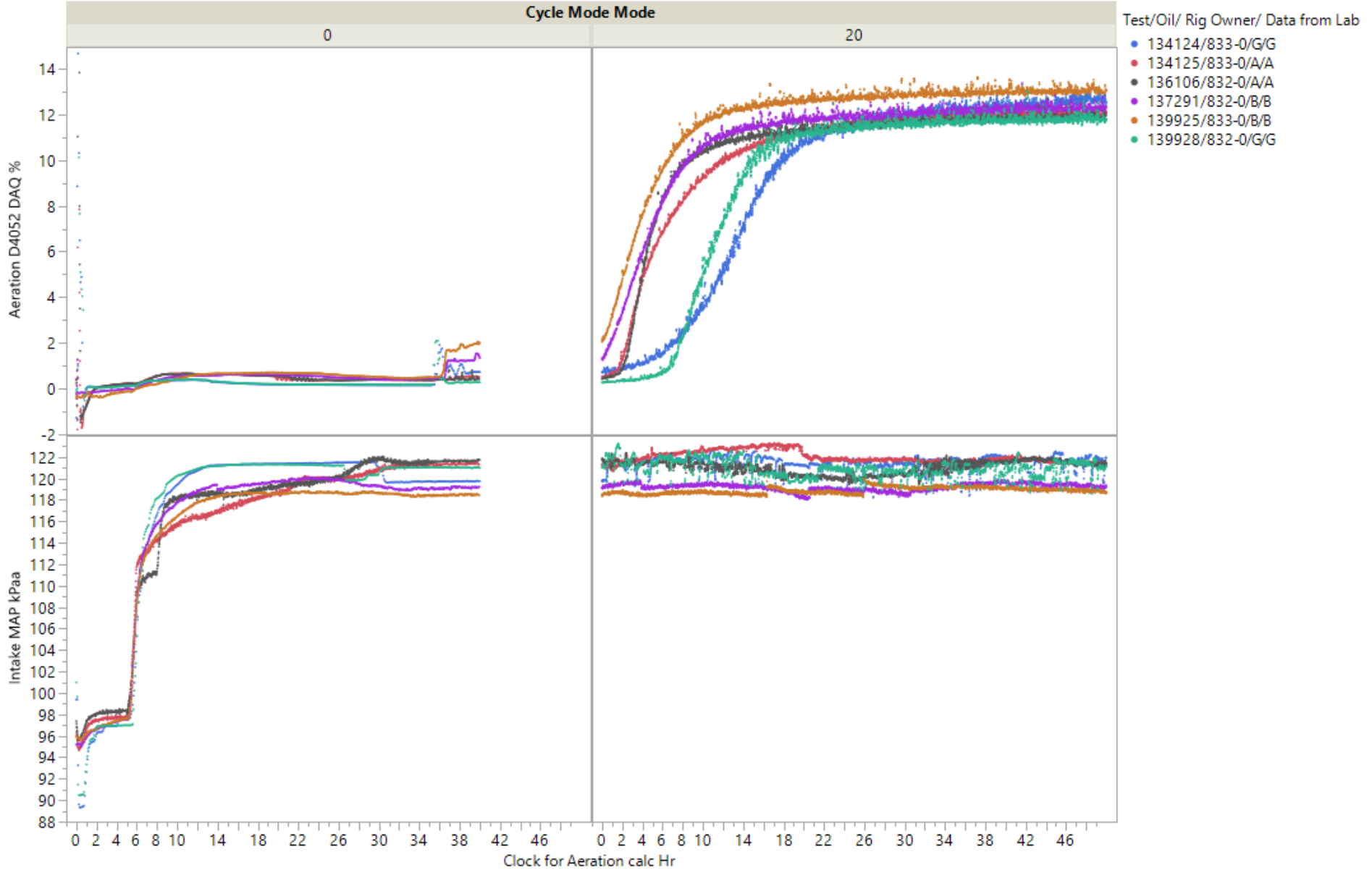


### Aeration D4052 DAQ % & Barometer kPaa vs. Clock for Aeration calc Hr



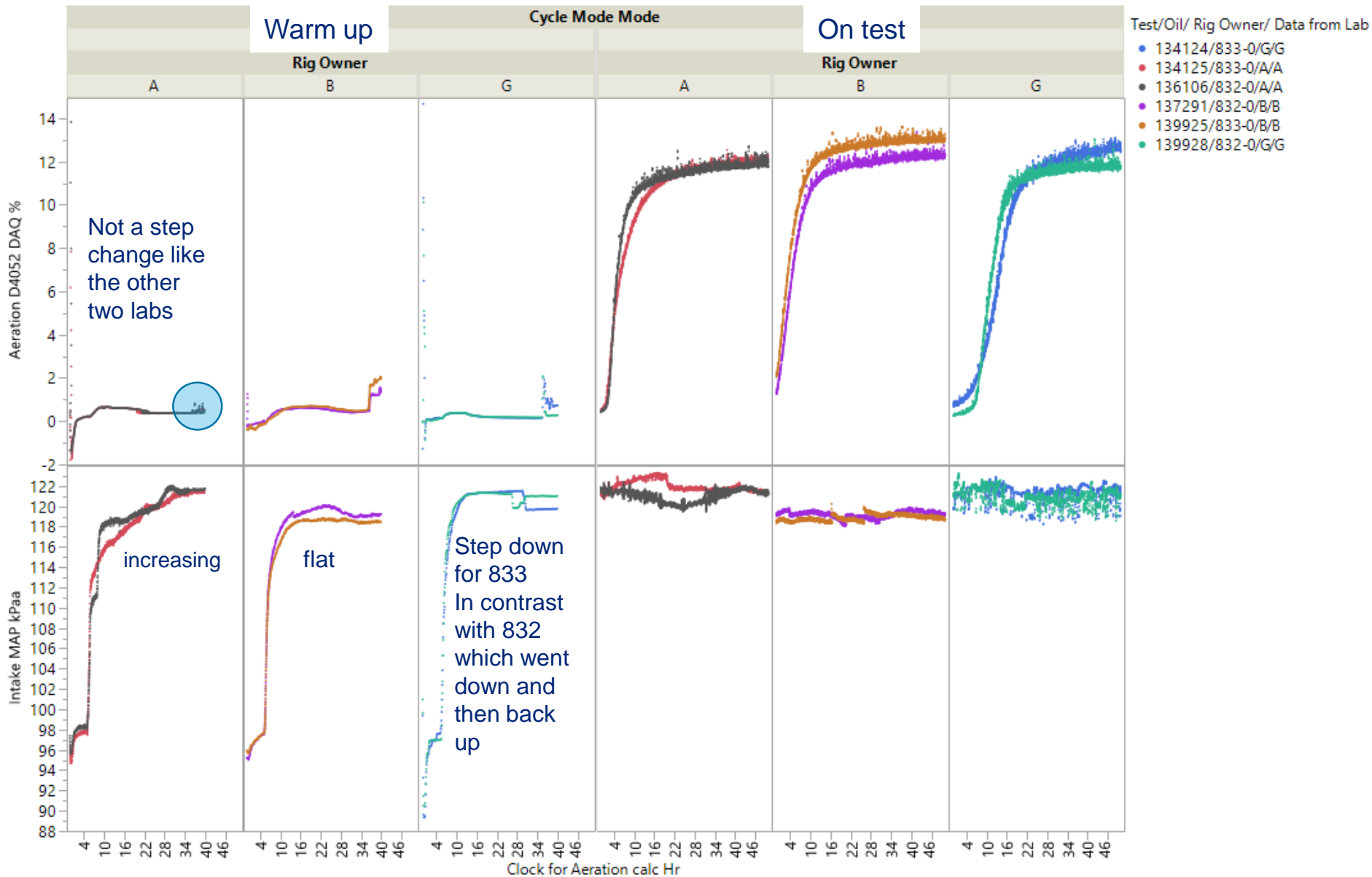


### Aeration D4052 DAQ % & Intake MAP kPaa vs. Clock for Aeration calc Hr



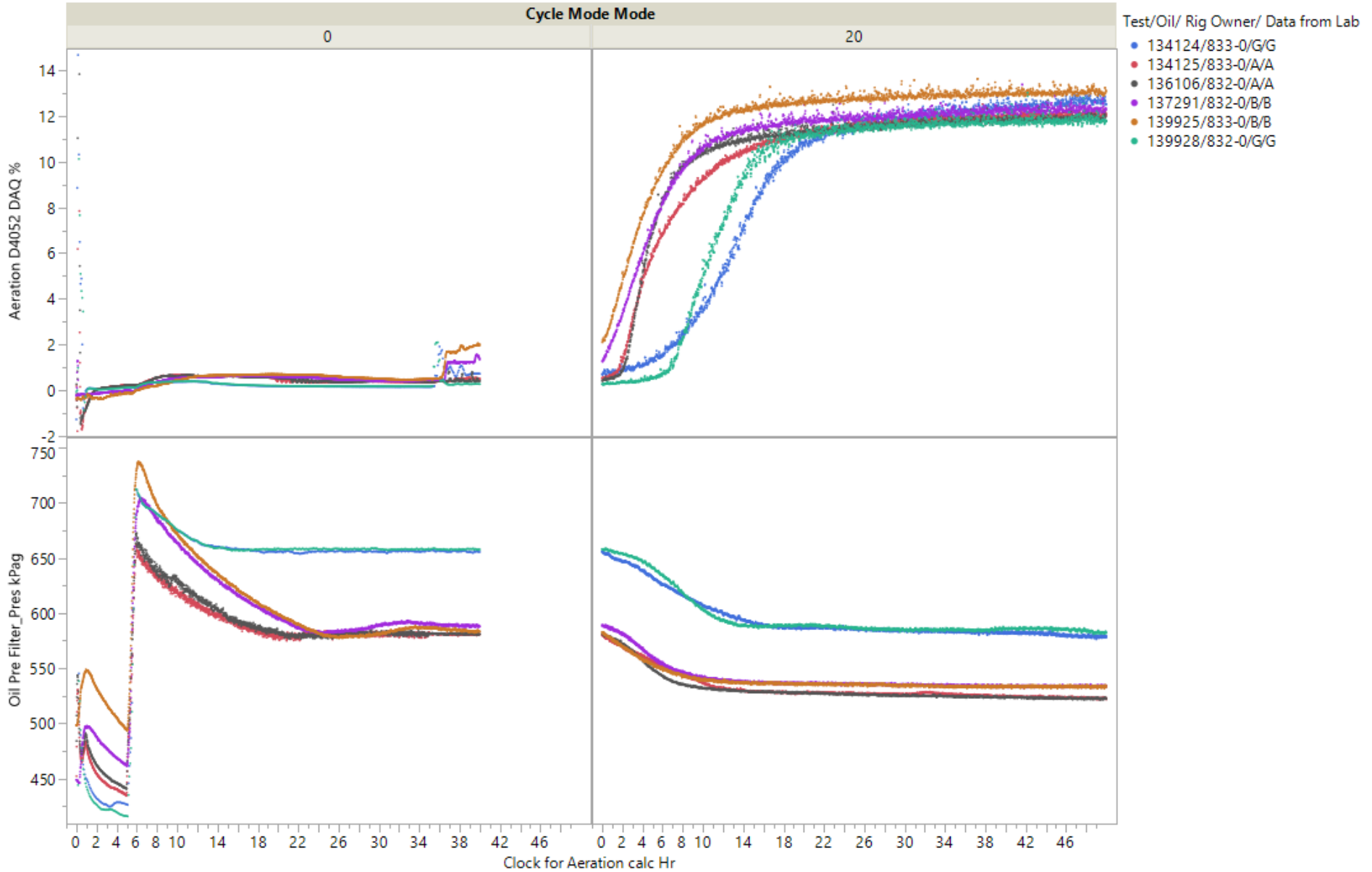


## Aeration D4052 DAQ % & Intake MAP kPaa vs. Clock for Aeration calc Hr





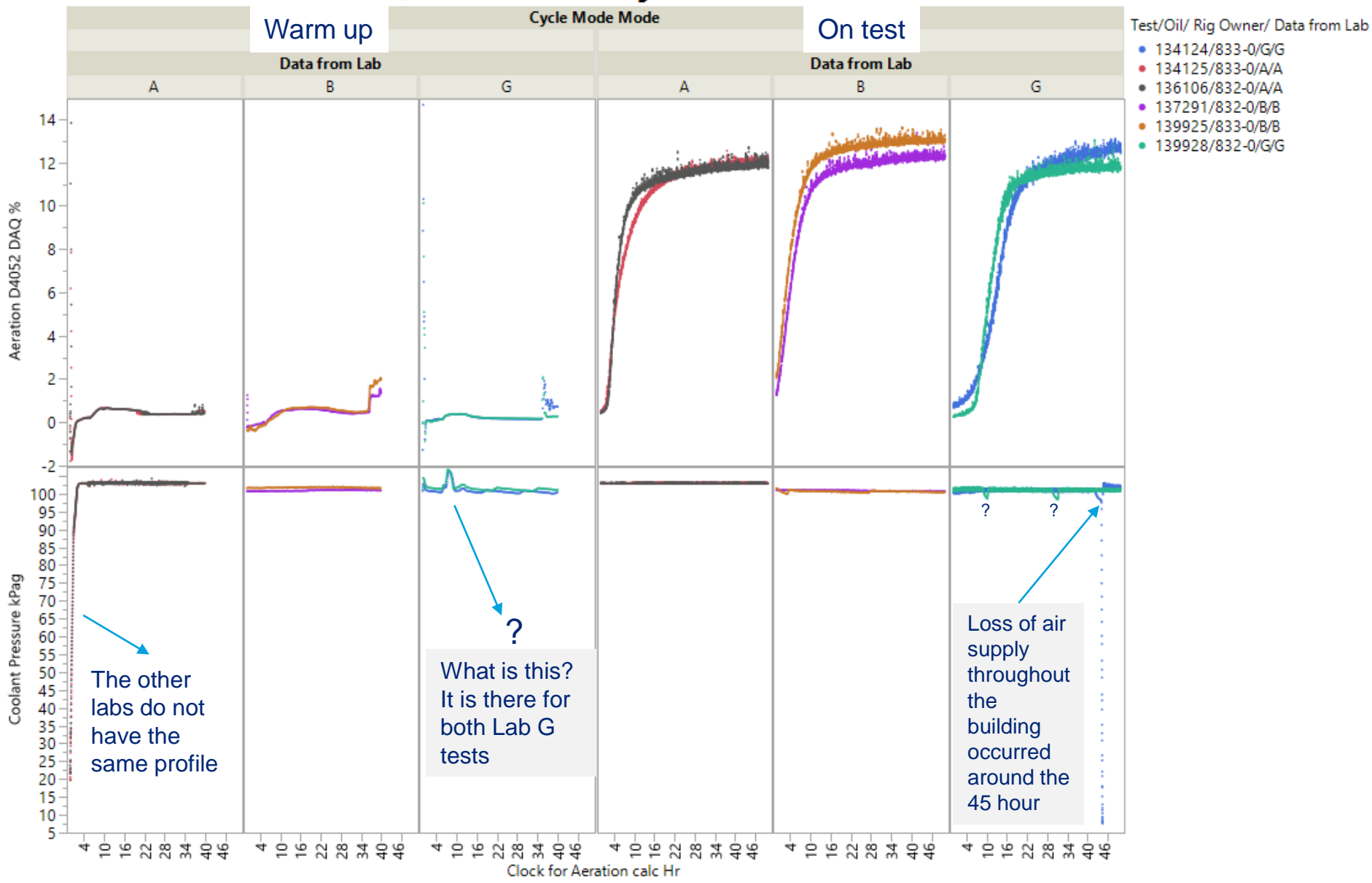
### Aeration D4052 DAQ % & Oil Pre Filter\_Pres kPag vs. Clock for Aeration calc Hr







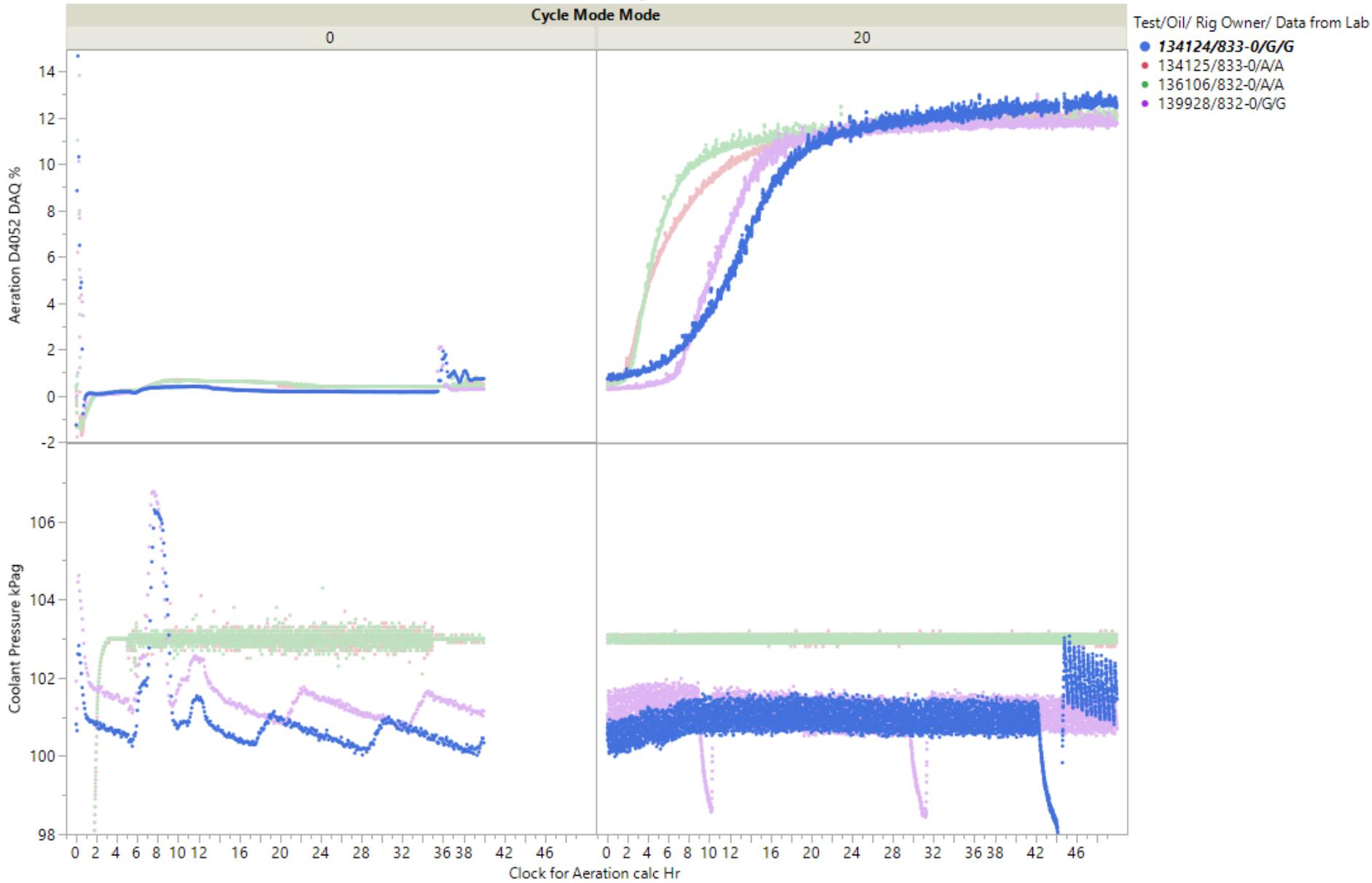
### Aeration D4052 DAQ % & Coolant Pressure kPag vs. Clock for Aeration calc Hr



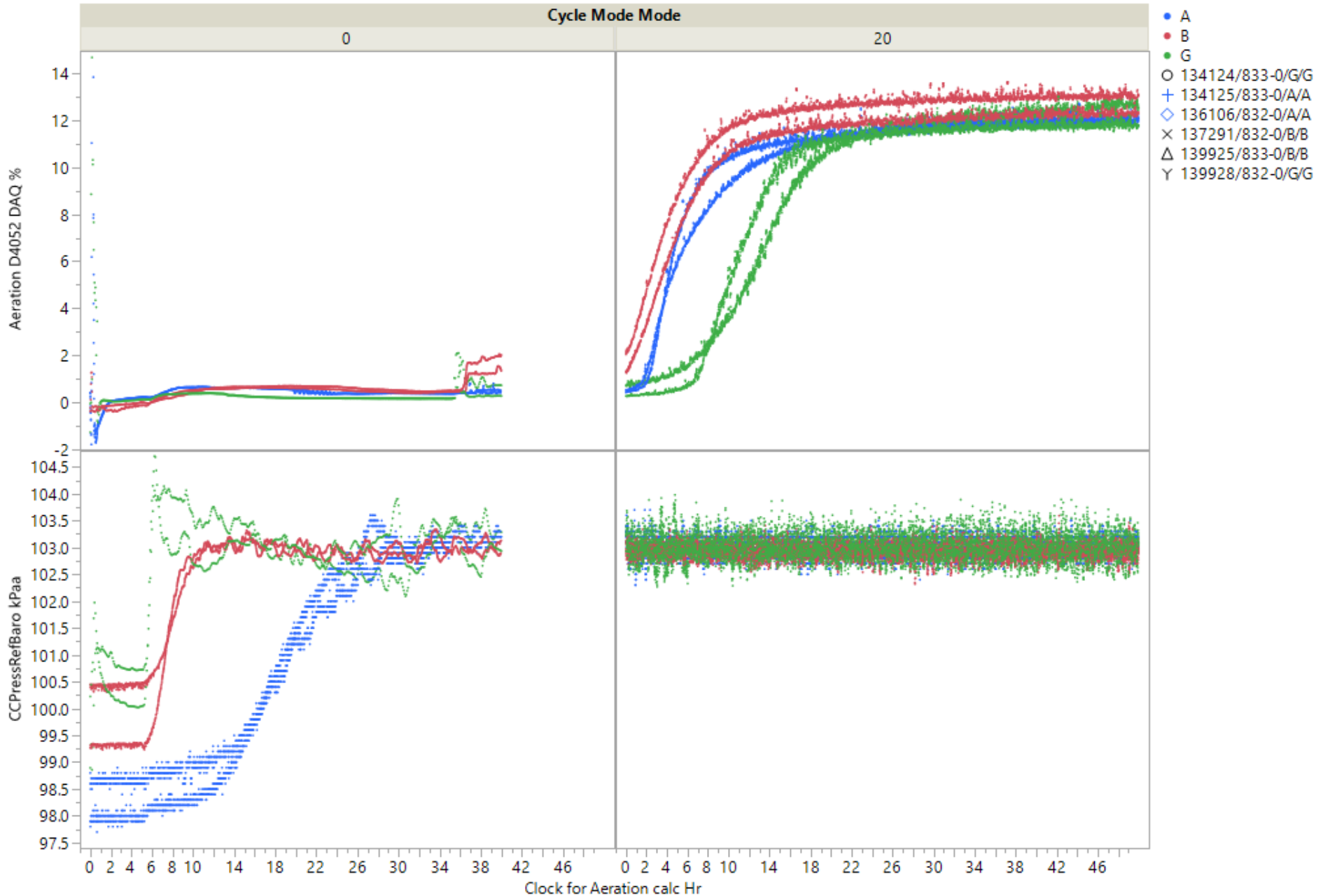
# Zooming in...



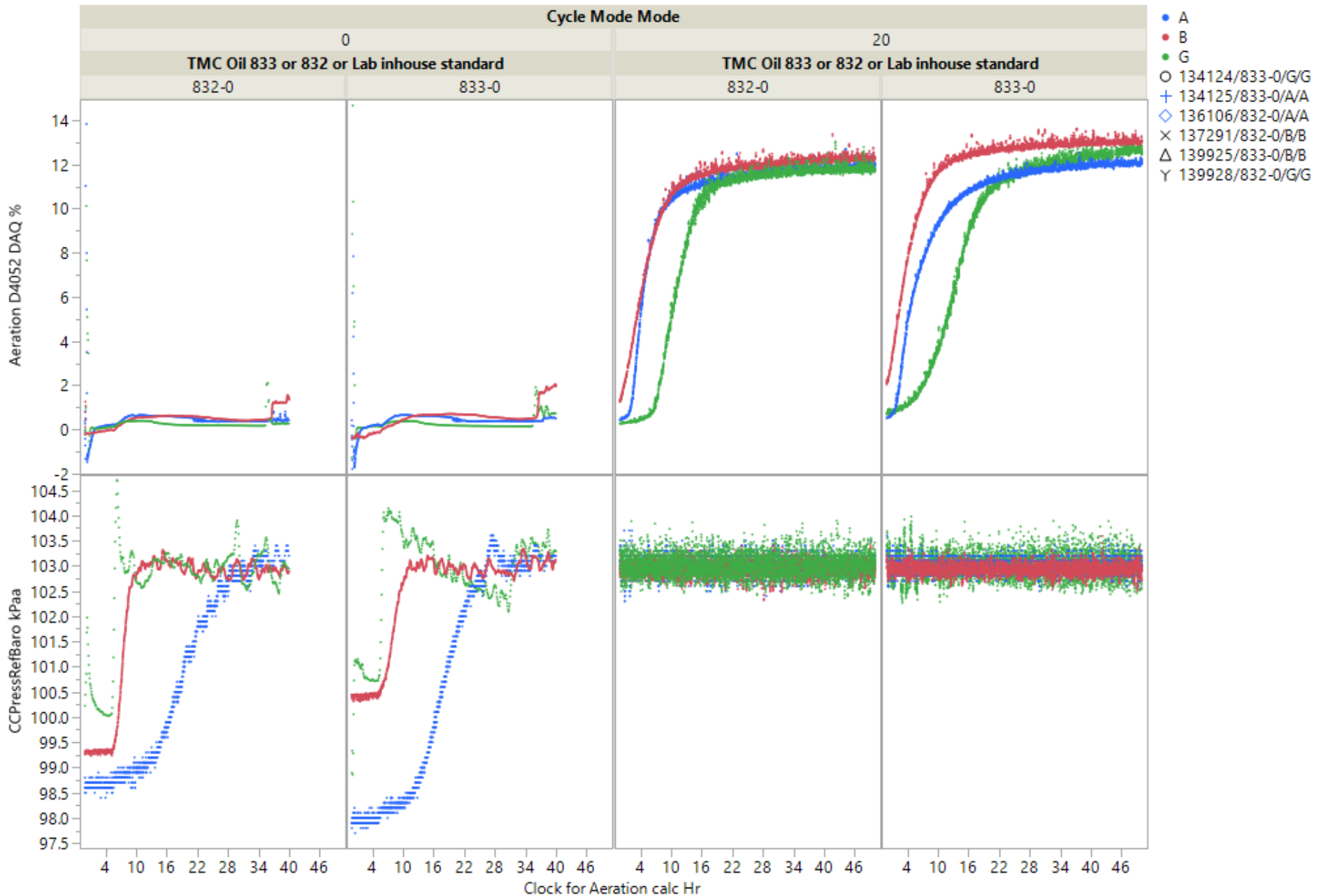
### Aeration D4052 DAQ % & Coolant Pressure kPag vs. Clock for Aeration calc Hr



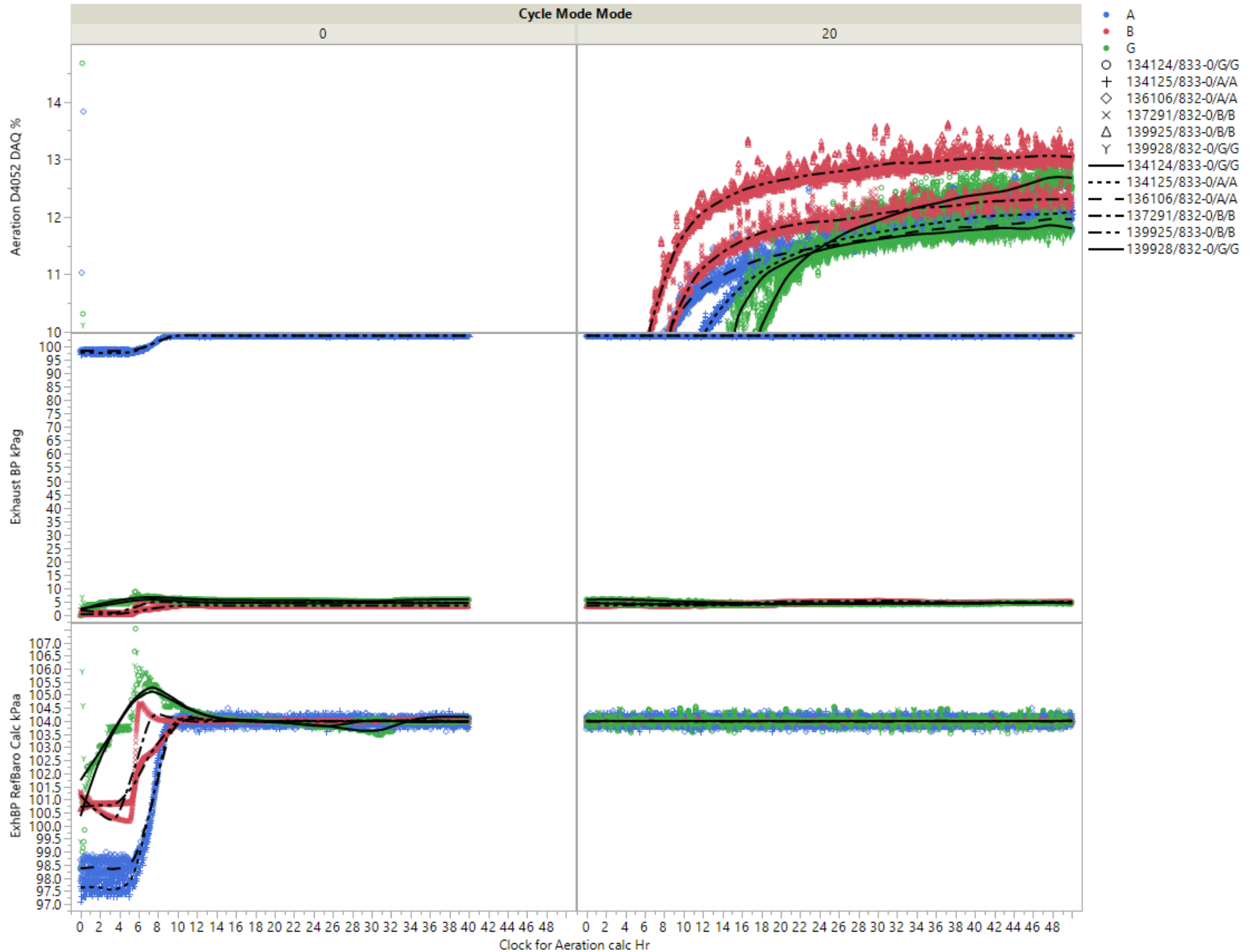
# Aeration D4052 DAQ % & CCPressRefBaro kPaa vs. Clock for Aeration calc Hr



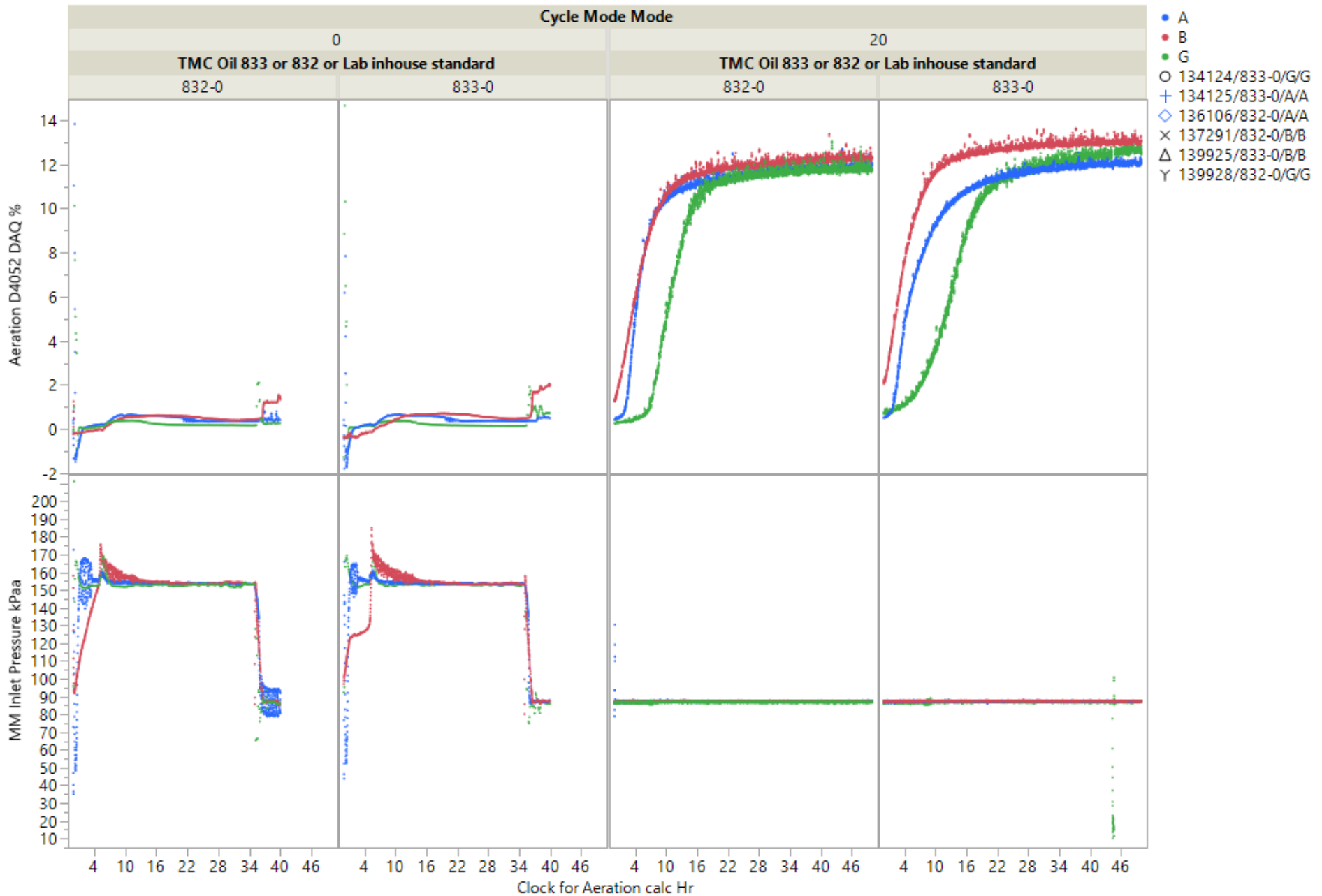
# Aeration D4052 DAQ % & CCPressRefBaro kPaa vs. Clock for Aeration calc Hr



# Aeration D4052 DAQ % & 2 more vs. Clock for Aeration calc Hr



# Aeration D4052 DAQ % & MM Inlet Pressure kPaa vs. Clock for Aeration calc Hr

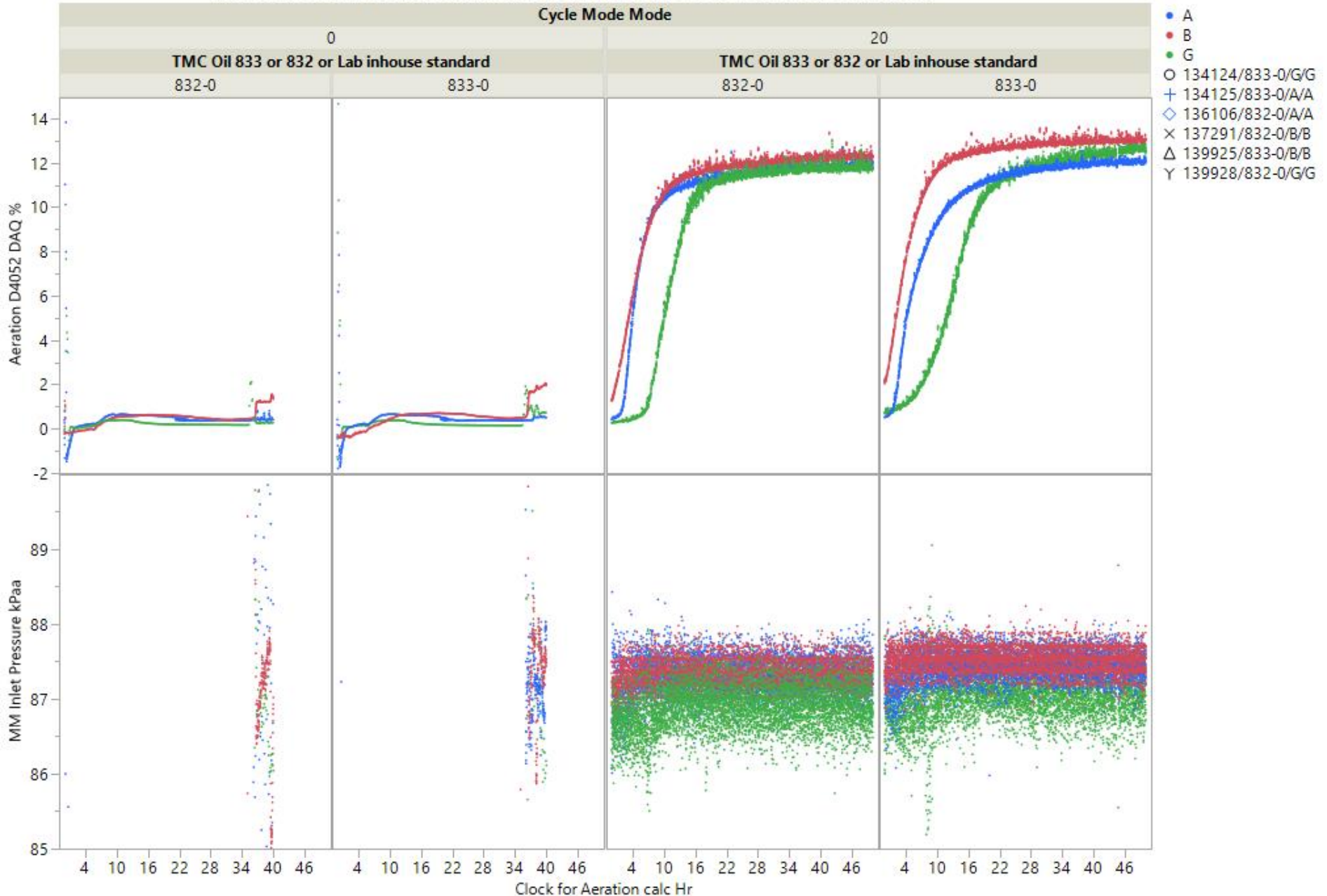




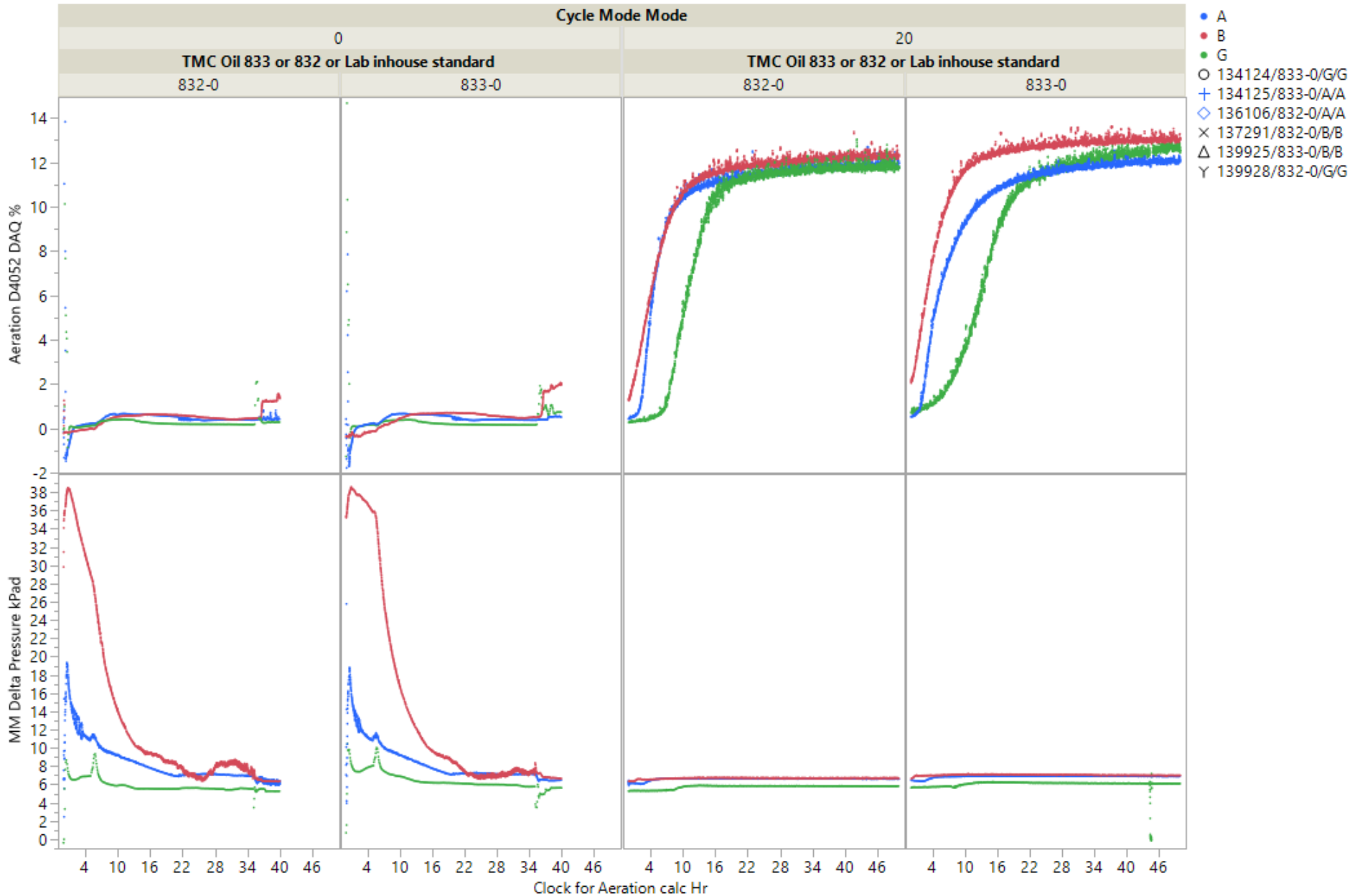
# Zooming in...



### Aeration D4052 DAQ % & MM Inlet Pressure kPaa vs. Clock for Aeration calc Hr

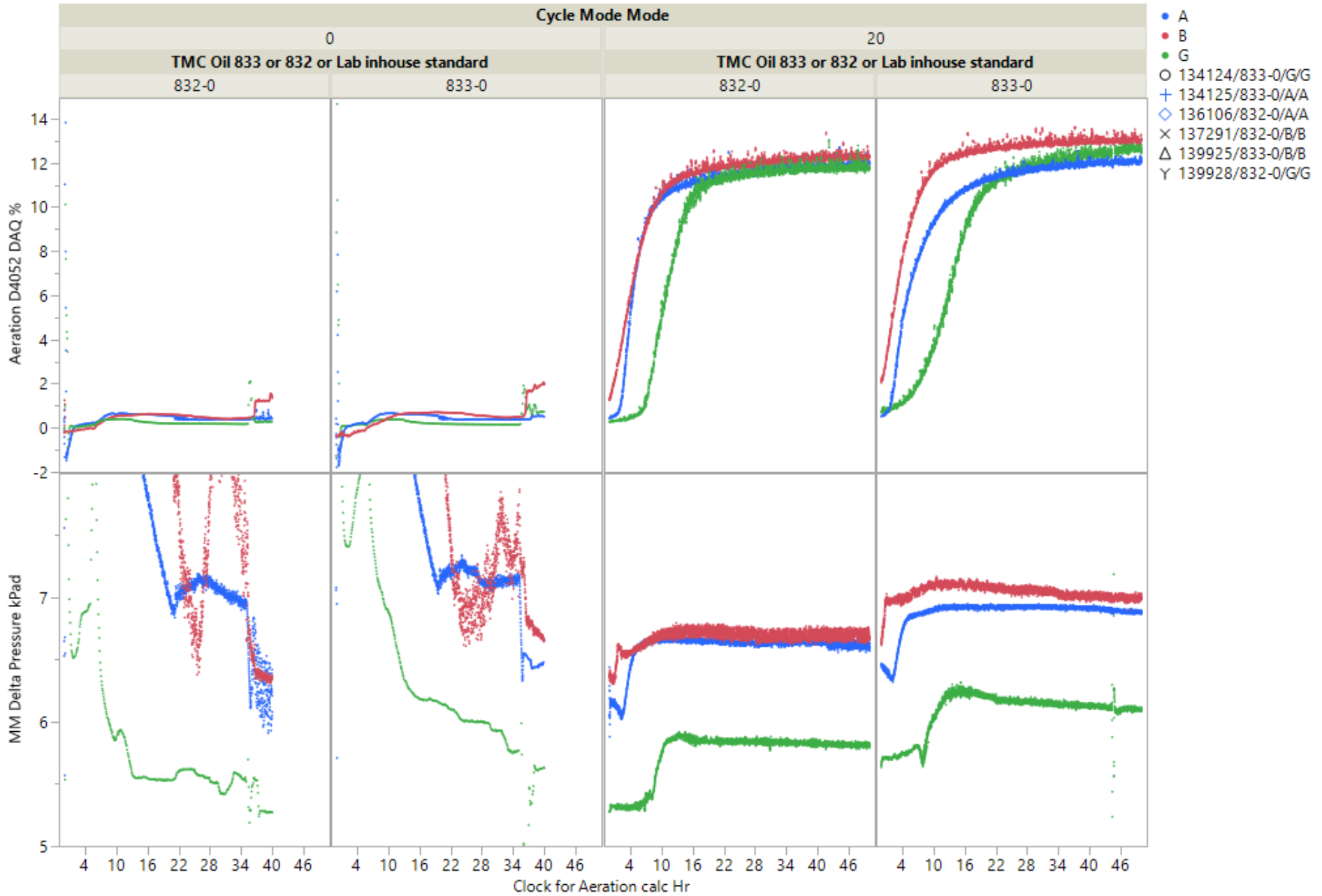


# Aeration D4052 DAQ % & MM Delta Pressure kPad vs. Clock for Aeration calc Hr



# Zooming in...

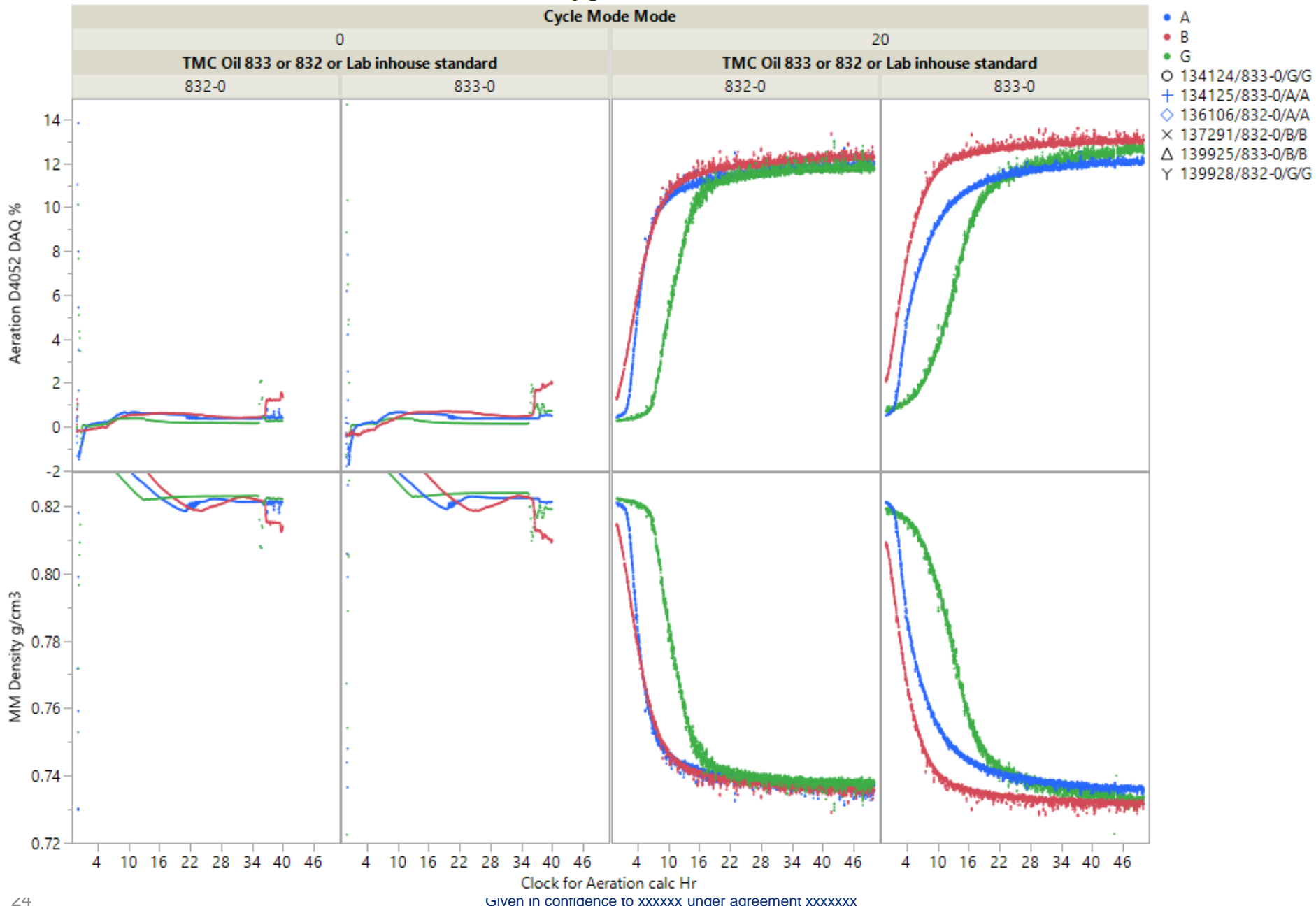
Aeration D4052 DAQ % & MM Delta Pressure kPad vs. Clock for Aeration calc Hr



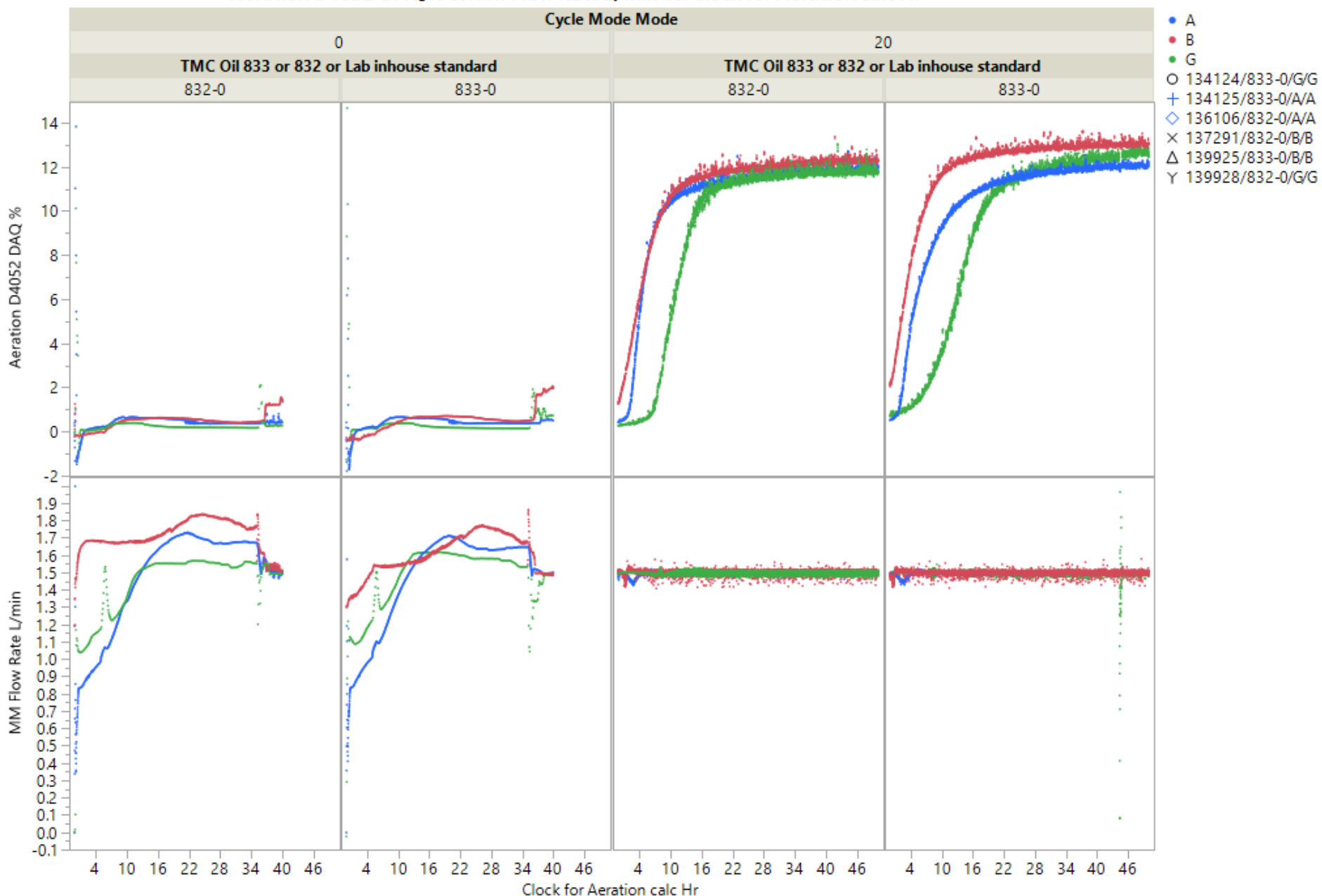
# Zooming in...



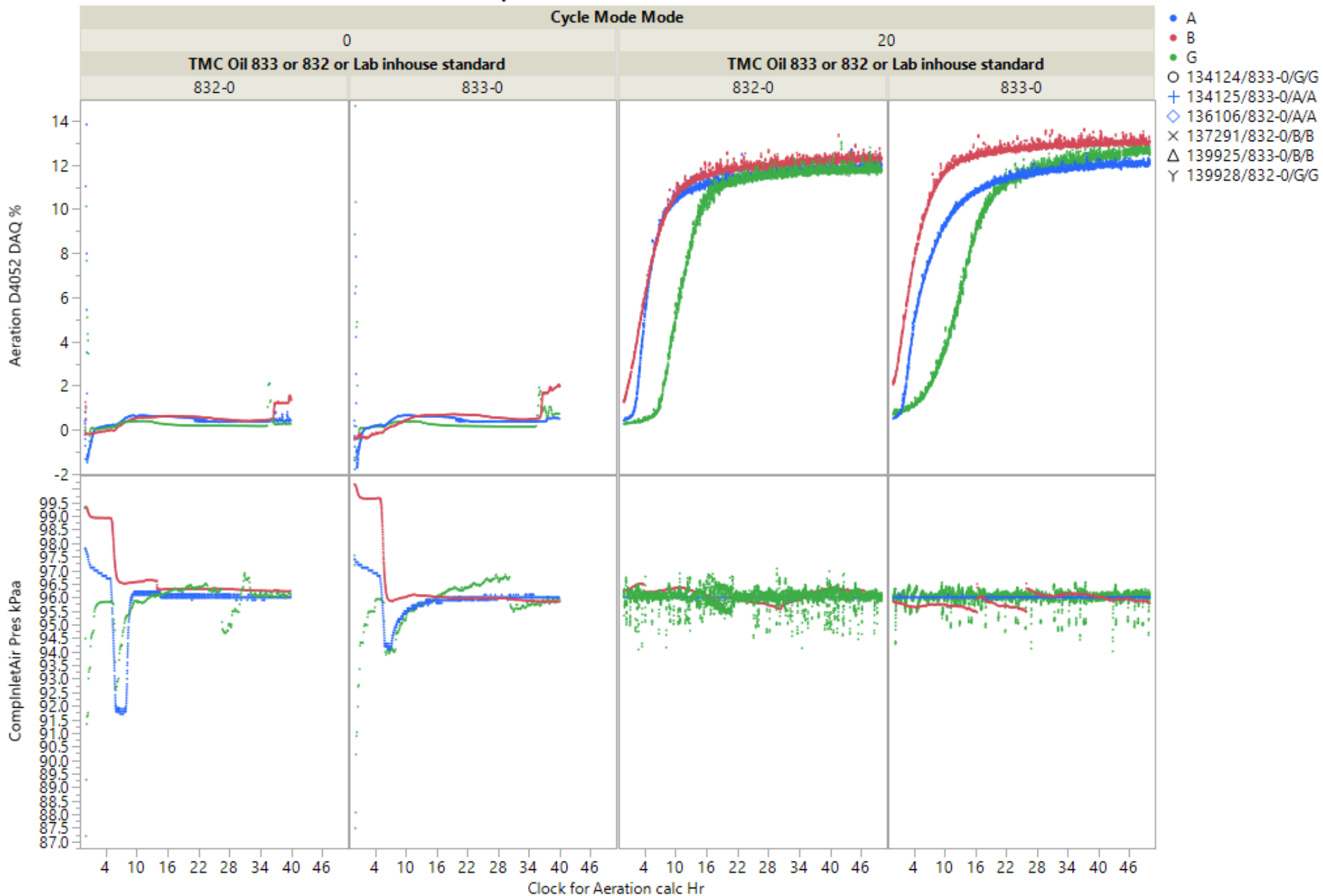
**Aeration D4052 DAQ % & MM Density g/cm3 vs. Clock for Aeration calc Hr**



# Aeration D4052 DAQ % & MM Flow Rate L/min vs. Clock for Aeration calc Hr

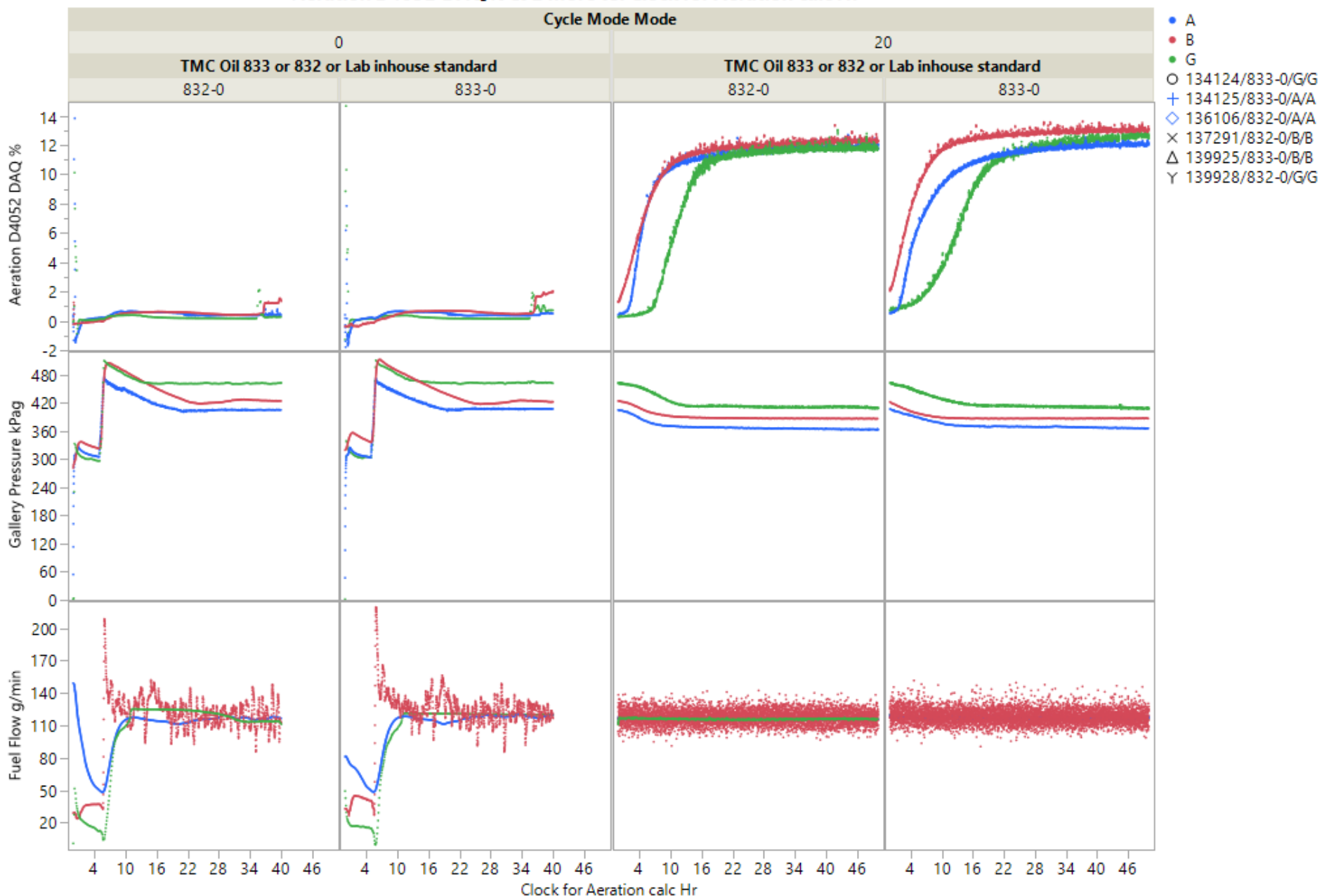


# Aeration D4052 DAQ % & ComplinetAir Pres kPaa vs. Clock for Aeration calc Hr





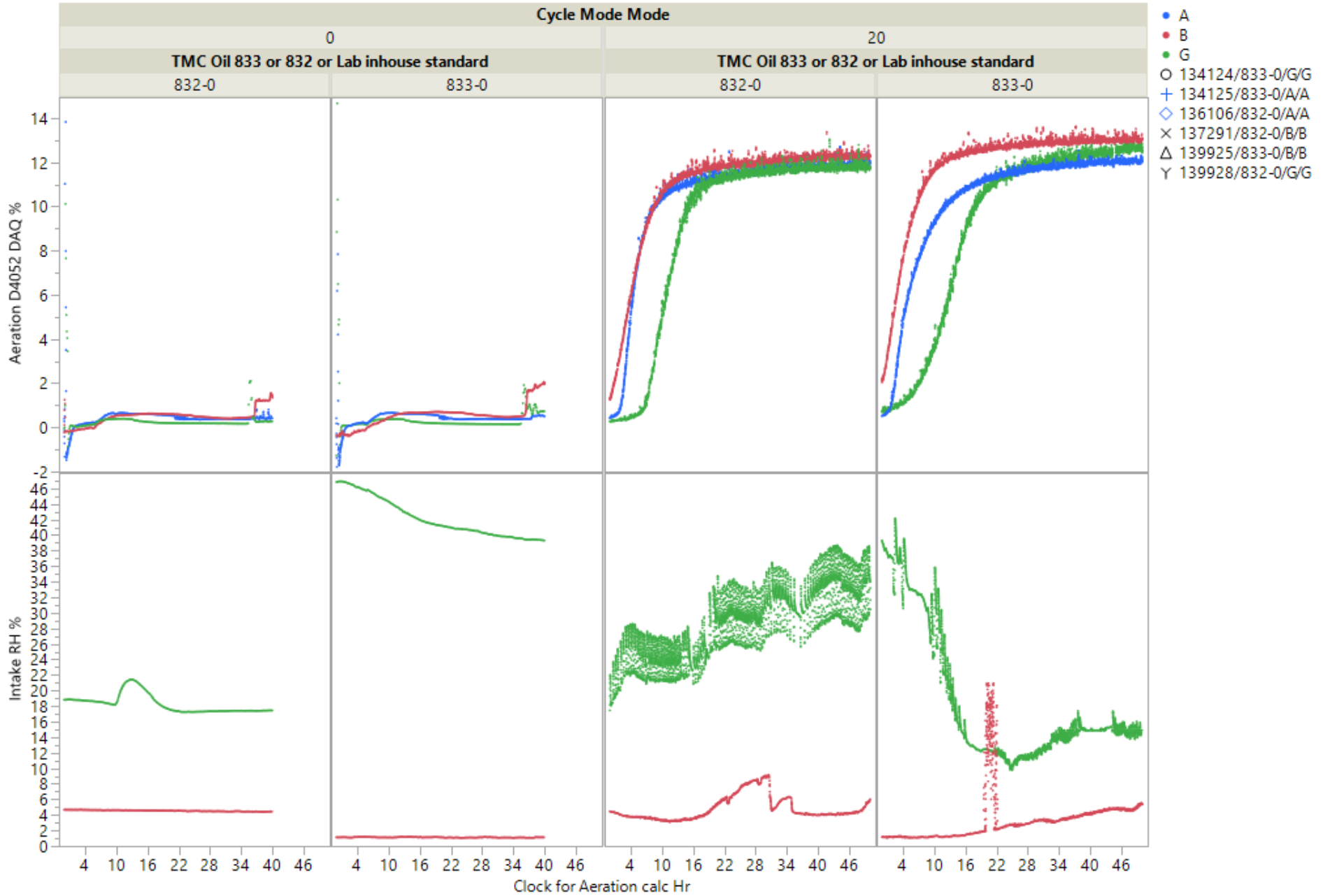
# Aeration D4052 DAQ % & 2 more vs. Clock for Aeration calc Hr



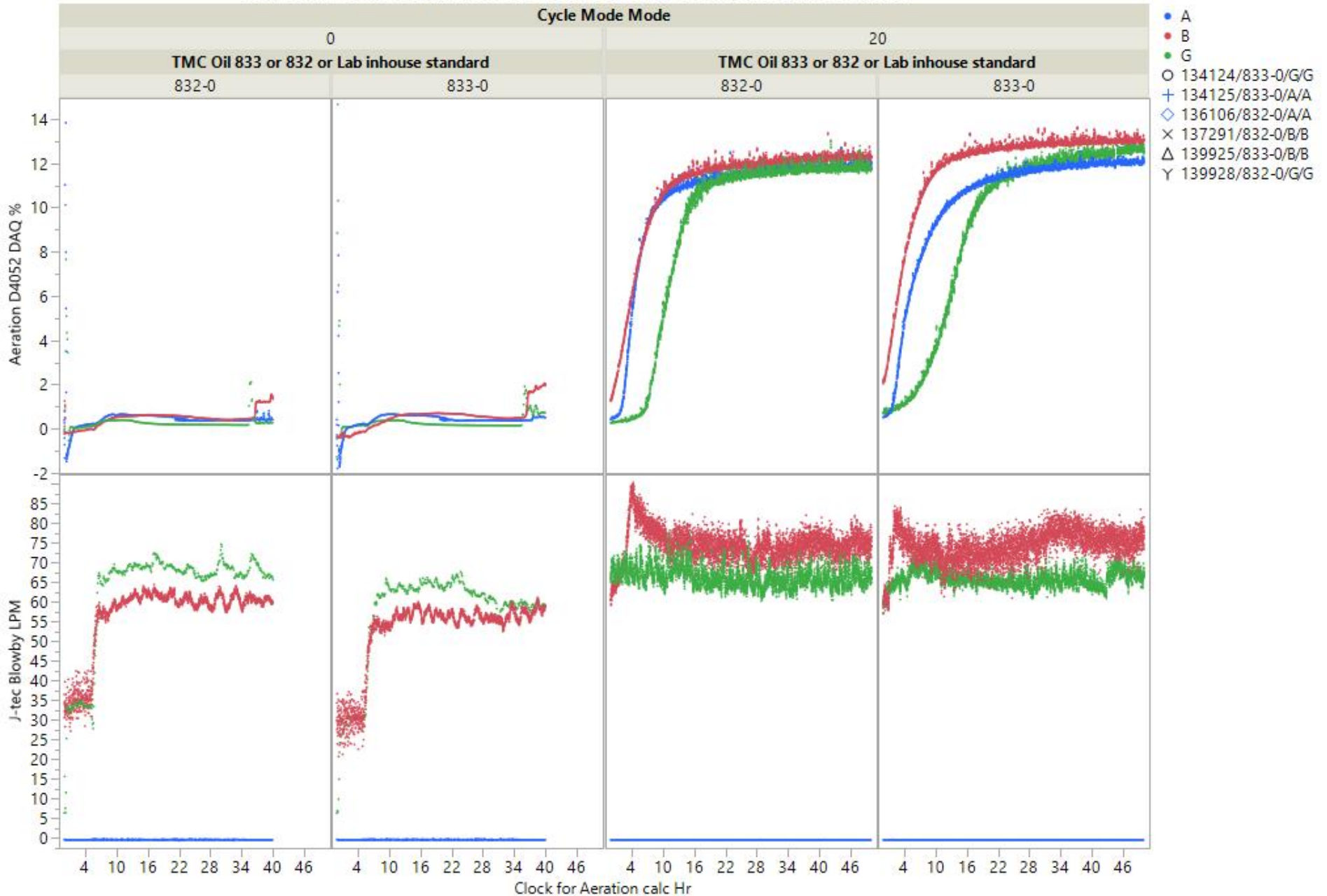
# Intake RH is available only for Lab G and Lab B



**Aeration D4052 DAQ % & Intake RH % vs. Clock for Aeration calc Hr**

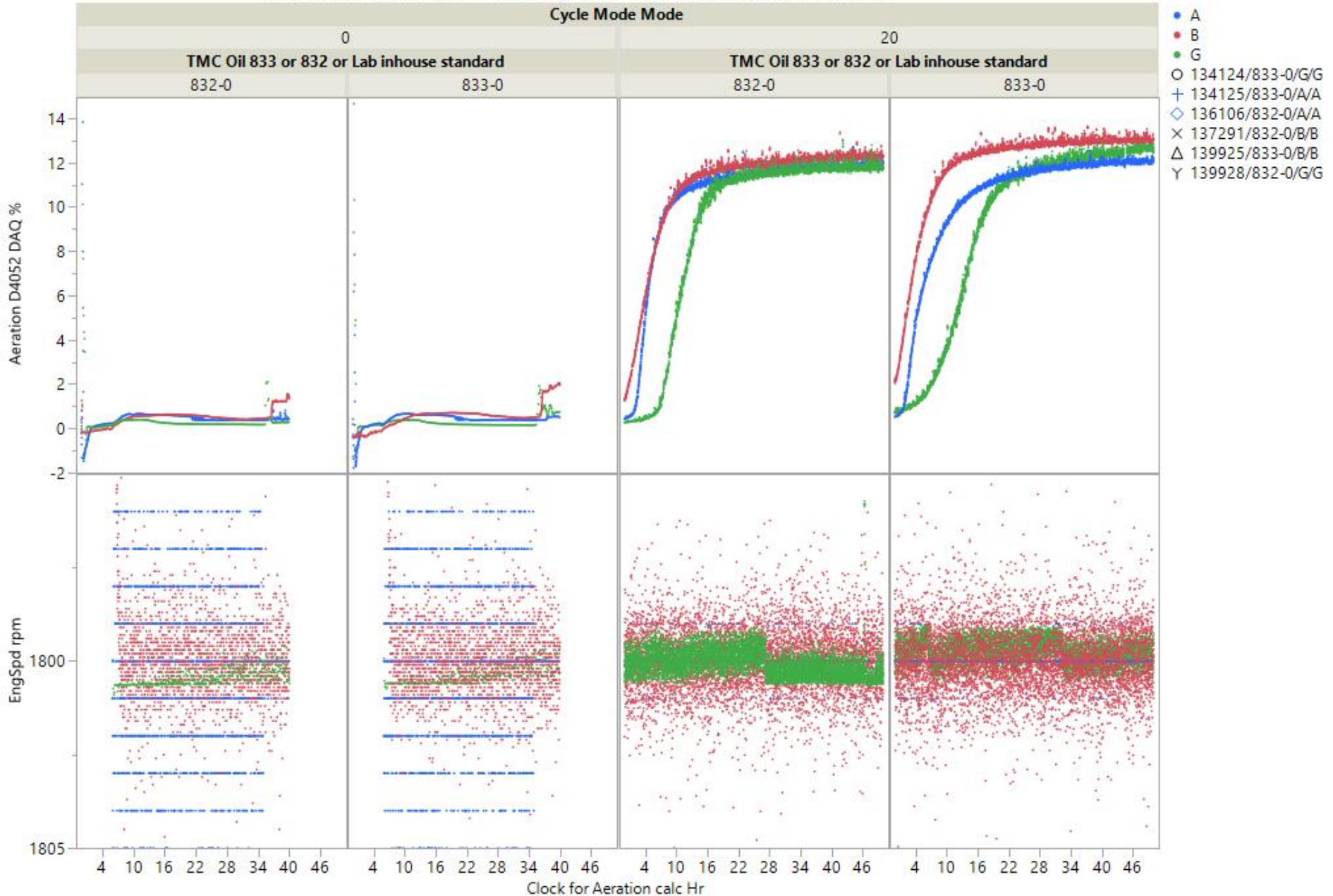


# Aeration D4052 DAQ % & J-tec Blowby LPM vs. Clock for Aeration calc Hr

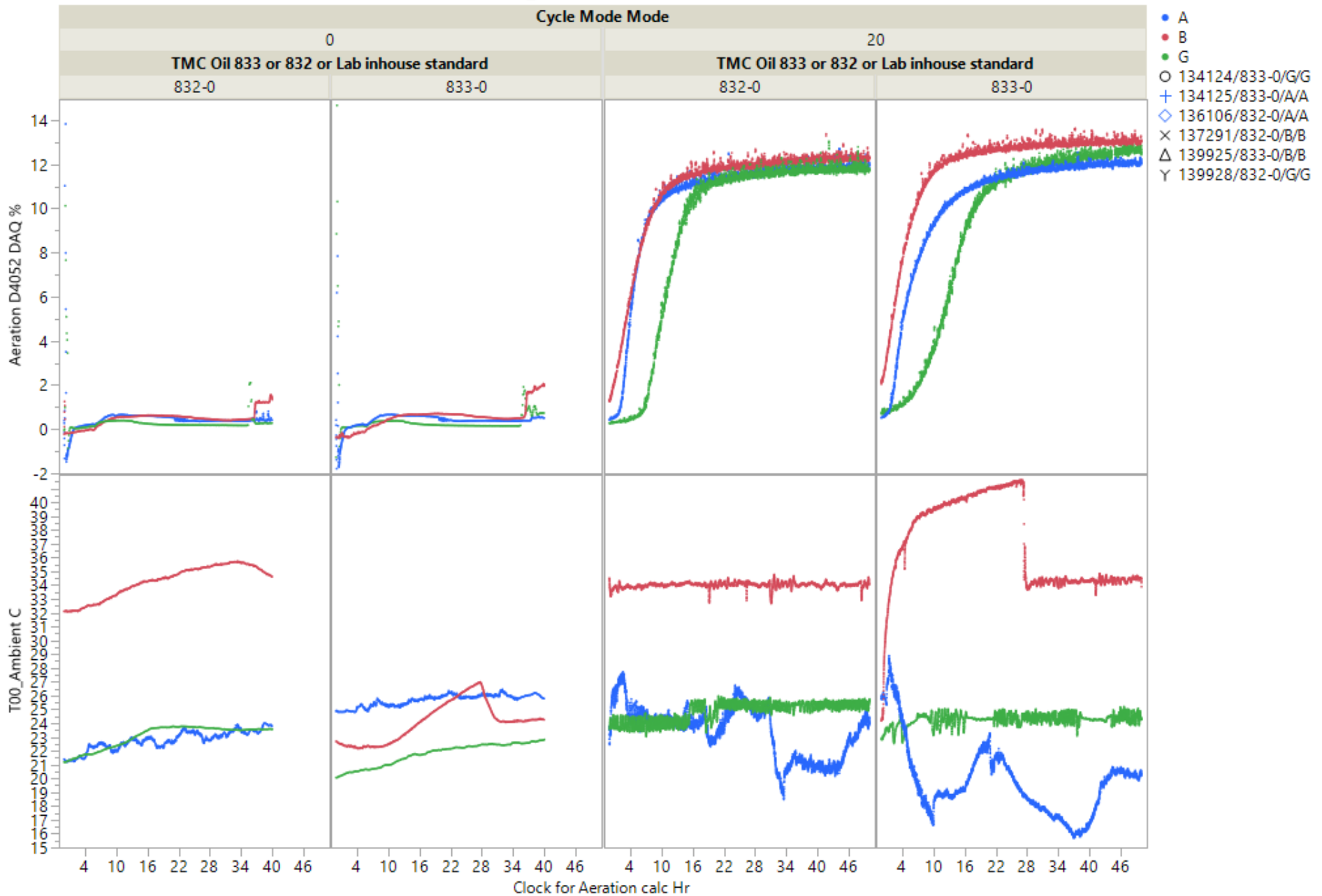


# Zooming in...

## Aeration D4052 DAQ % & EngSpd rpm vs. Clock for Aeration calc Hr

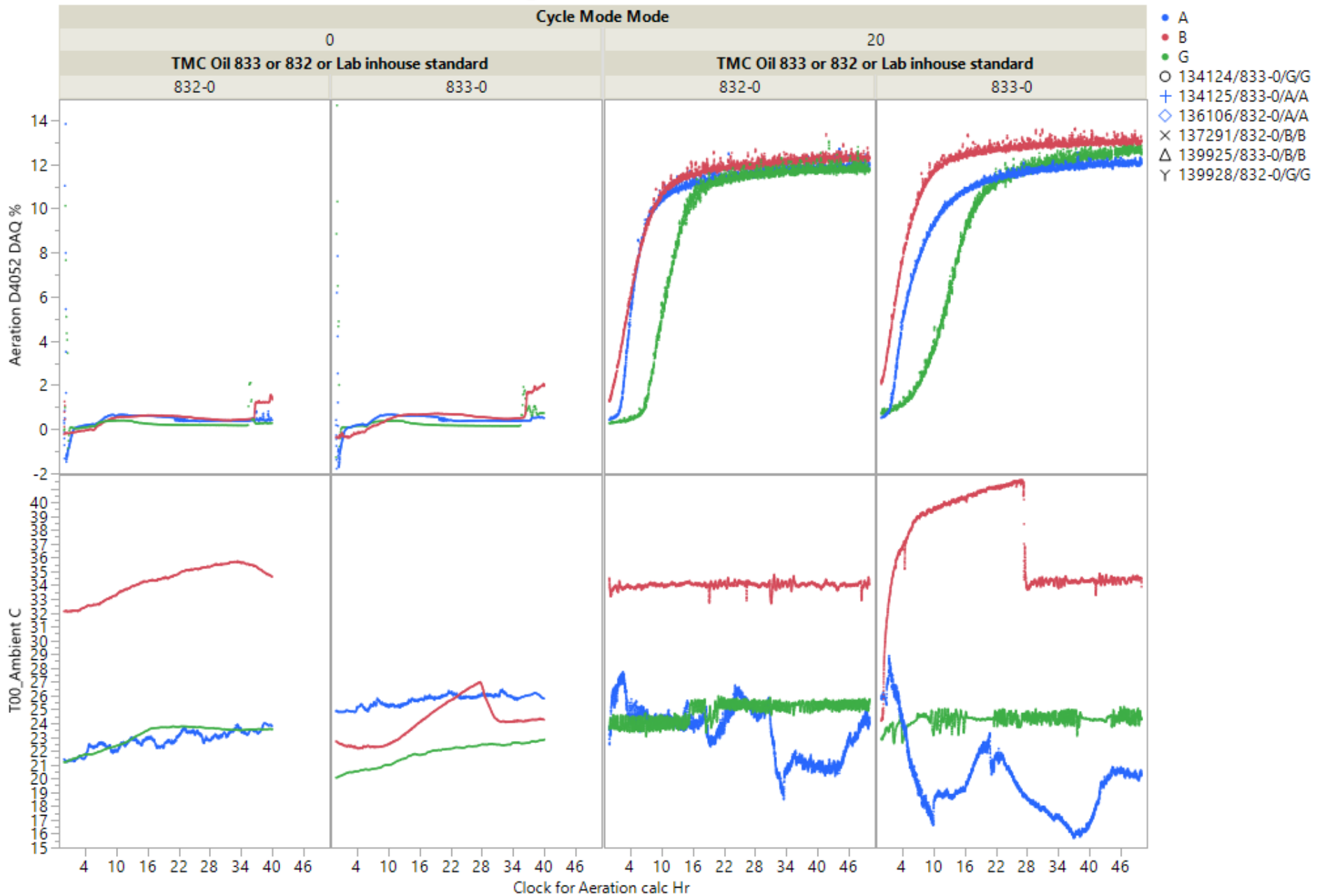


# Aeration D4052 DAQ % & T00\_Ambient C vs. Clock for Aeration calc Hr



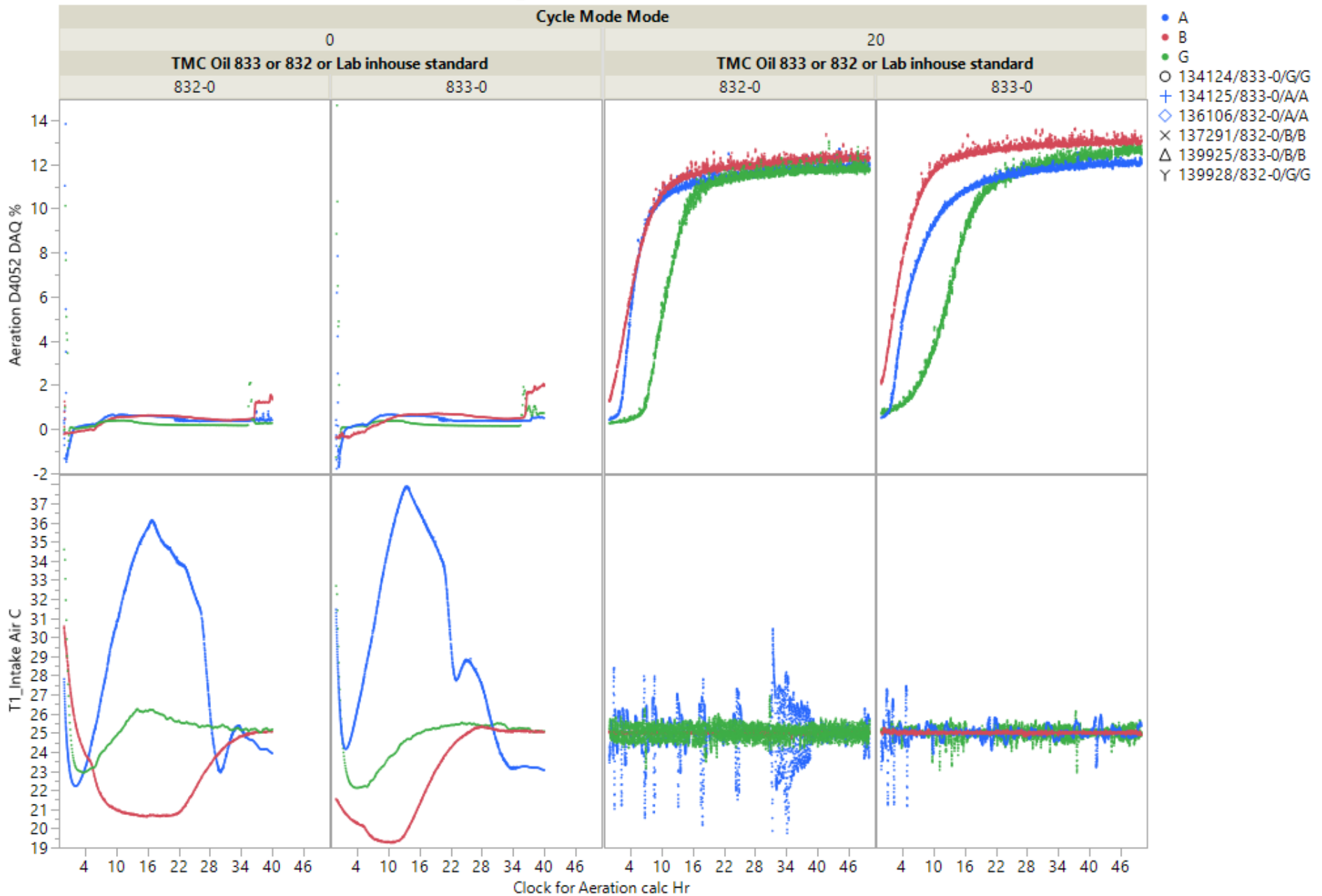


# Aeration D4052 DAQ % & T00\_Ambient C vs. Clock for Aeration calc Hr



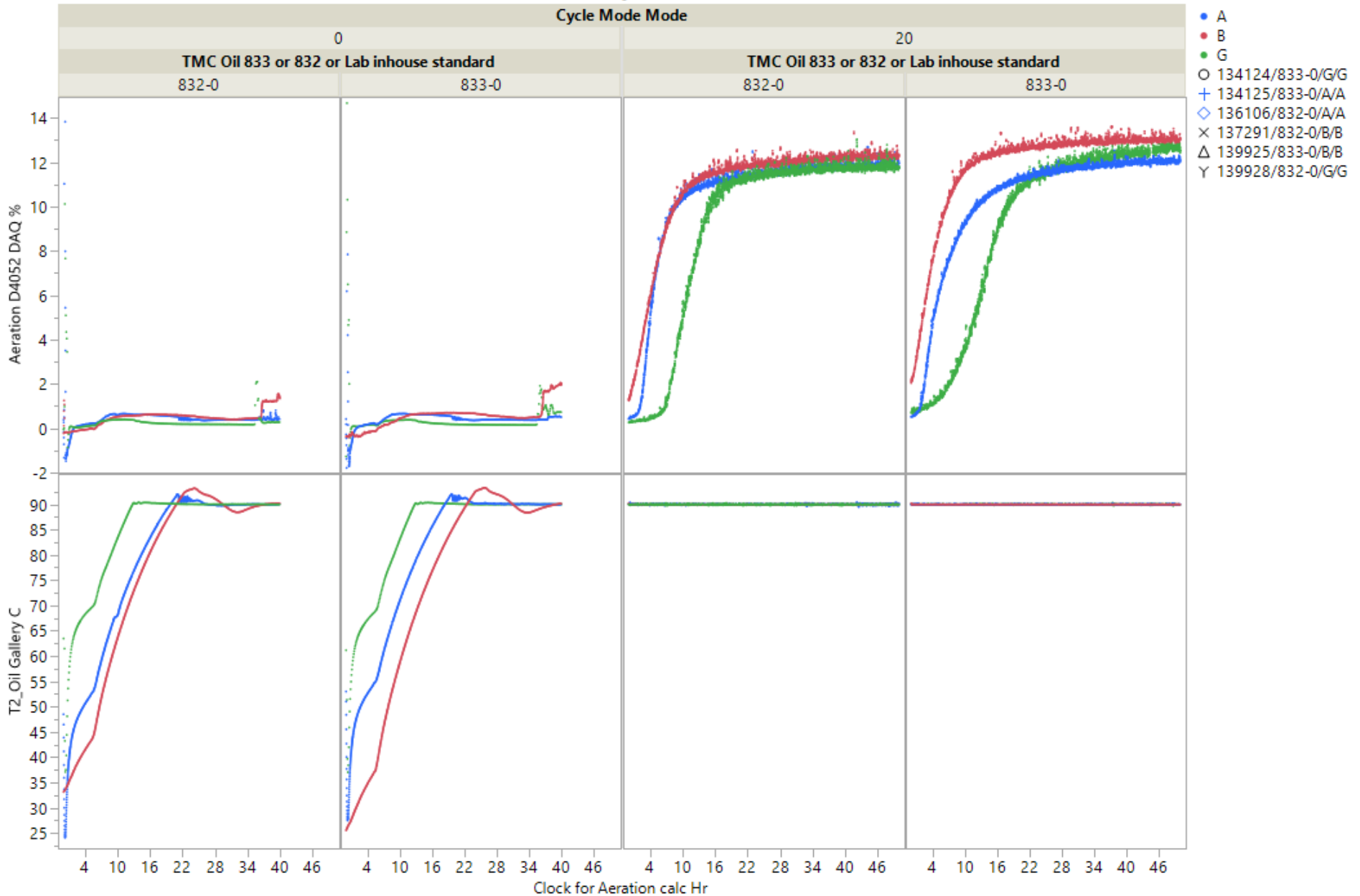


# Aeration D4052 DAQ % & T1\_Intake Air C vs. Clock for Aeration calc Hr



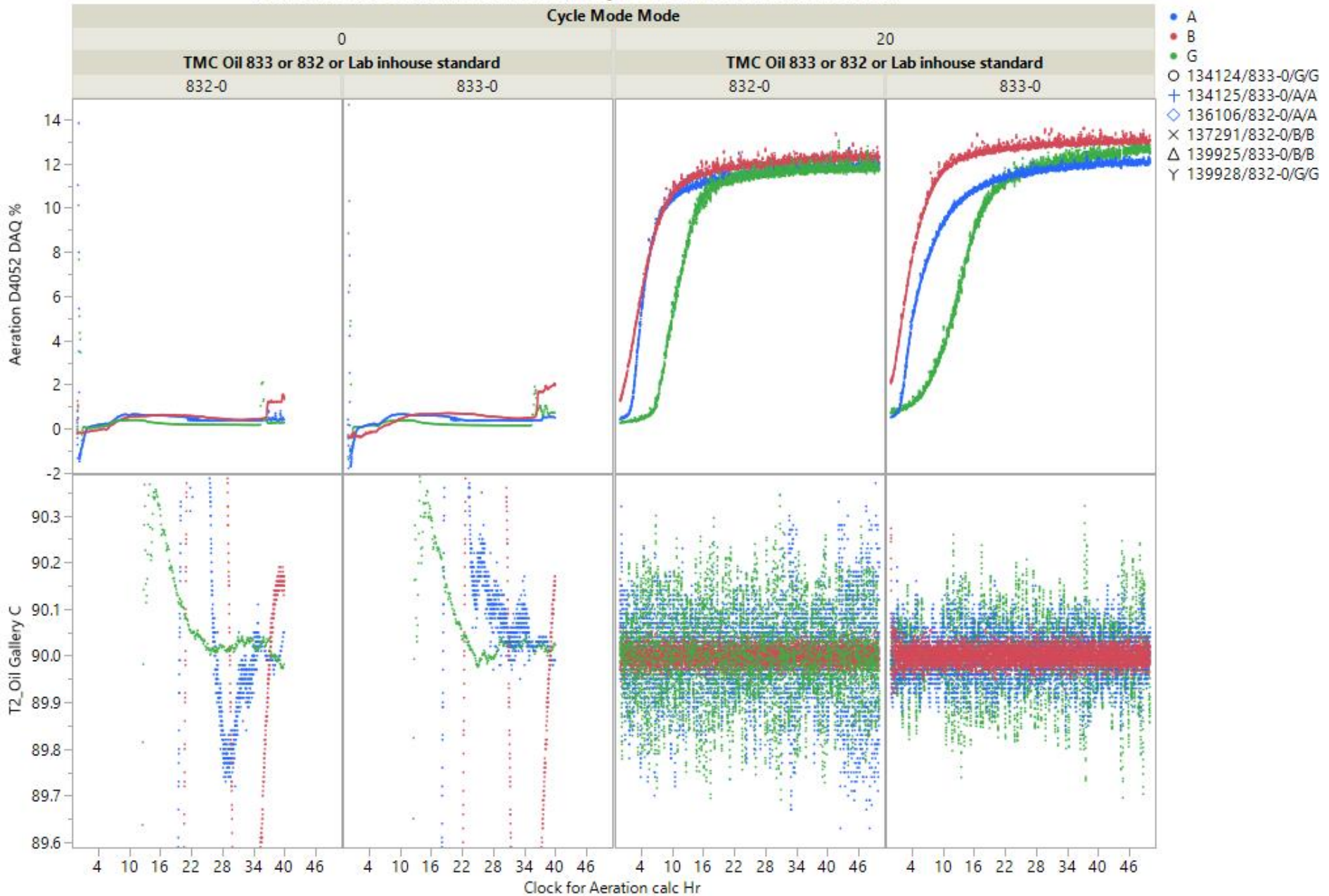
- A
- B
- G
- 134124/833-0/G/G
- + 134125/833-0/A/A
- ◇ 136106/832-0/A/A
- × 137291/832-0/B/B
- △ 139925/833-0/B/B
- Y 139928/832-0/G/G

# Aeration D4052 DAQ % & T2\_Oil Gallery C vs. Clock for Aeration calc Hr

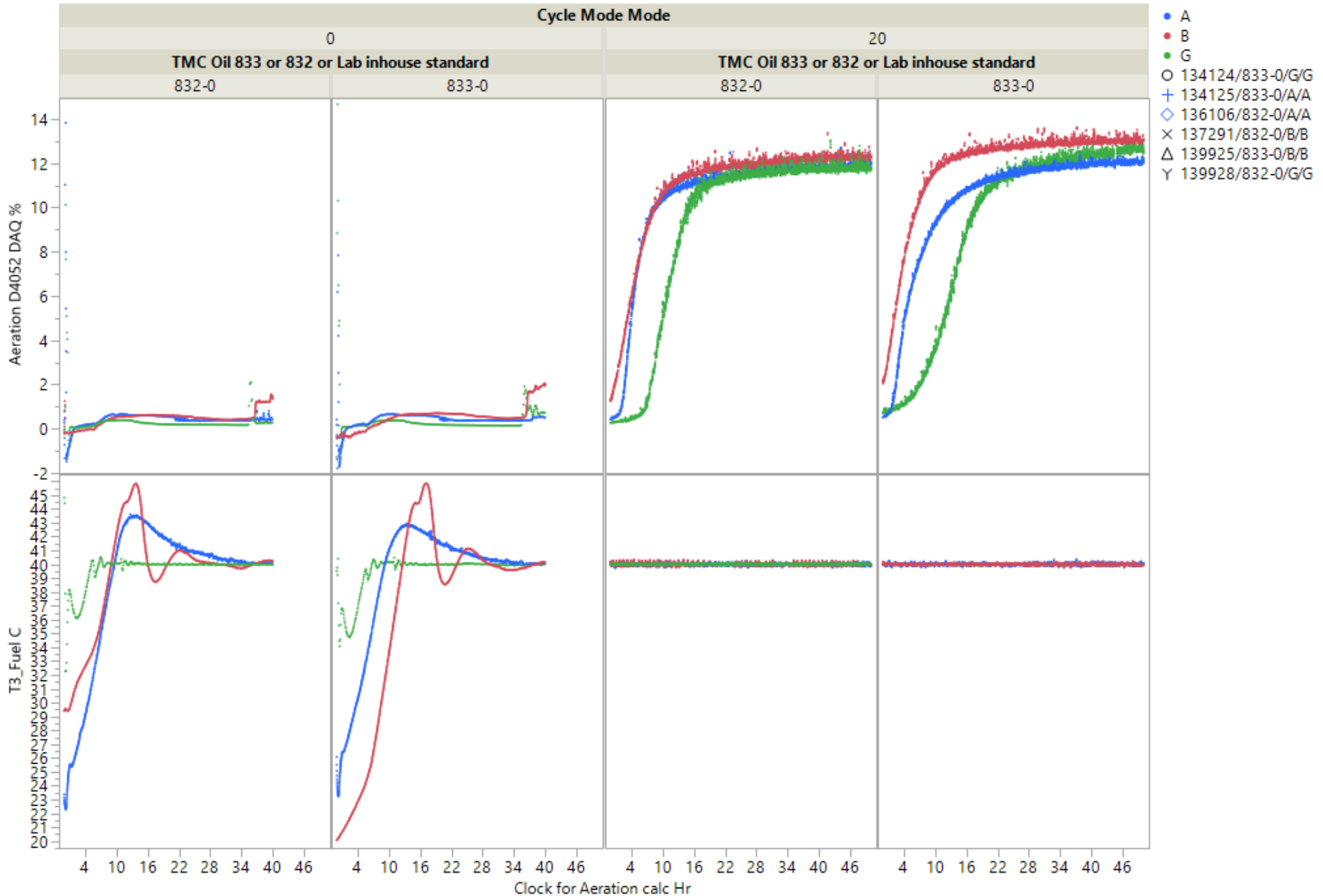


# Zooming in

## Aeration D4052 DAQ % & T2\_Oil Gallery C vs. Clock for Aeration calc Hr

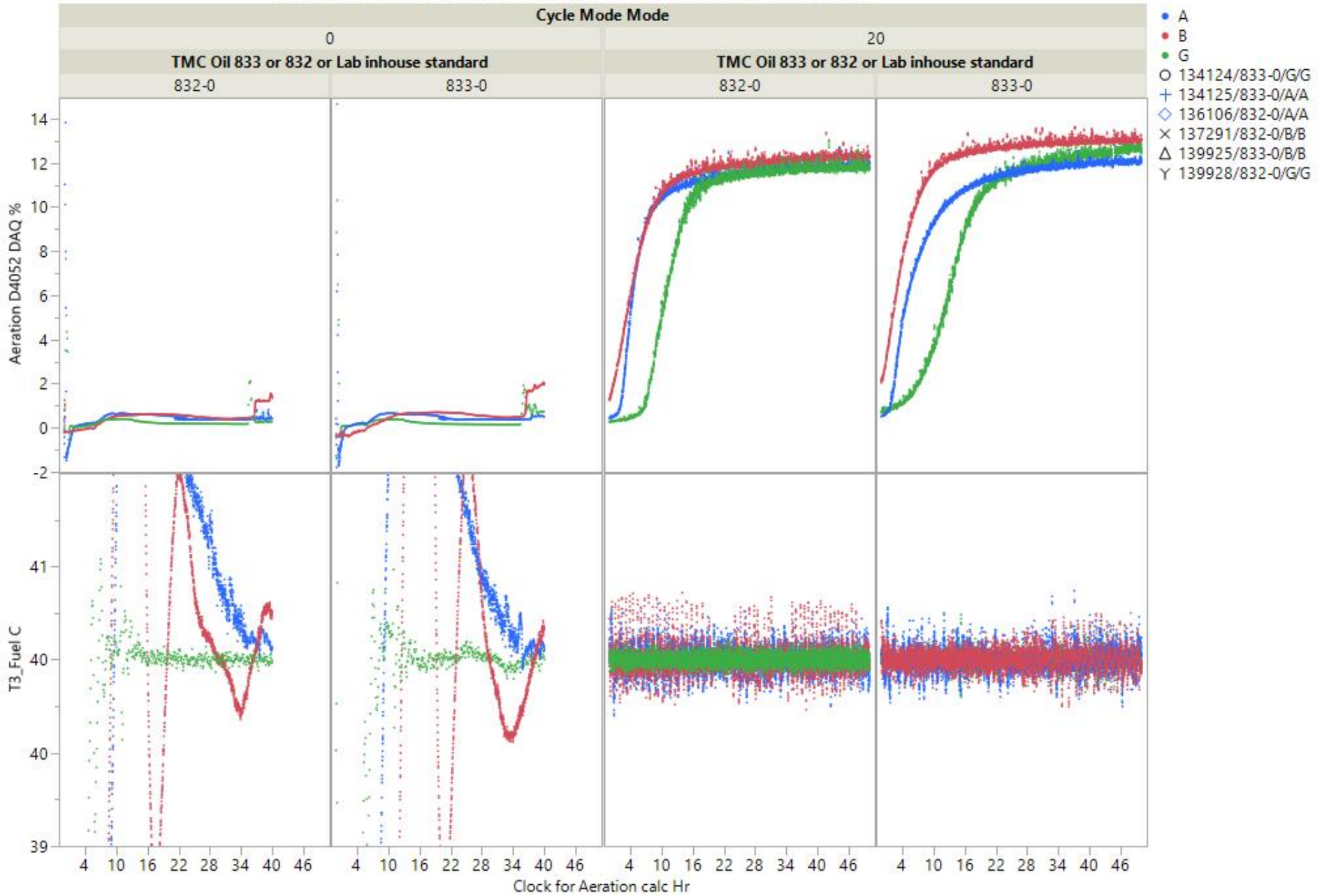


# Aeration D4052 DAQ % & T3\_Fuel C vs. Clock for Aeration calc Hr



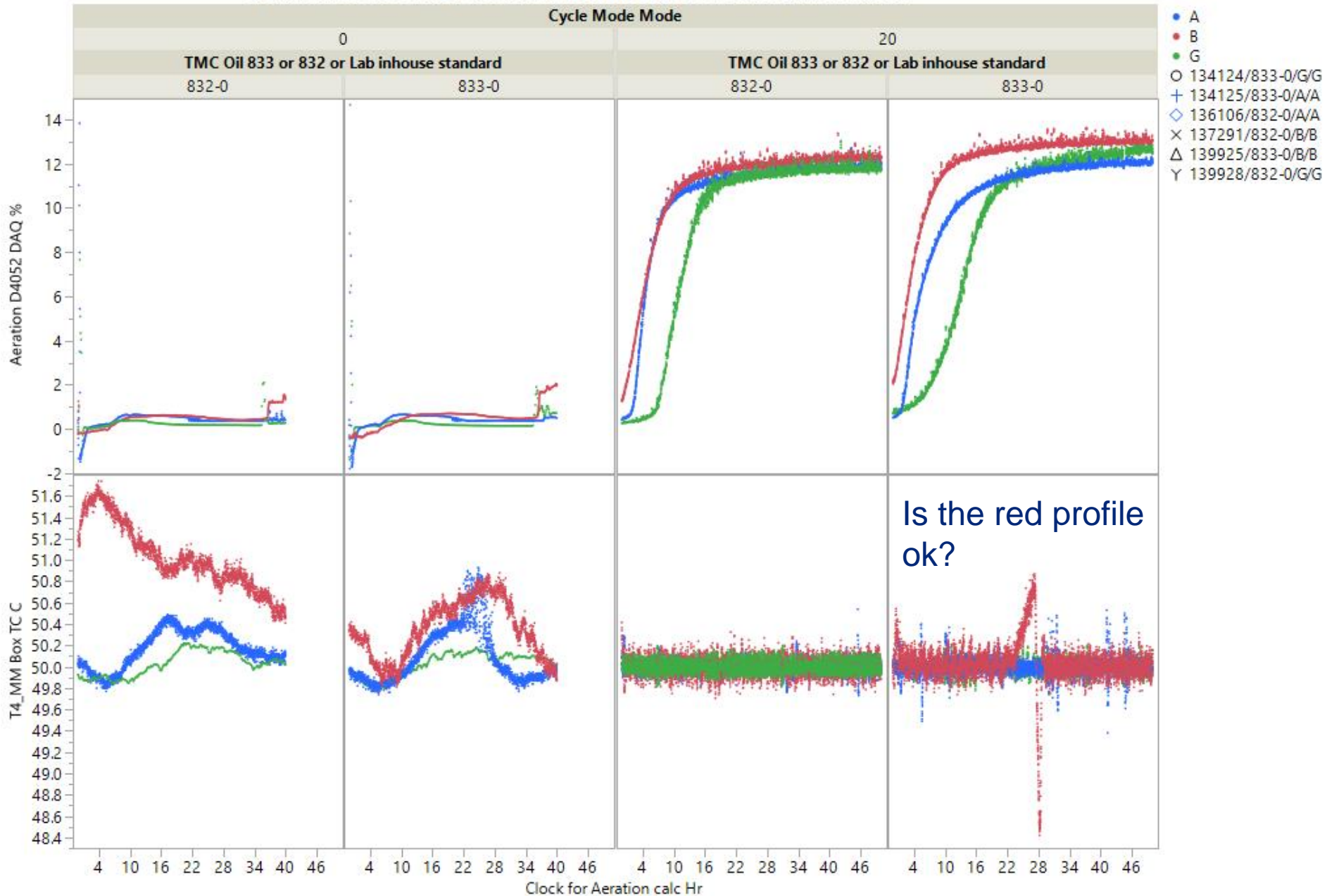
# Zooming in

## Aeration D4052 DAQ % & T3\_Fuel C vs. Clock for Aeration calc Hr



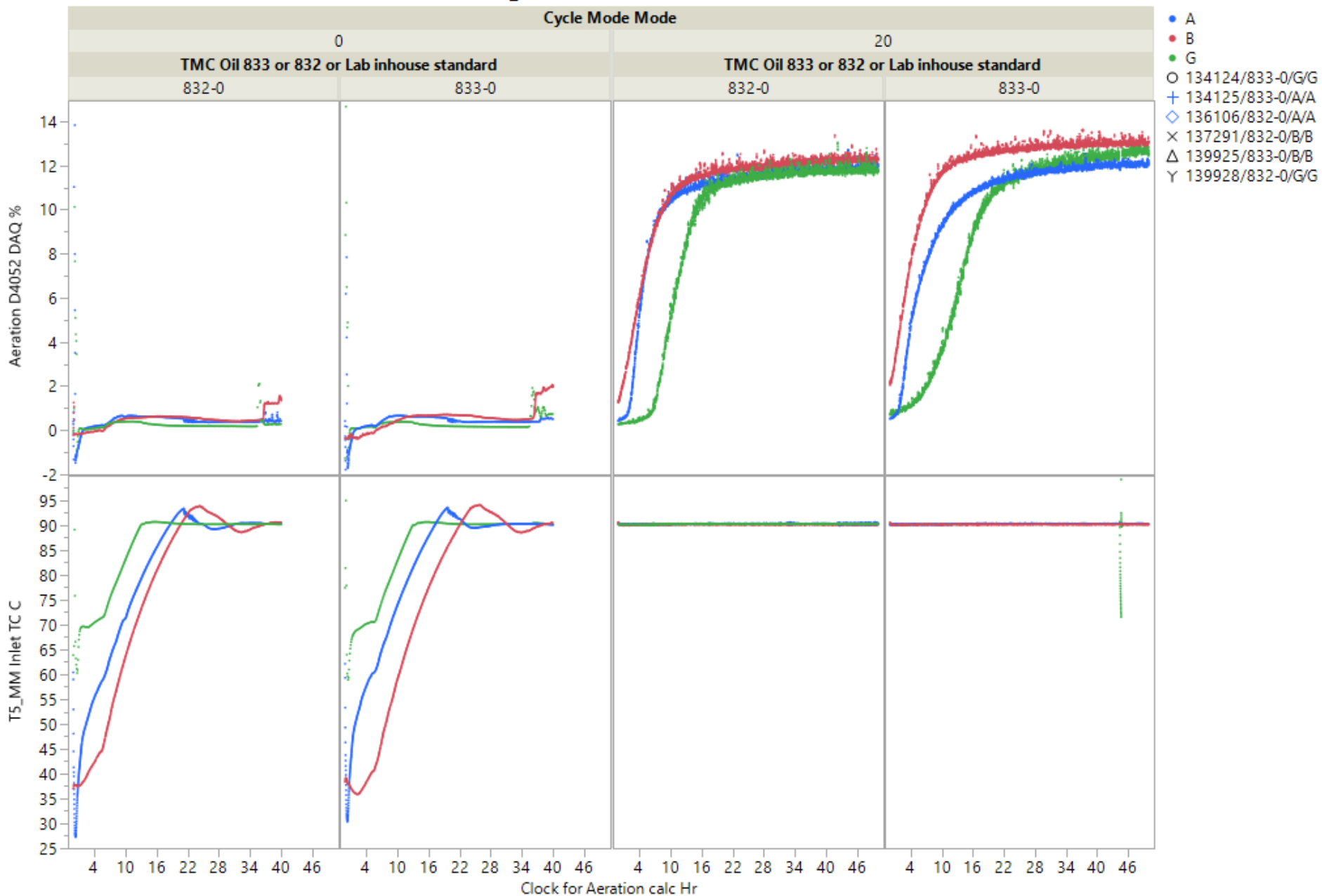


# Aeration D4052 DAQ % & T4\_MM Box TCC vs. Clock for Aeration calc Hr



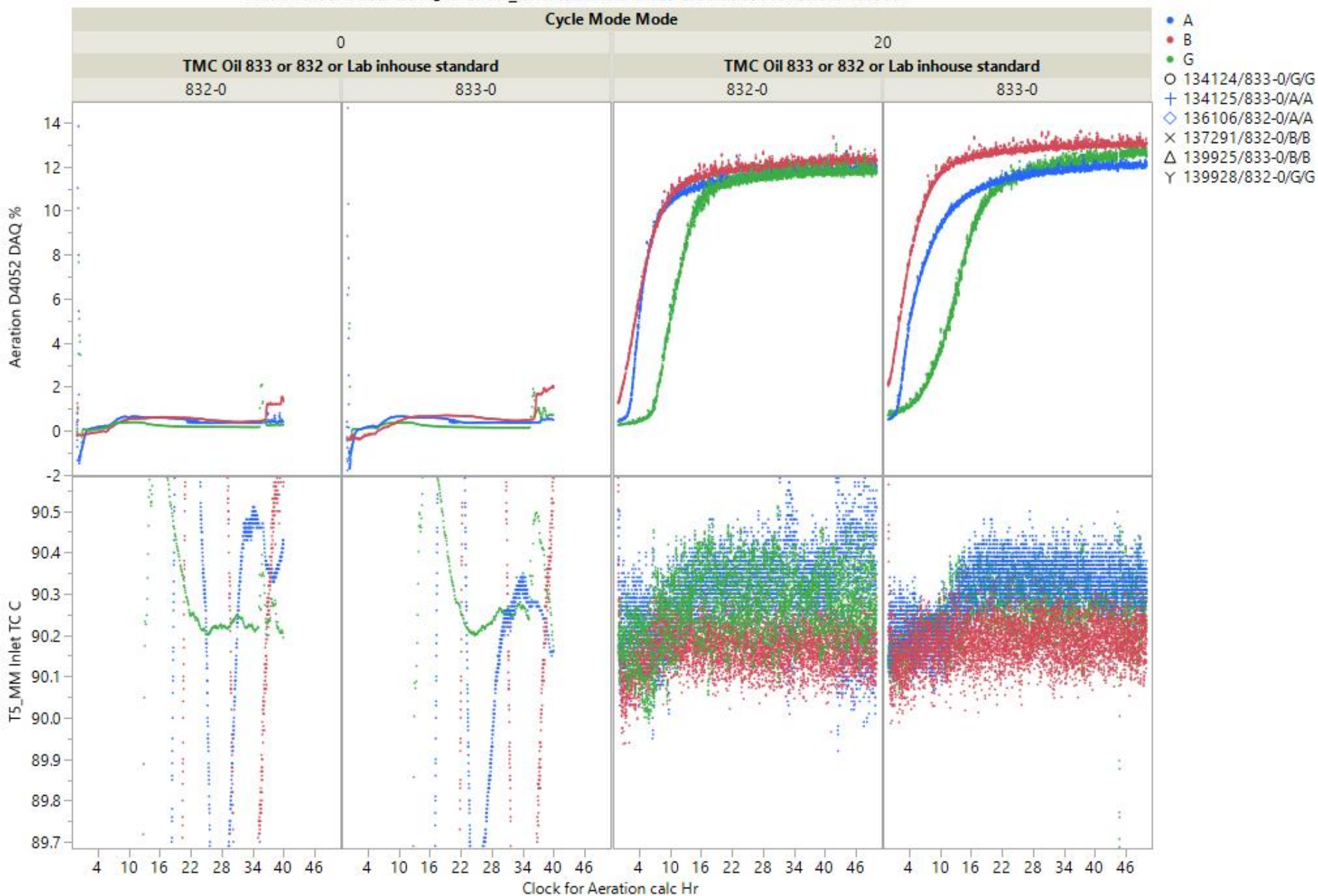


# Aeration D4052 DAQ % & T5\_MM Inlet TC C vs. Clock for Aeration calc Hr



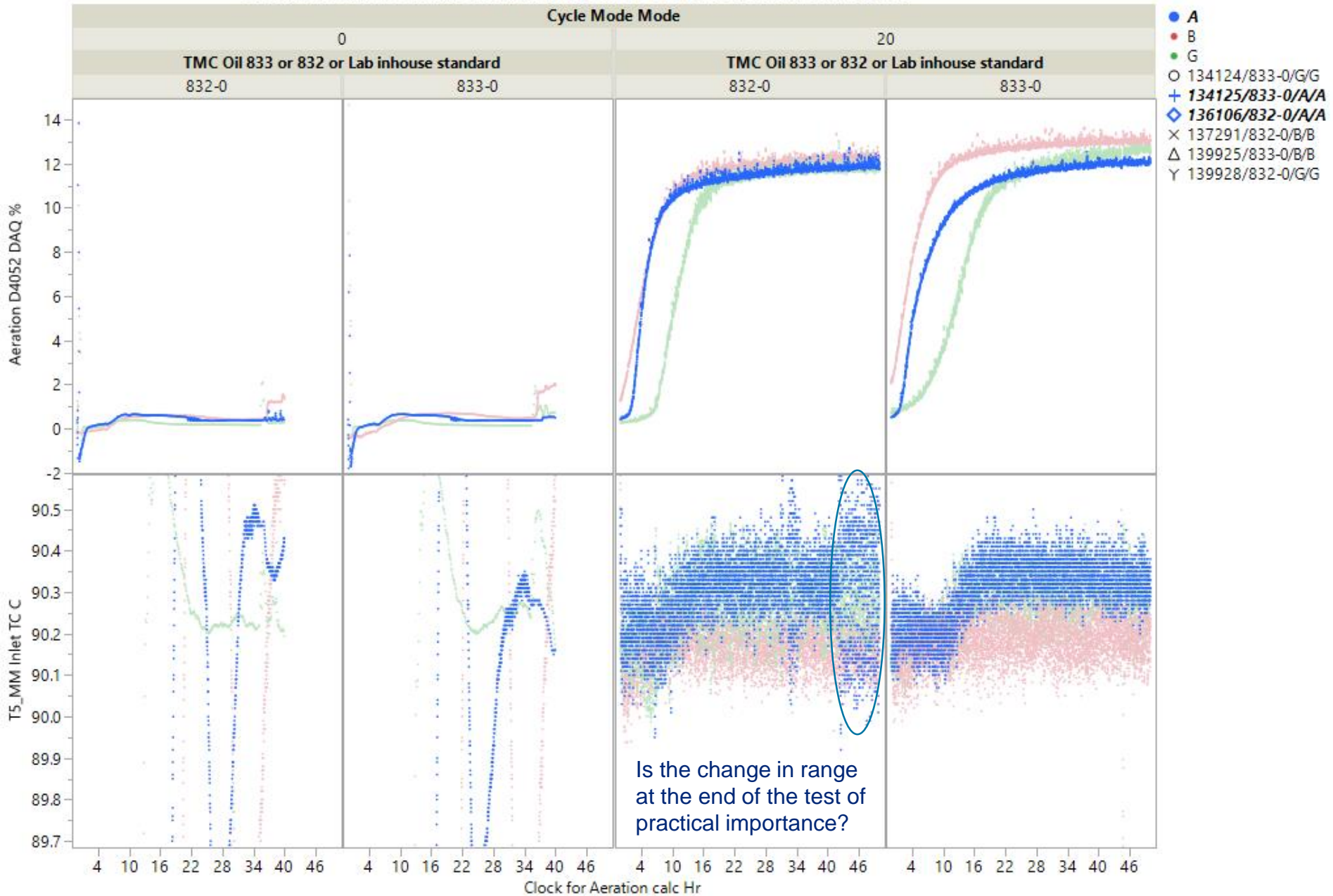
# Zooming in

## Aeration D4052 DAQ % & T5\_MM Inlet TC C vs. Clock for Aeration calc Hr



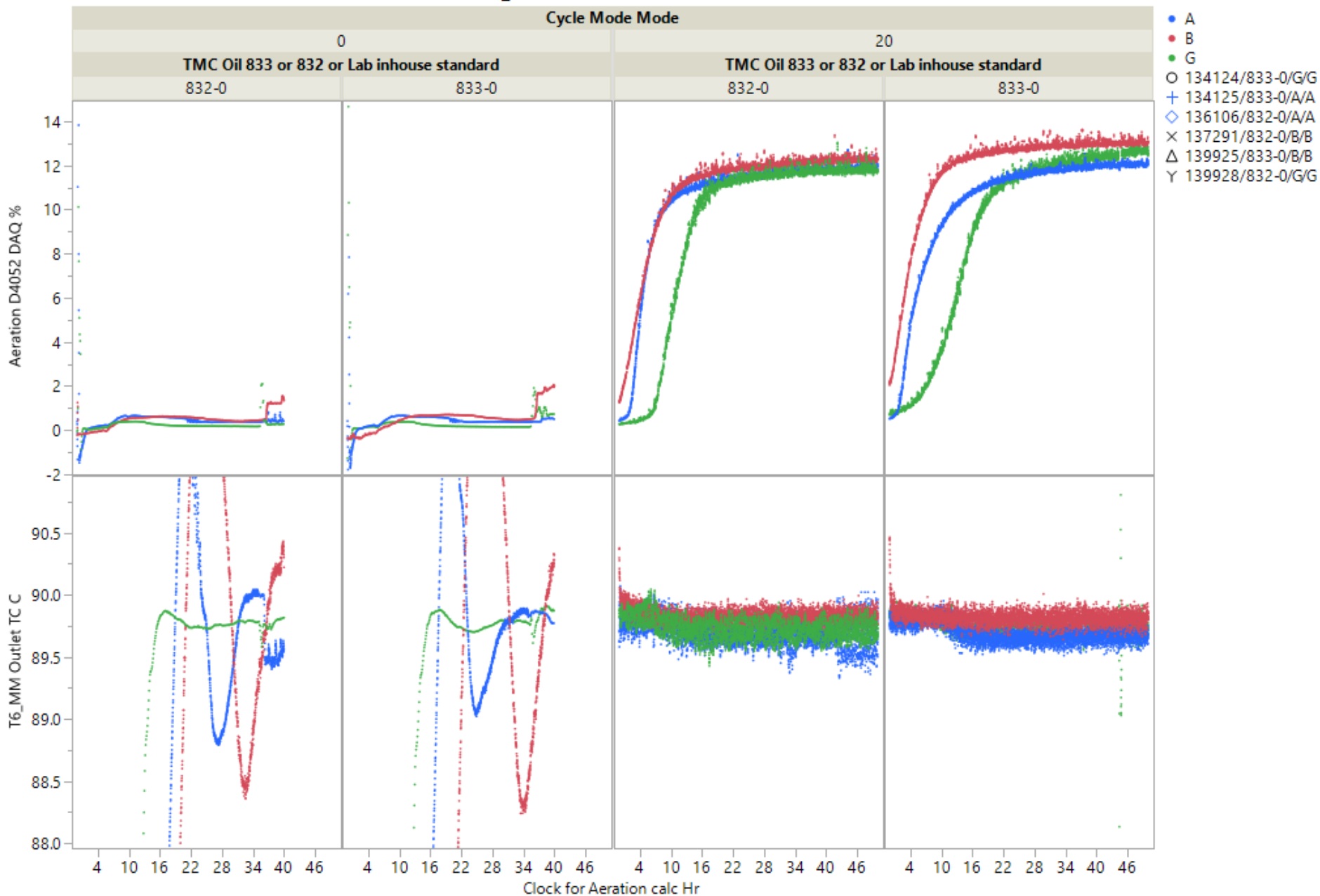
# Zooming in

## Aeration D4052 DAQ % & T5\_MM Inlet TC C vs. Clock for Aeration calc Hr



# Zooming in

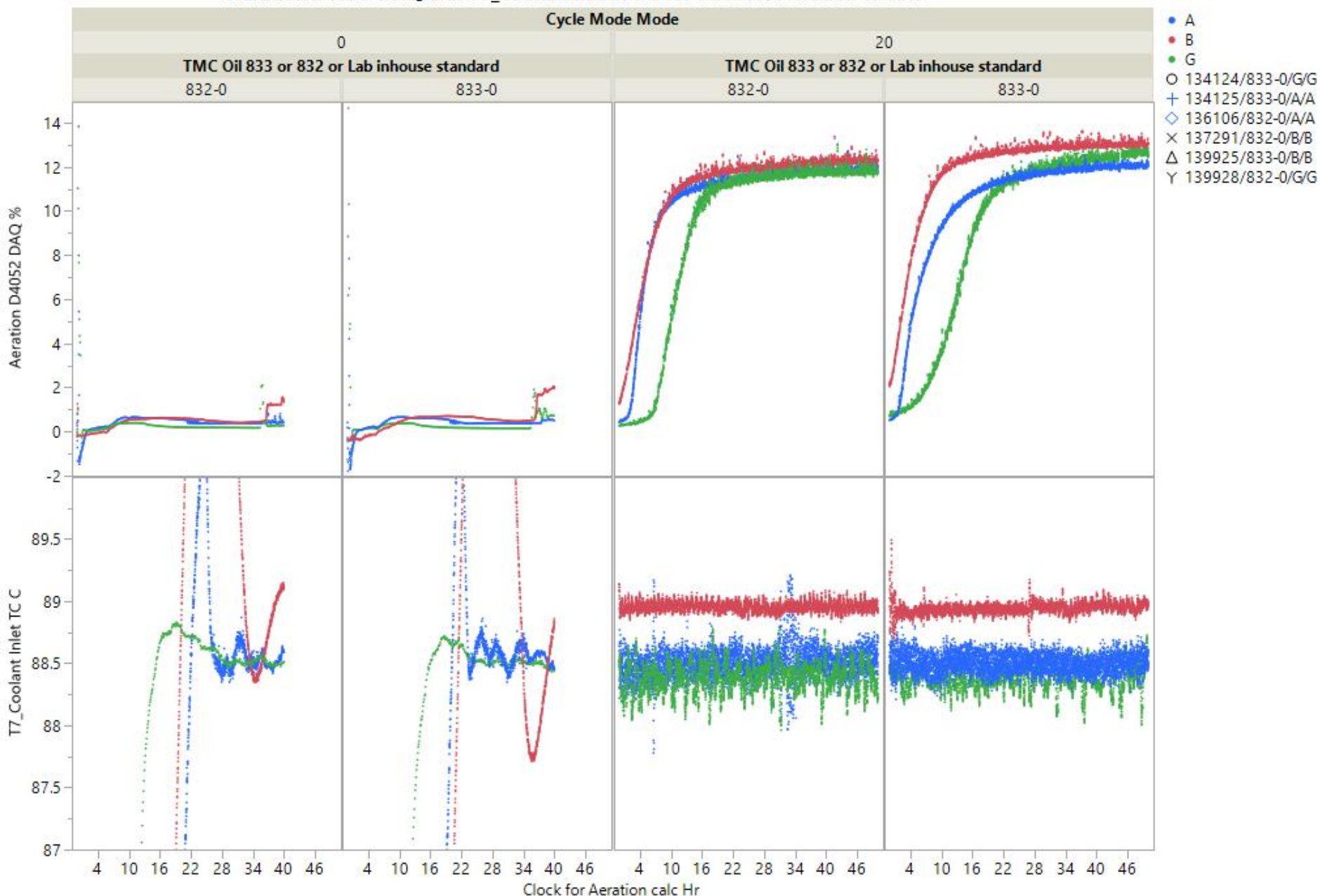
## Aeration D4052 DAQ % & T6\_MM Outlet TCC vs. Clock for Aeration calc Hr





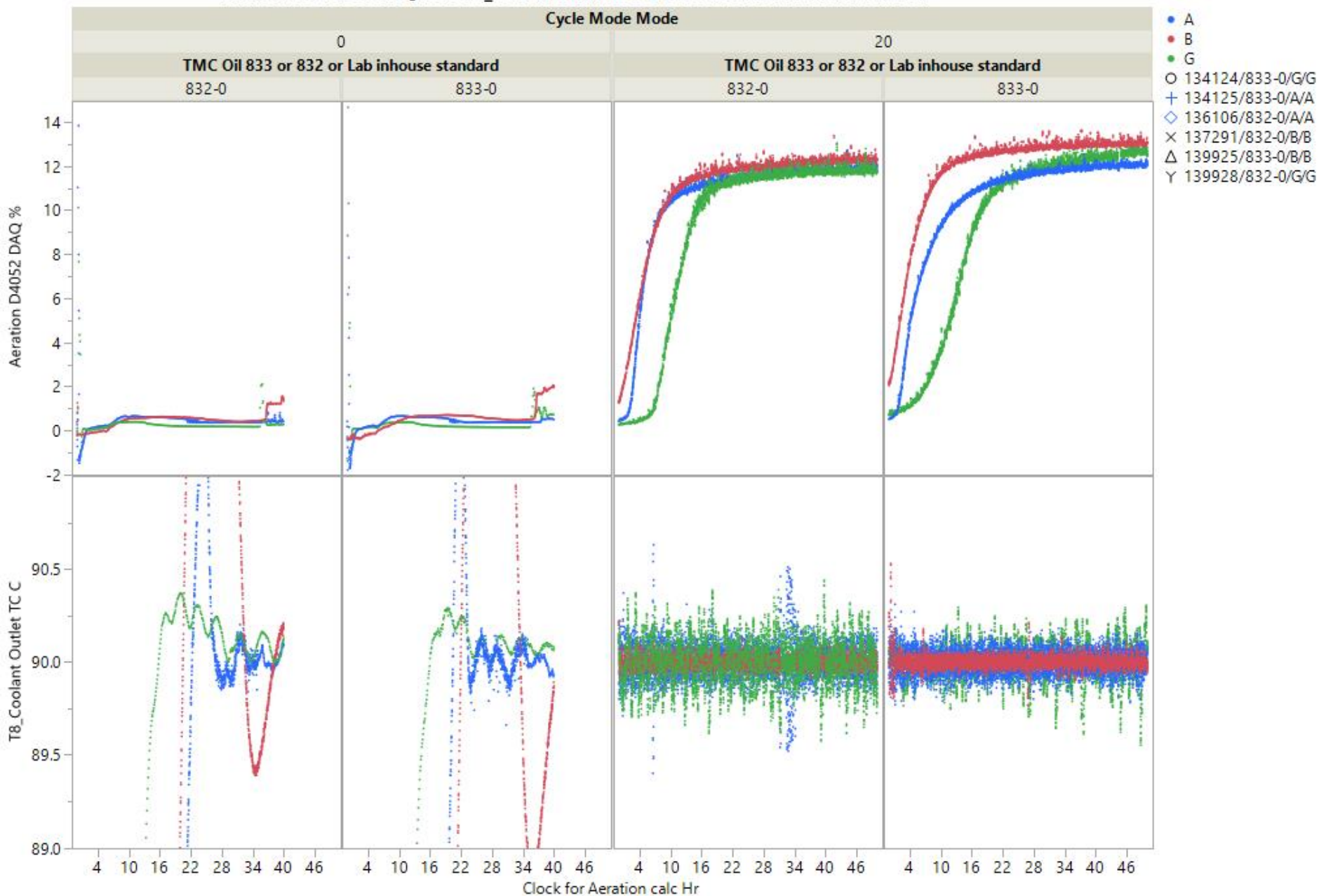
# Zooming in

## Aeration D4052 DAQ % & T7\_Coolant Inlet TC C vs. Clock for Aeration calc Hr



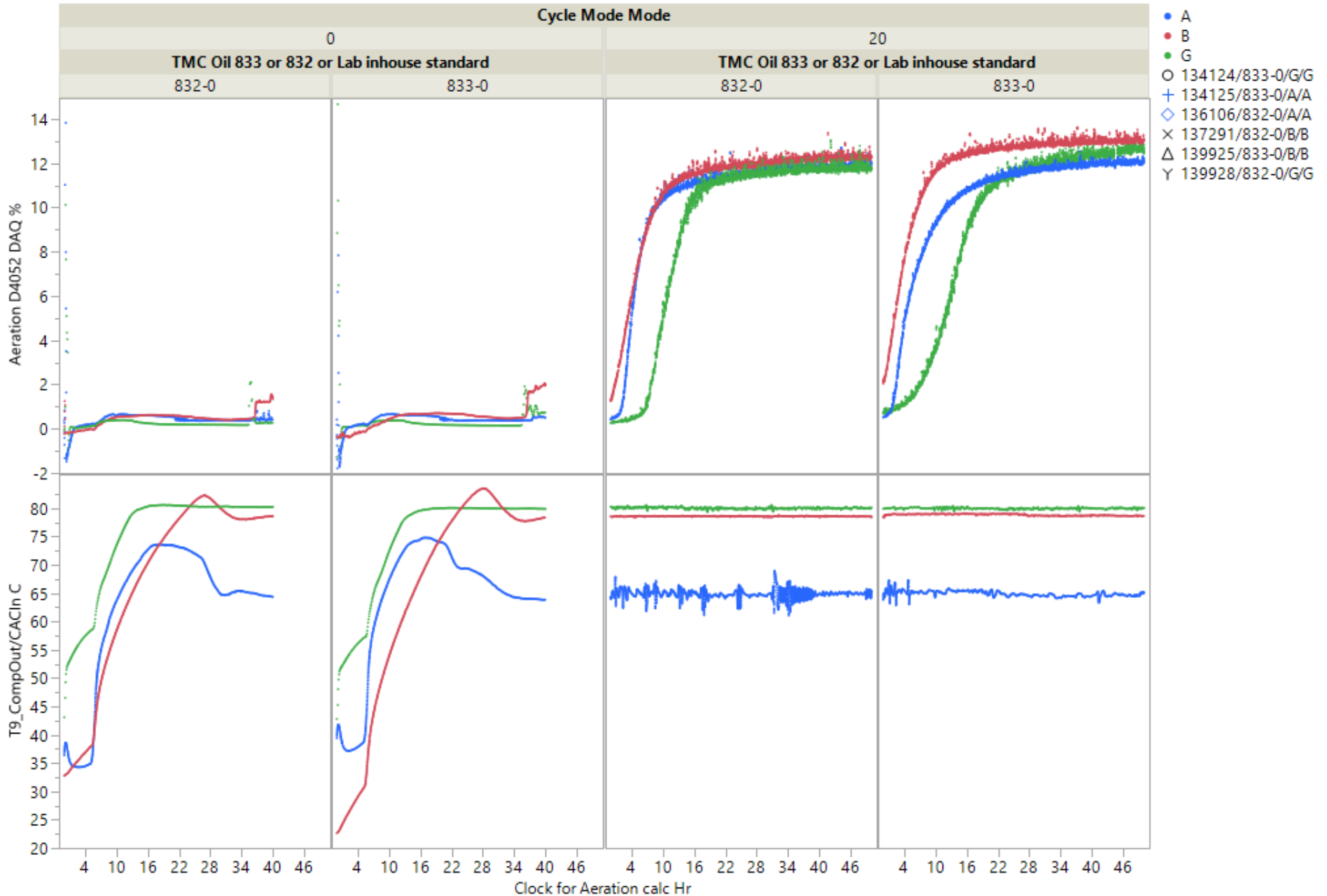
# Zooming in

Aeration D4052 DAQ % & T8\_Coolant Outlet TC C vs. Clock for Aeration calc Hr



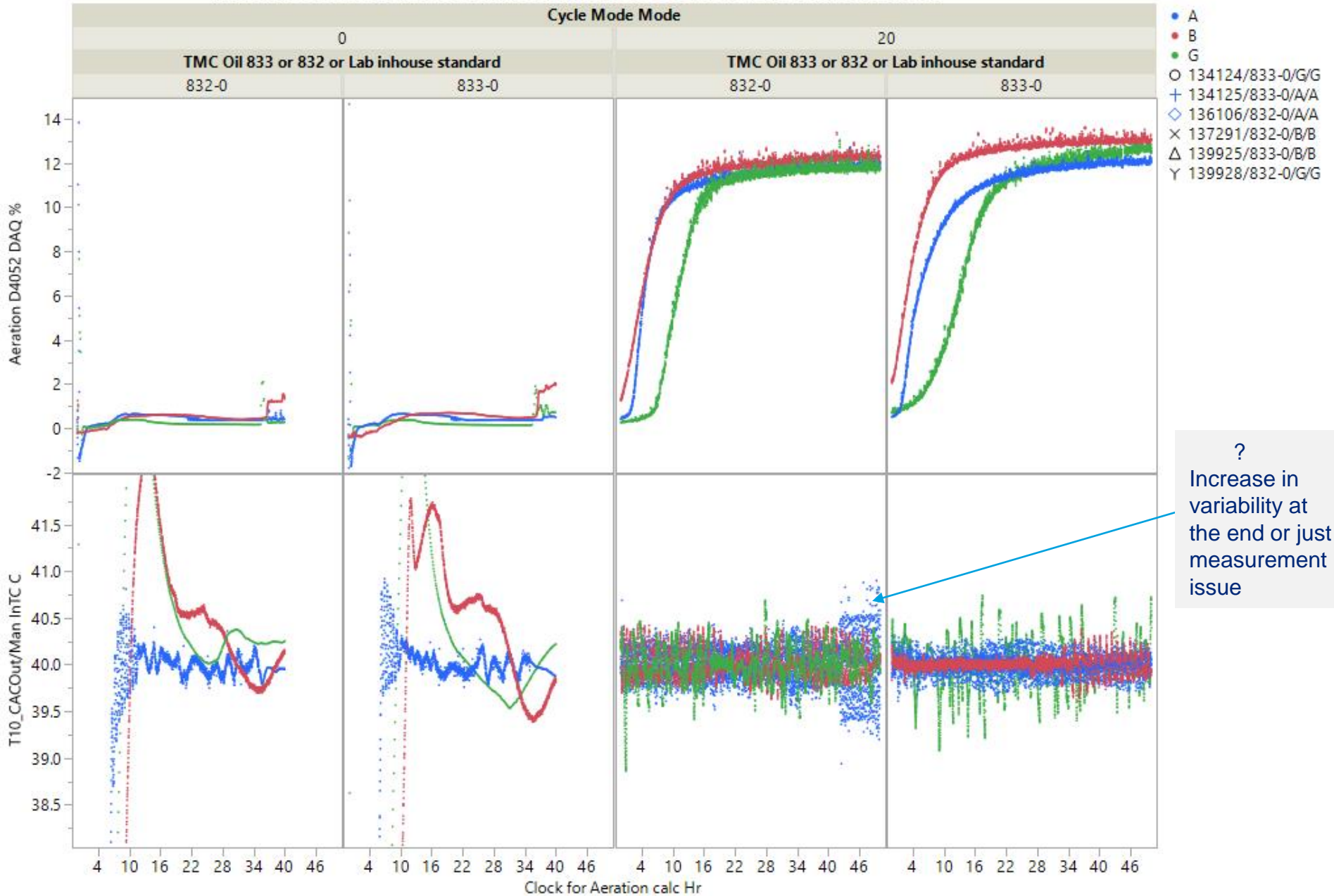


# Aeration D4052 DAQ % & T9\_CompOut/CACIn C vs. Clock for Aeration calc Hr



# Zooming in

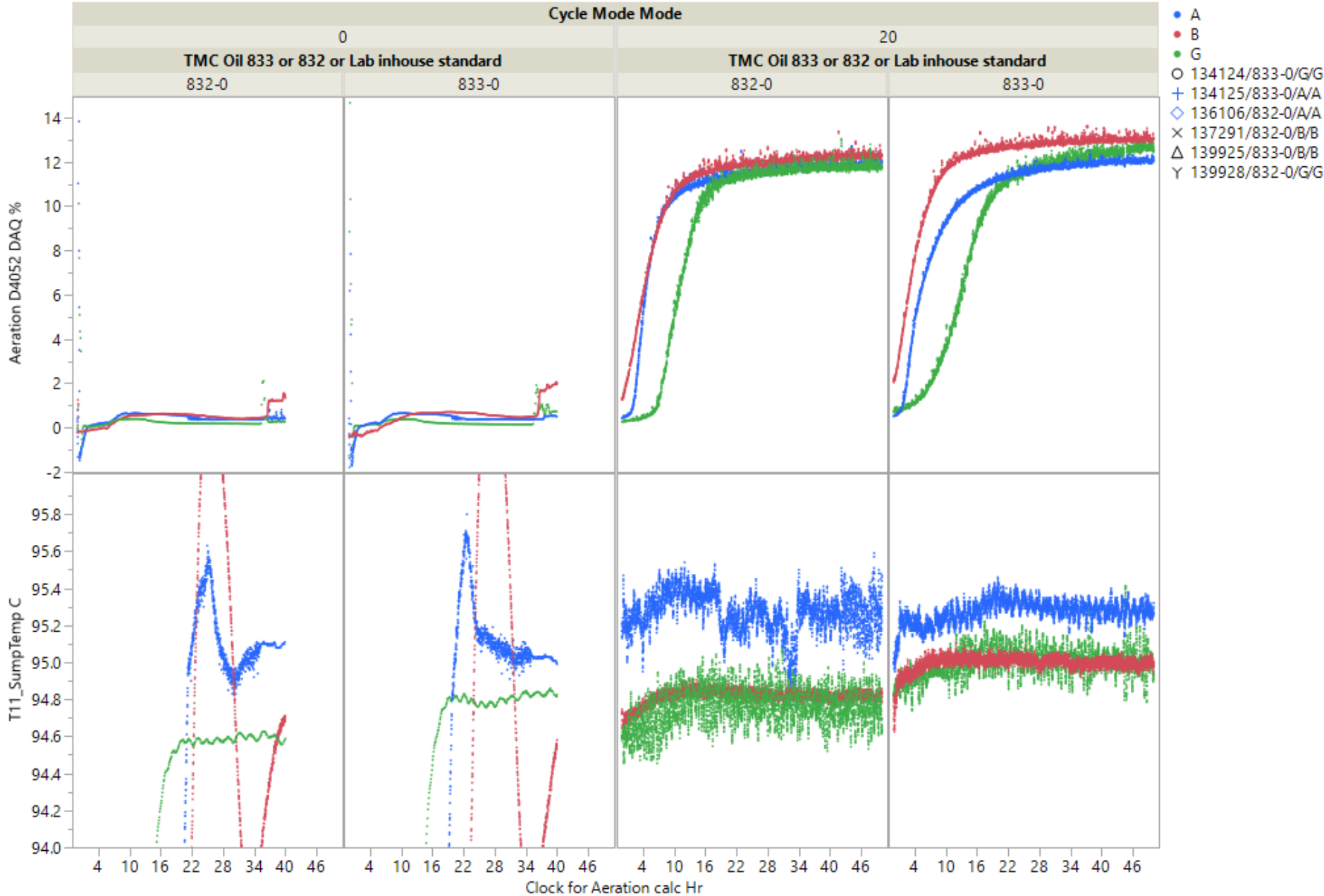
## Aeration D4052 DAQ % & T10\_CACOut/Man InTC C vs. Clock for Aeration calc Hr



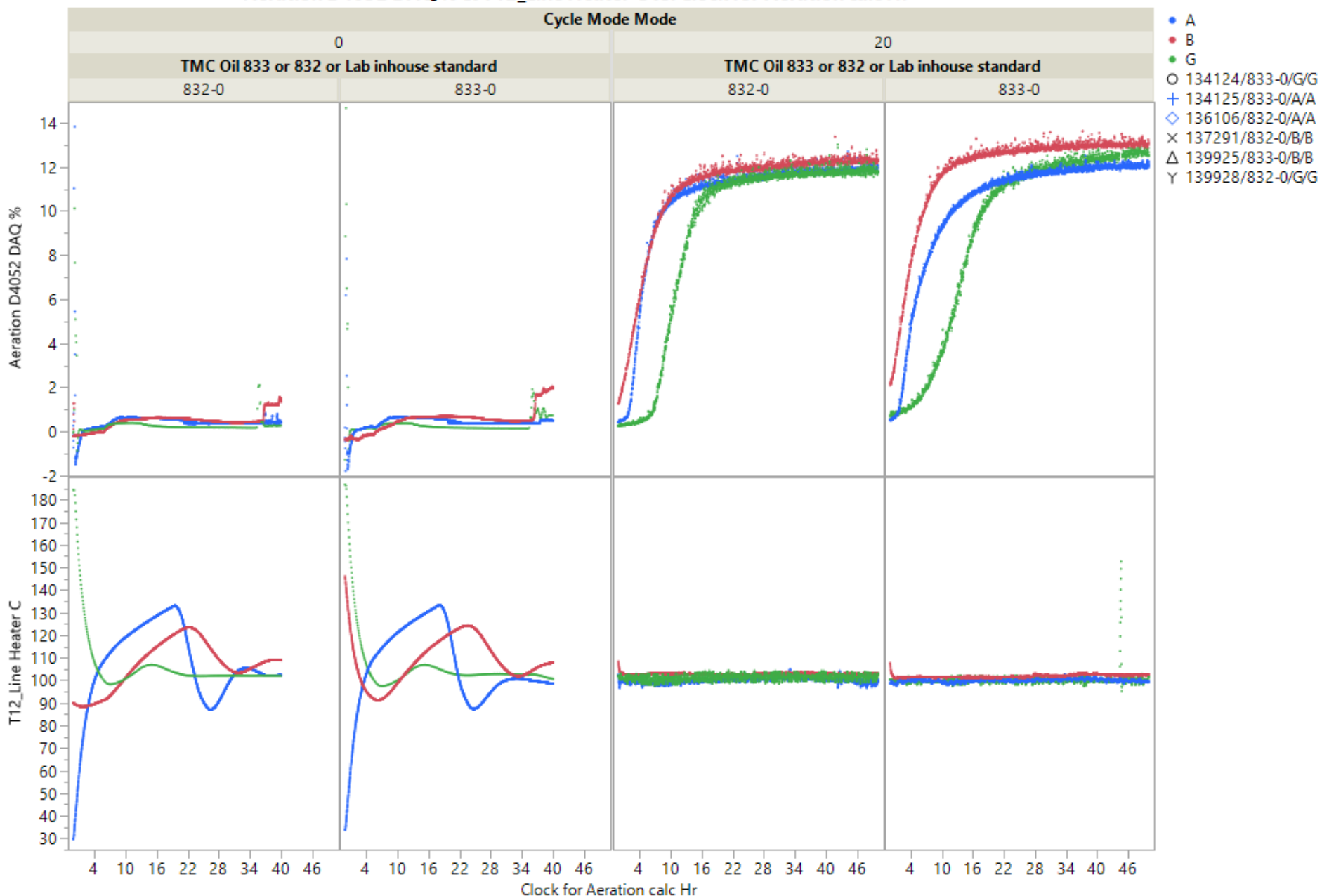
?  
Increase in  
variability at  
the end or just  
measurement  
issue

# Zooming in

## Aeration D4052 DAQ % & T11\_SumpTemp C vs. Clock for Aeration calc Hr

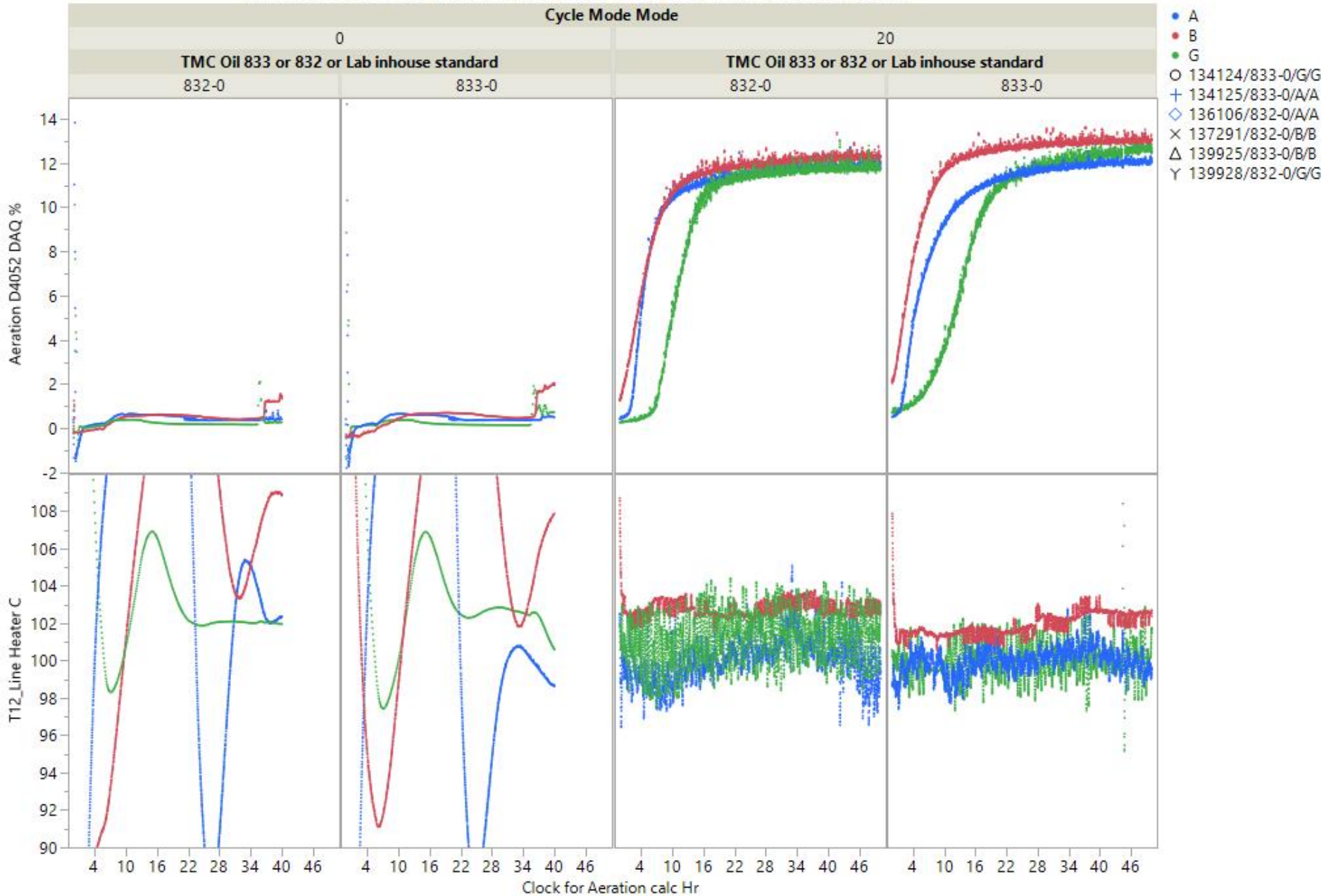


# Aeration D4052 DAQ % & T12\_Line Heater C vs. Clock for Aeration calc Hr



# Zooming in

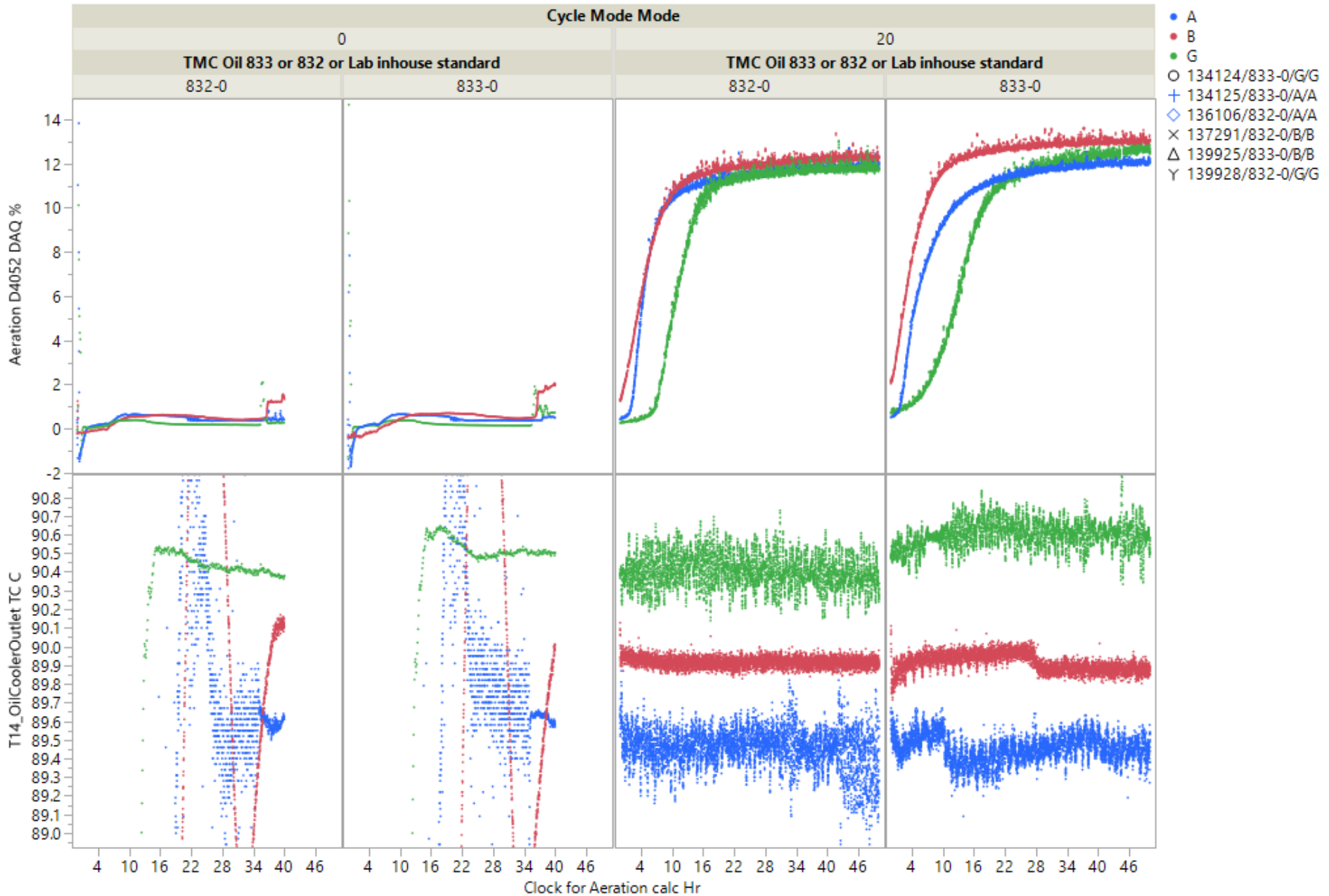
## Aeration D4052 DAQ % & T12\_Line Heater C vs. Clock for Aeration calc Hr





# Zooming in

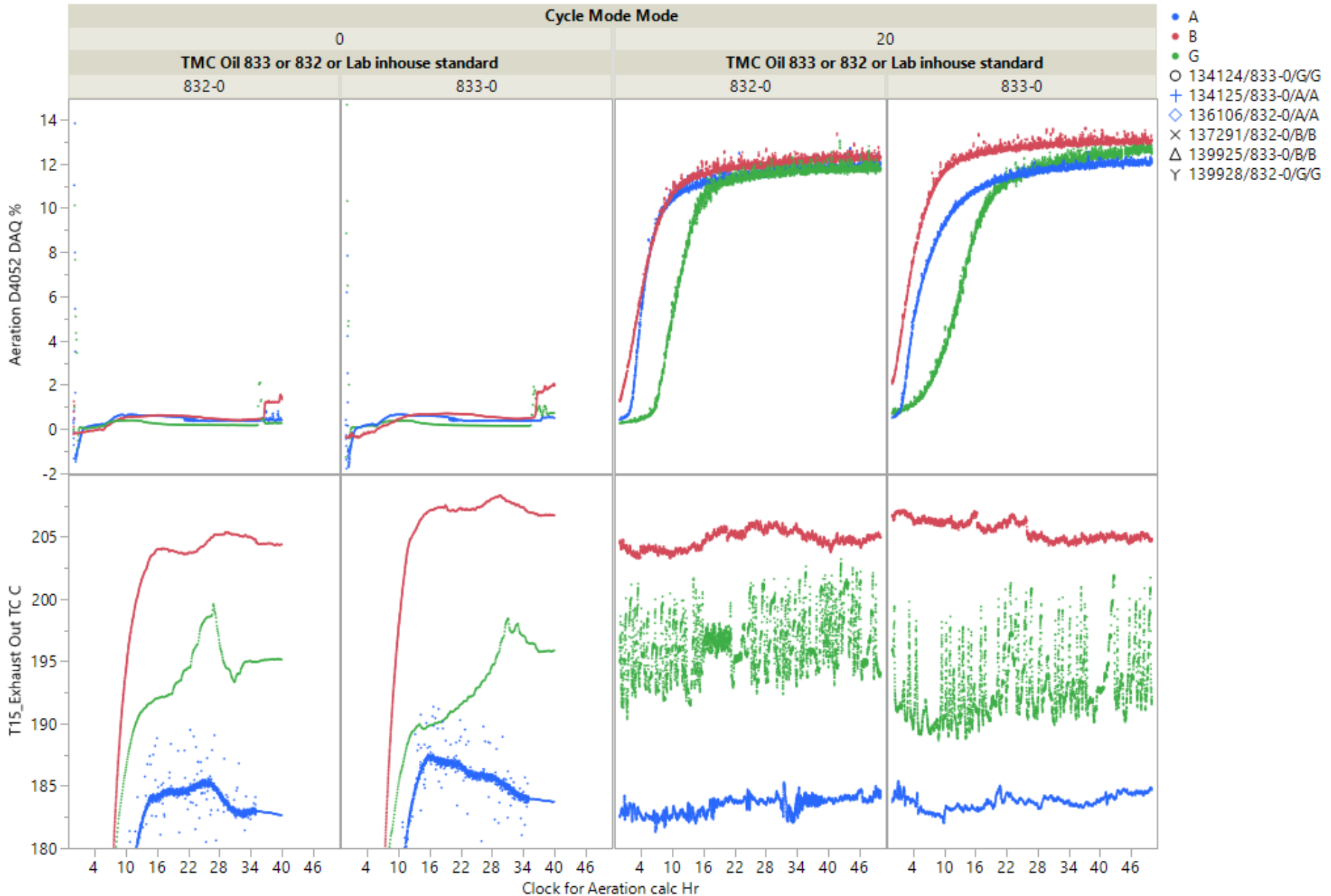
## Aeration D4052 DAQ % & T14\_OilCoolerOutlet TC C vs. Clock for Aeration calc Hr



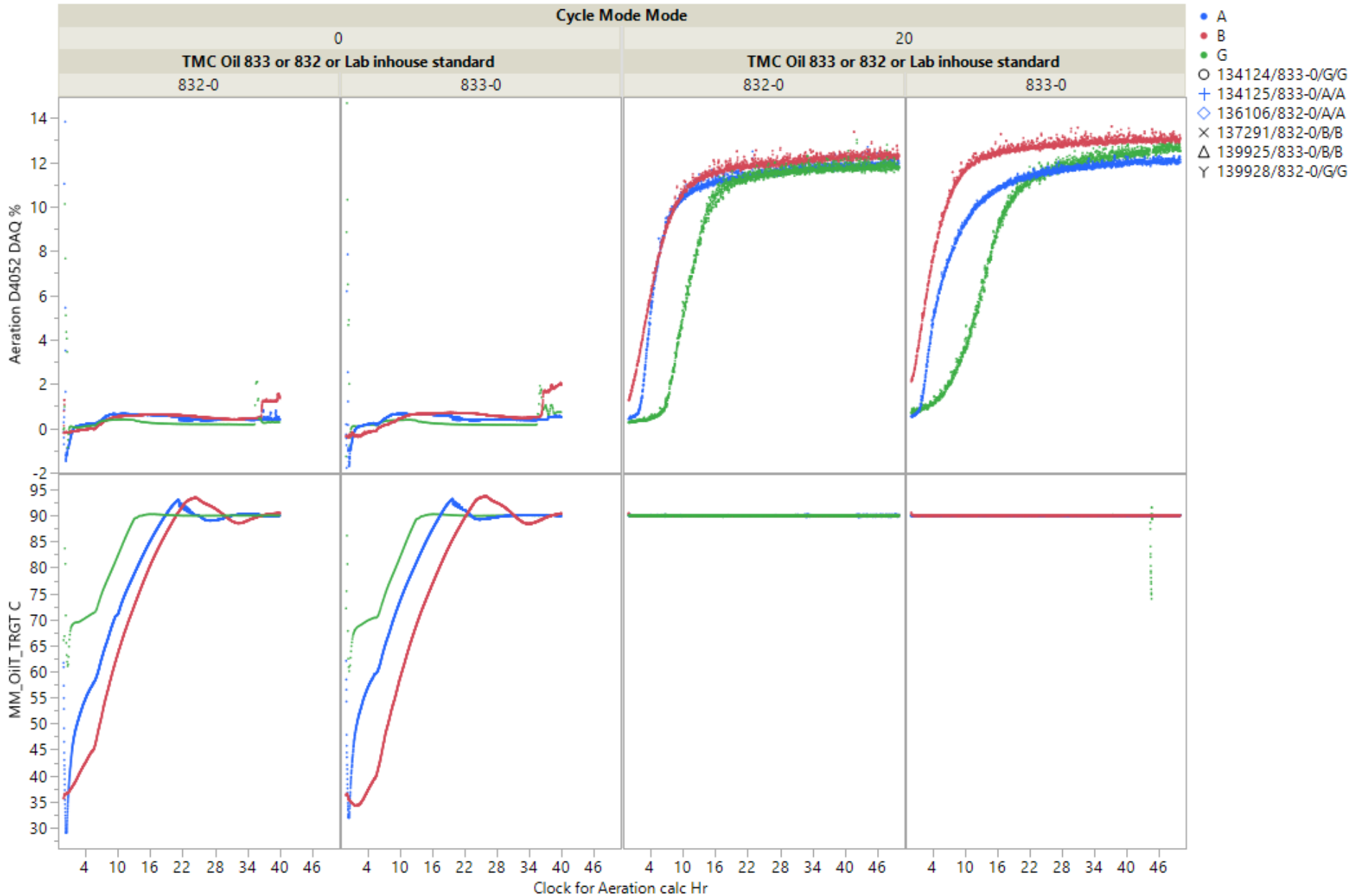


# Zooming in

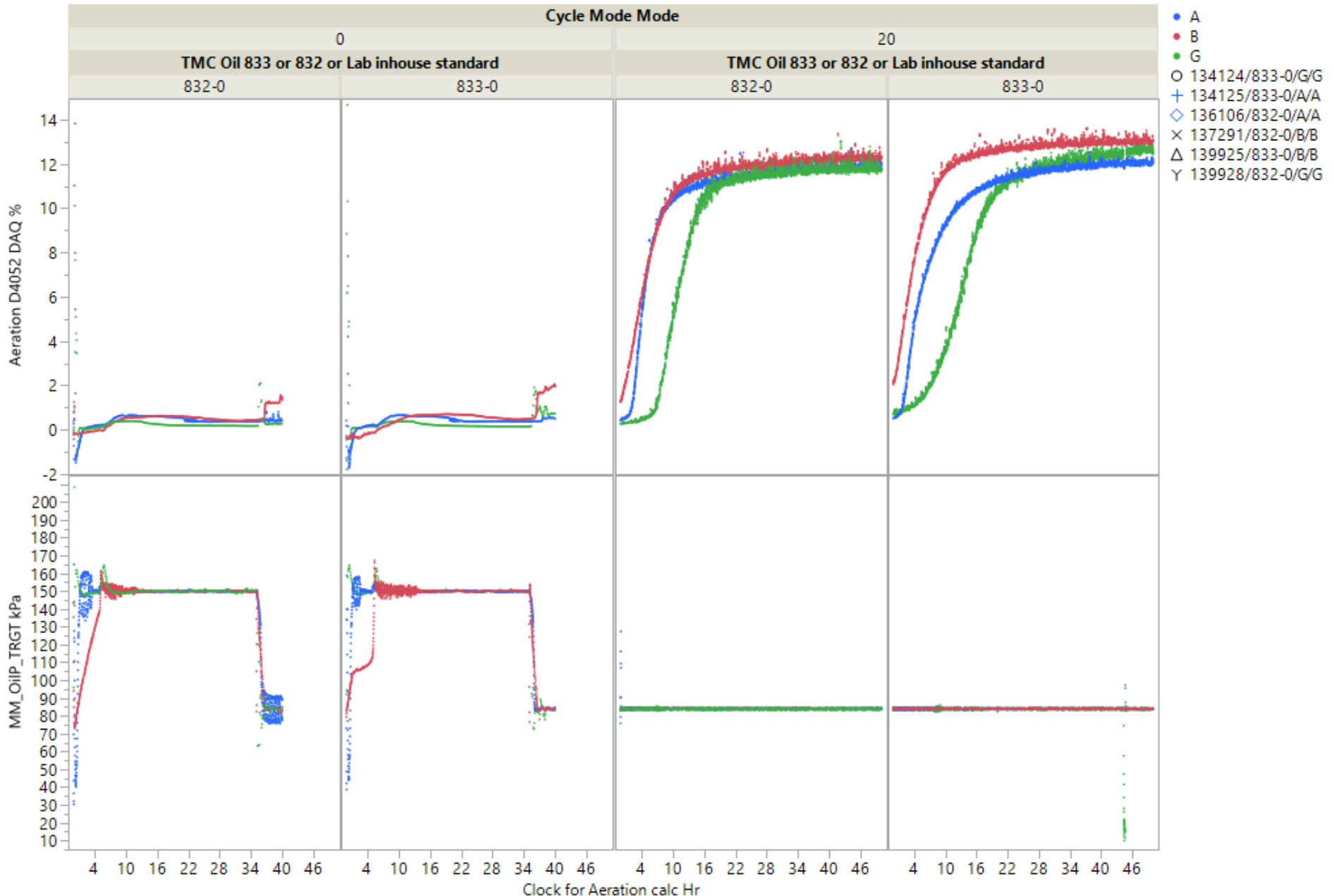
## Aeration D4052 DAQ % & T15\_Exhaust Out TCC vs. Clock for Aeration calc Hr



# Aeration D4052 DAQ % & MM\_OiIT\_TRGT C vs. Clock for Aeration calc Hr

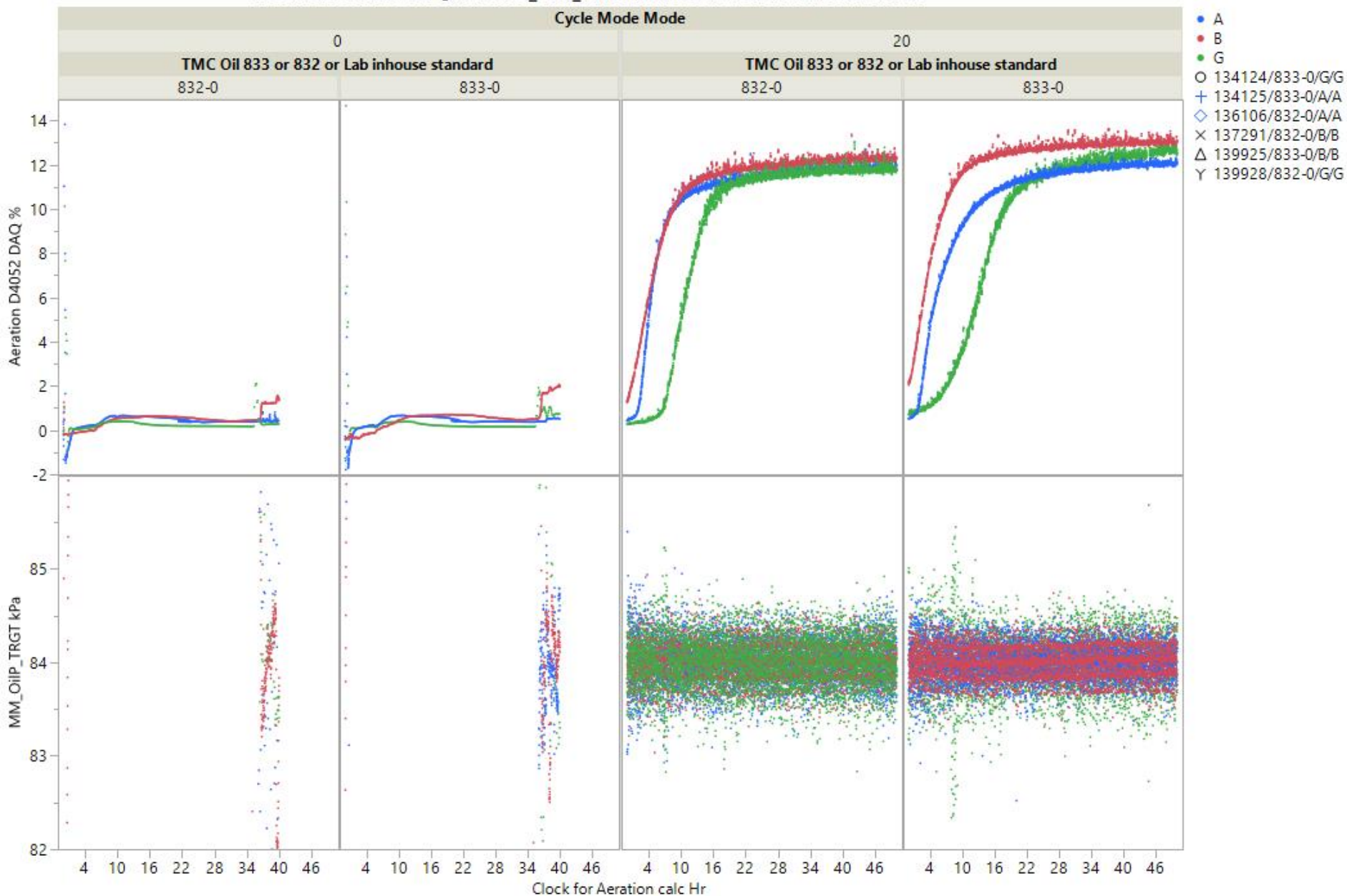


# Aeration D4052 DAQ % & MM\_OiIP\_TRGT kPa vs. Clock for Aeration calc Hr

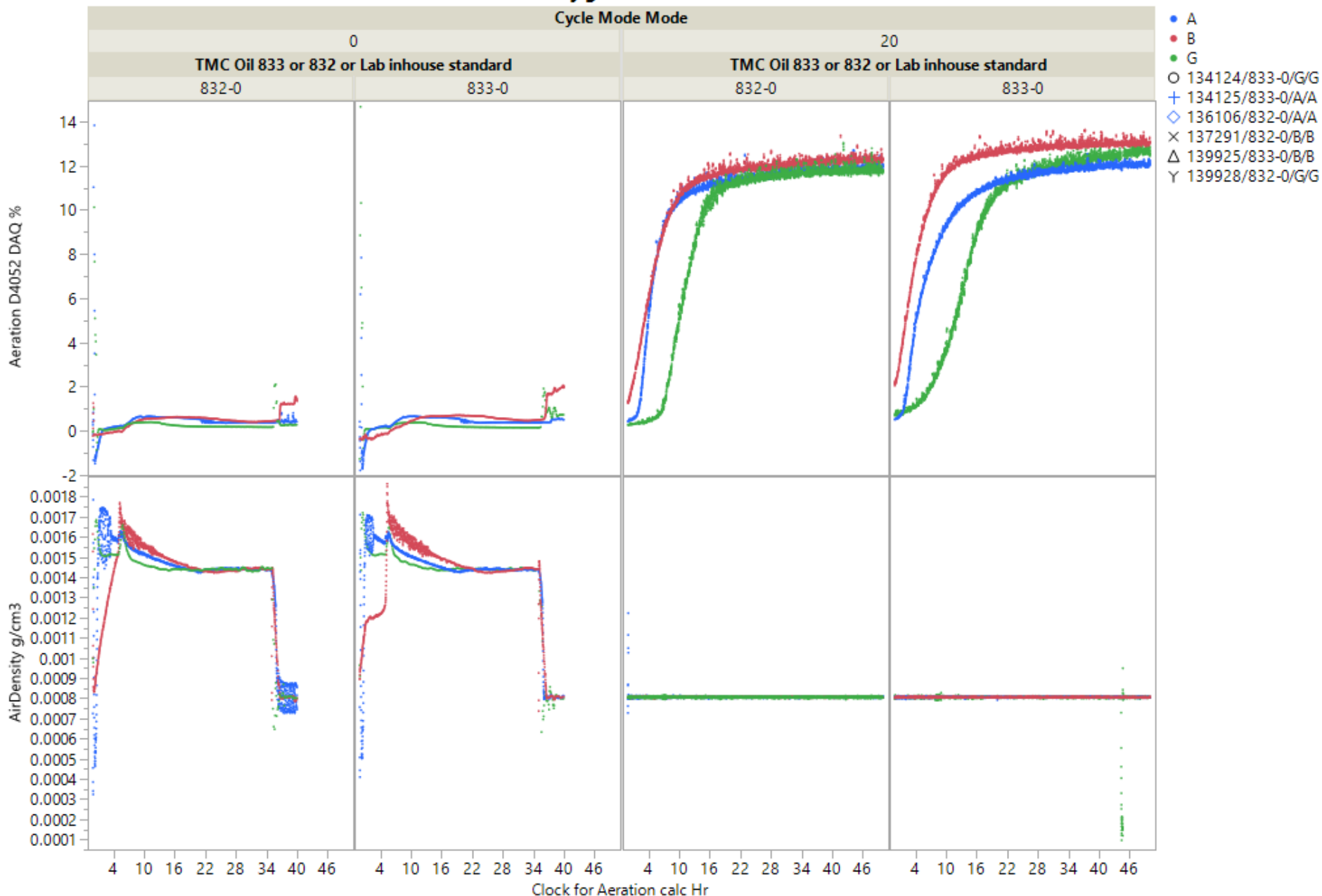


# Zooming in

## Aeration D4052 DAQ % & MM\_OilP\_TRGT kPa vs. Clock for Aeration calc Hr



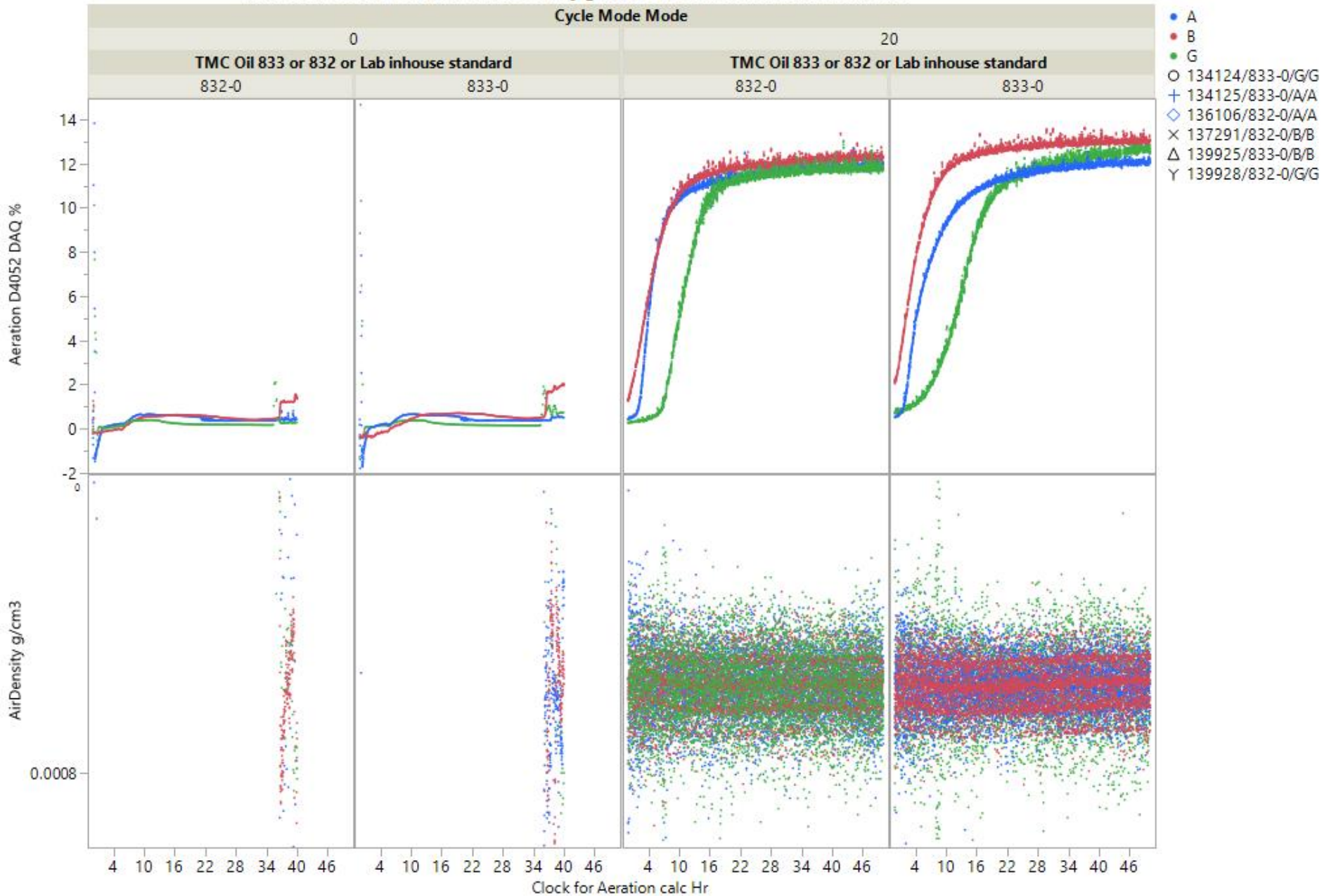
# Aeration D4052 DAQ % & AirDensity g/cm3 vs. Clock for Aeration calc Hr





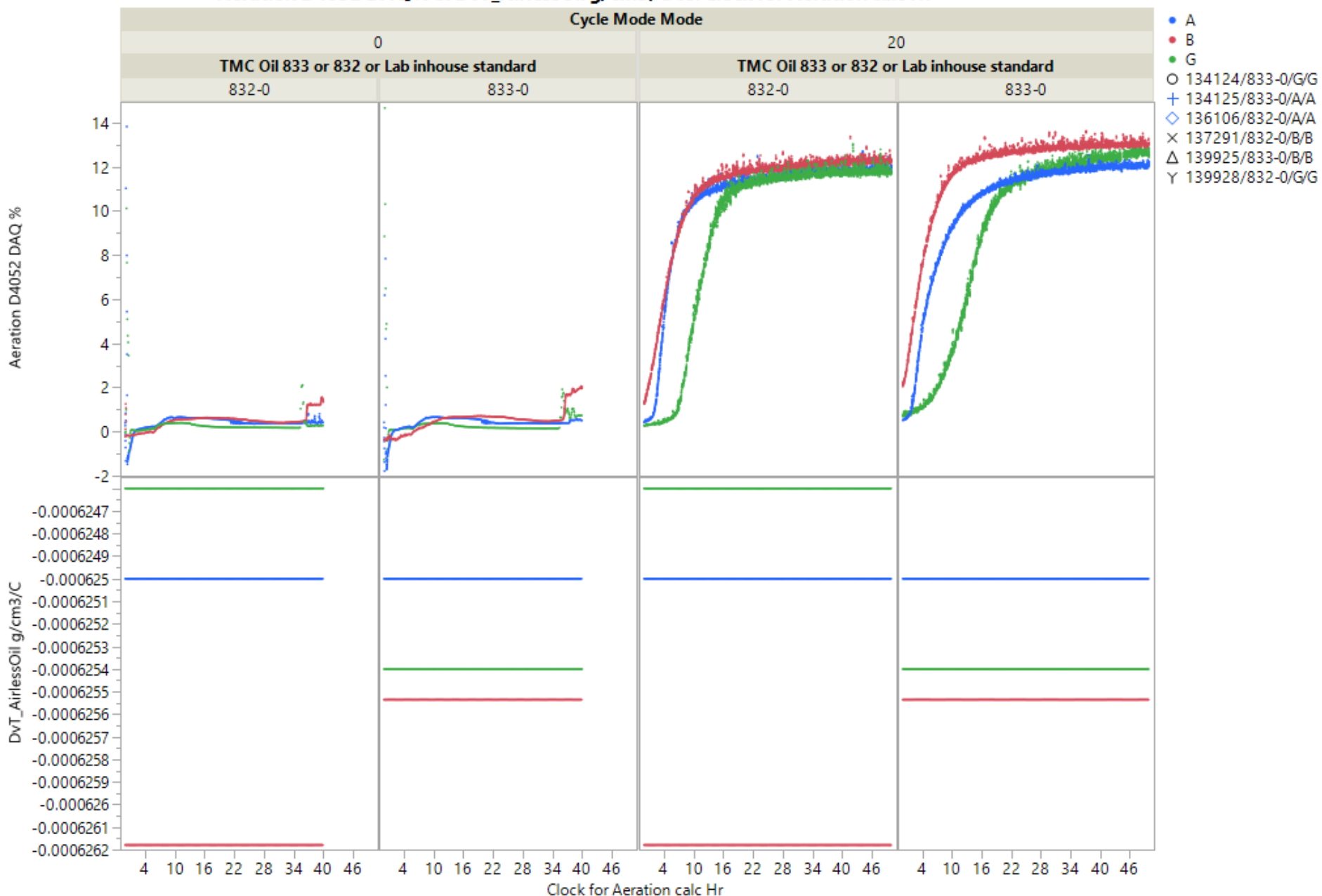
# Zooming in

## Aeration D4052 DAQ % & AirDensity g/cm3 vs. Clock for Aeration calc Hr





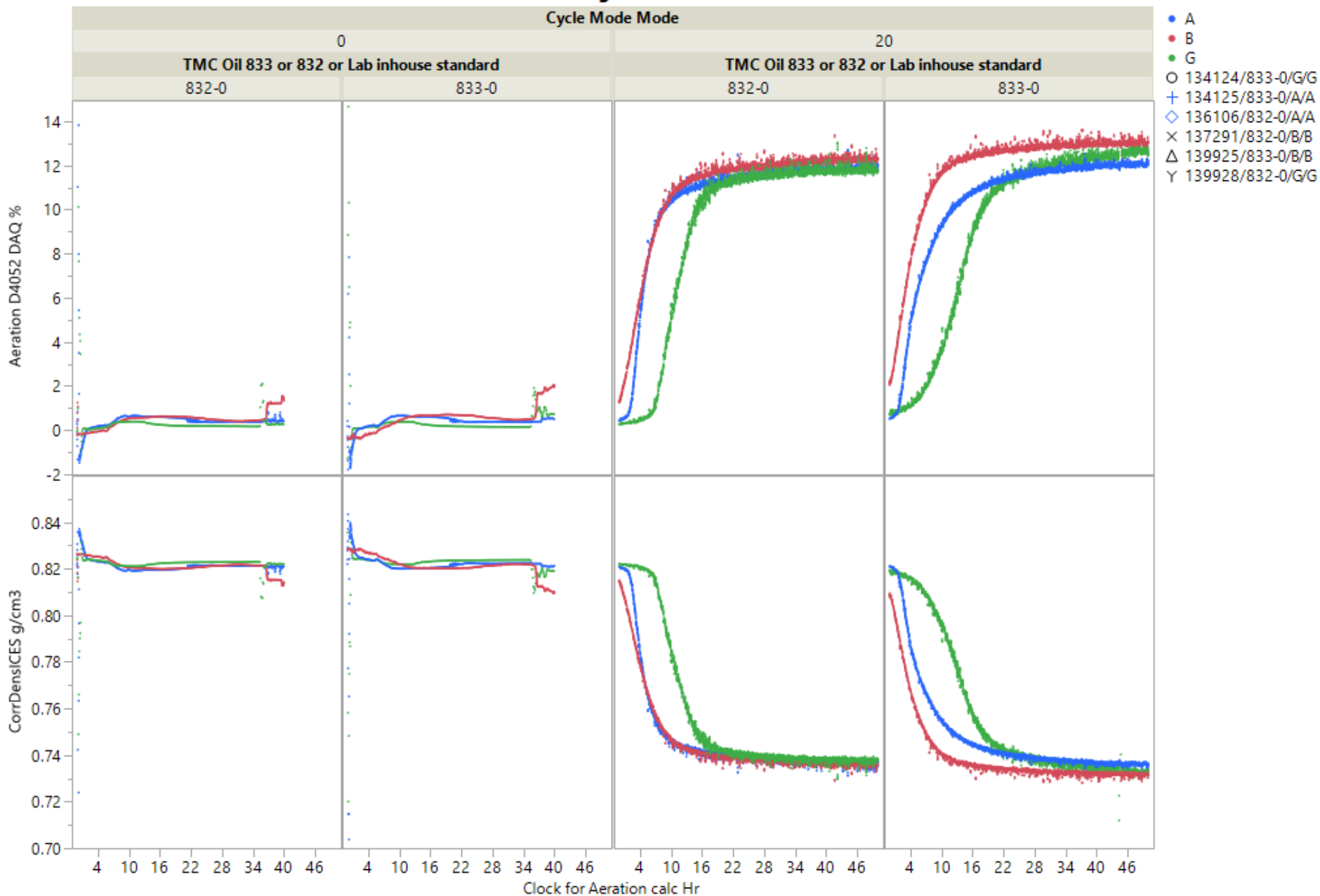
# Aeration D4052 DAQ % & DvT\_AirlessOil g/cm3/C vs. Clock for Aeration calc Hr



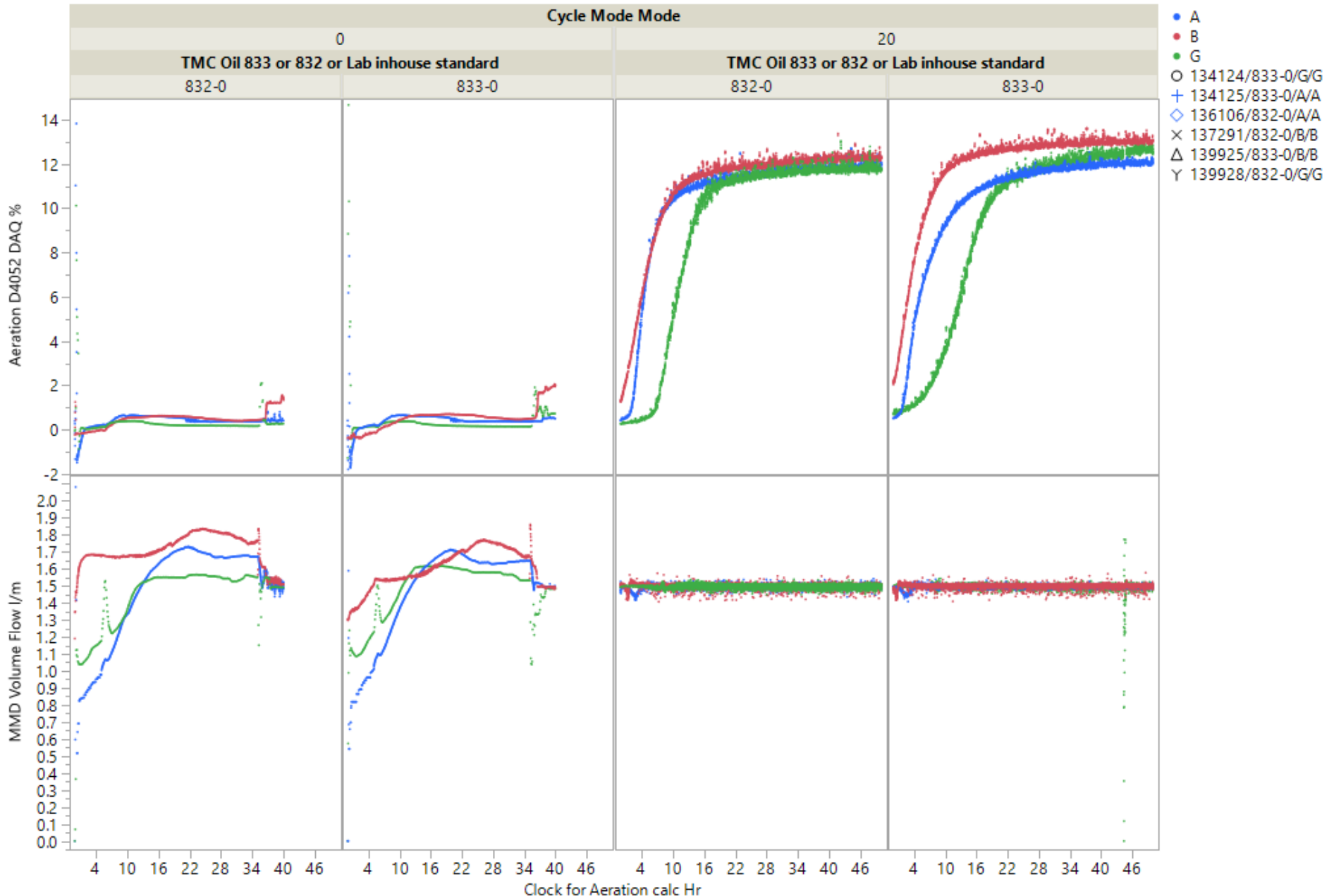
- A
- B
- G
- 134124/833-0/G/G
- + 134125/833-0/A/A
- ◇ 136106/832-0/A/A
- × 137291/832-0/B/B
- △ 139925/833-0/B/B
- Υ 139928/832-0/G/G

# Zooming in

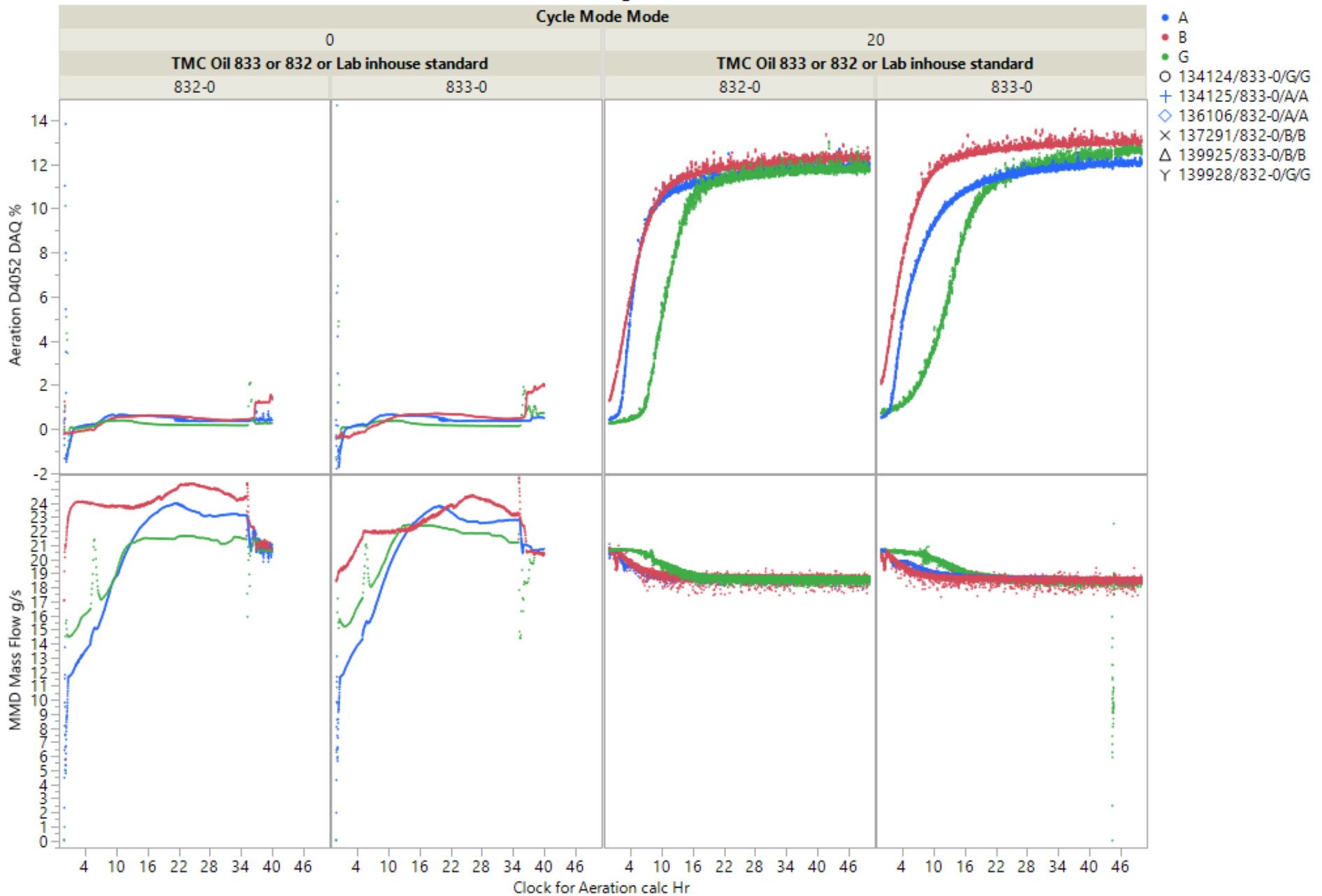
## Aeration D4052 DAQ % & CorrDensICES g/cm3 vs. Clock for Aeration calc Hr



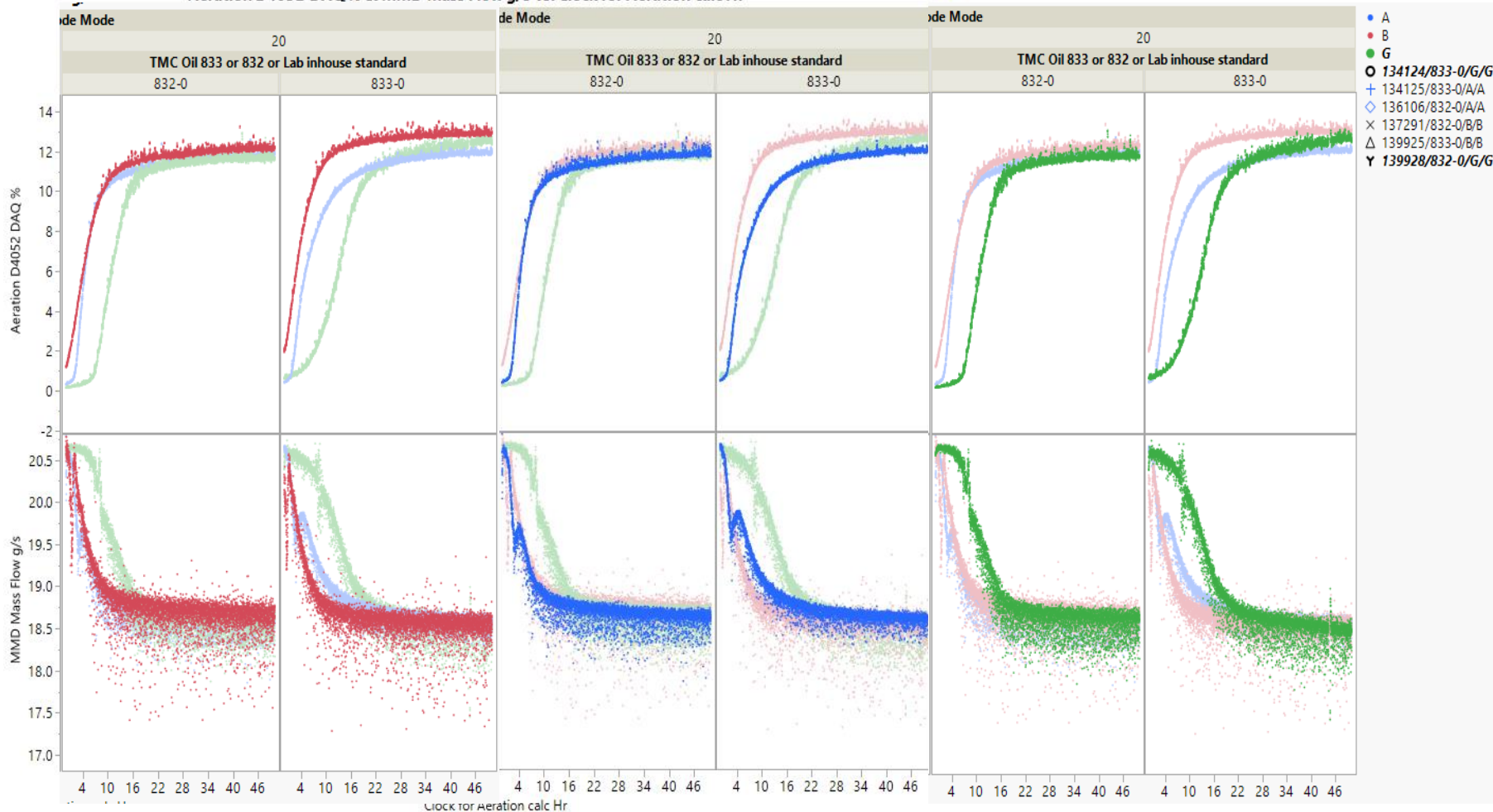
# Aeration D4052 DAQ % & MMD Volume Flow l/m vs. Clock for Aeration calc Hr



# Aeration D4052 DAQ % & MMD Mass Flow g/s vs. Clock for Aeration calc Hr

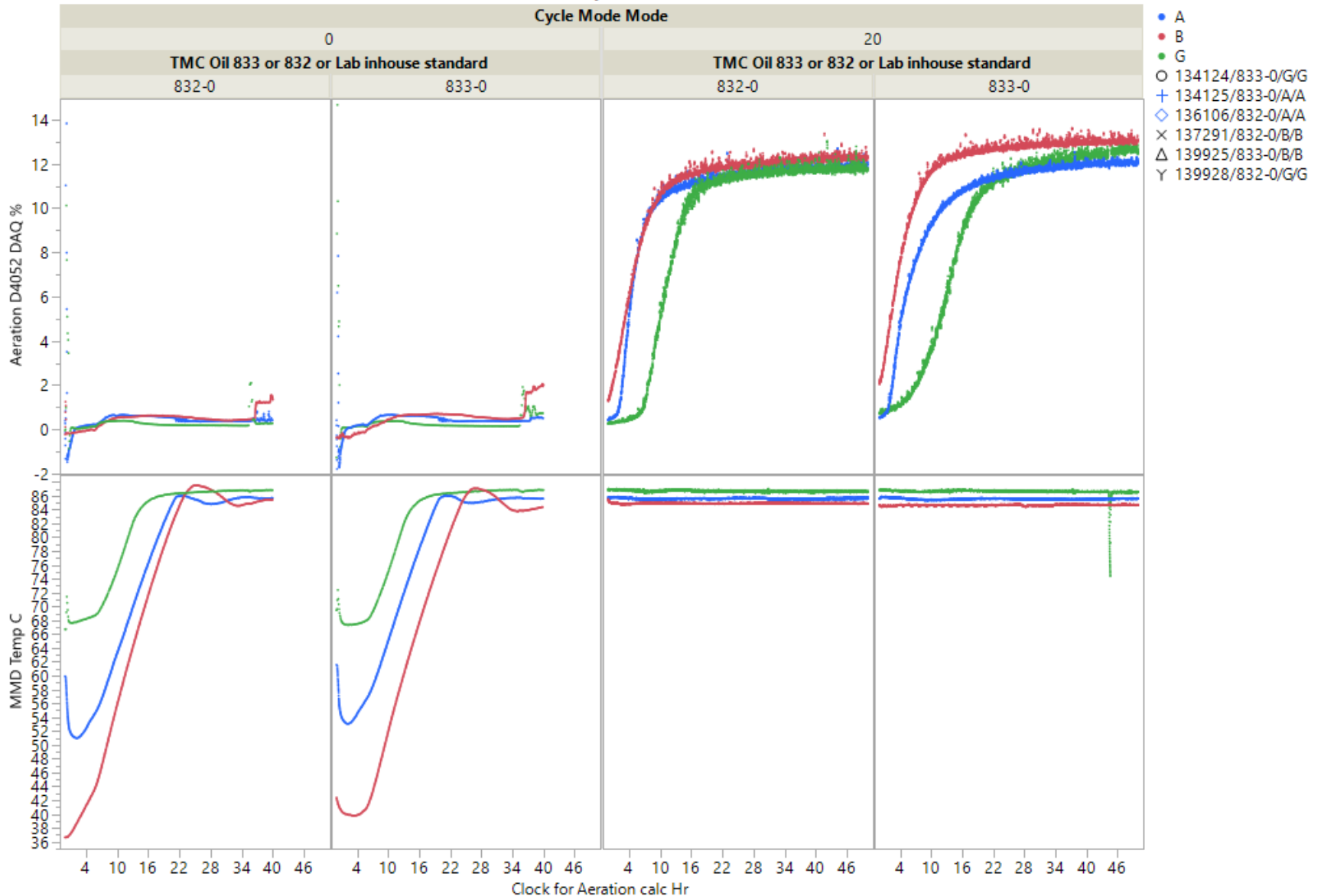


Aeration D4052 DAQ % & MMD Mass Flow g/s vs. Clock for Aeration calc Hr



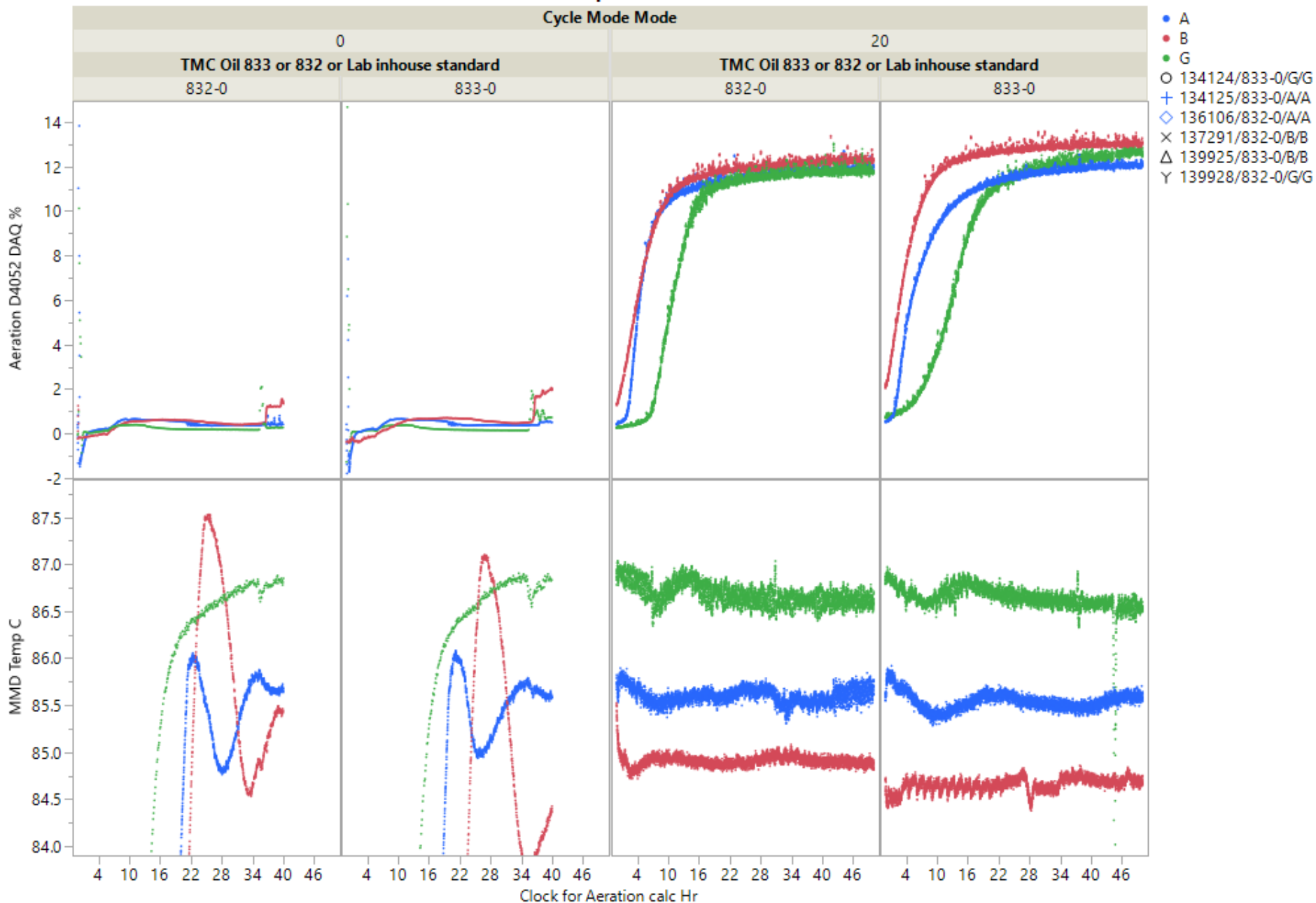


### Aeration D4052 DAQ % & MMD Temp C vs. Clock for Aeration calc Hr



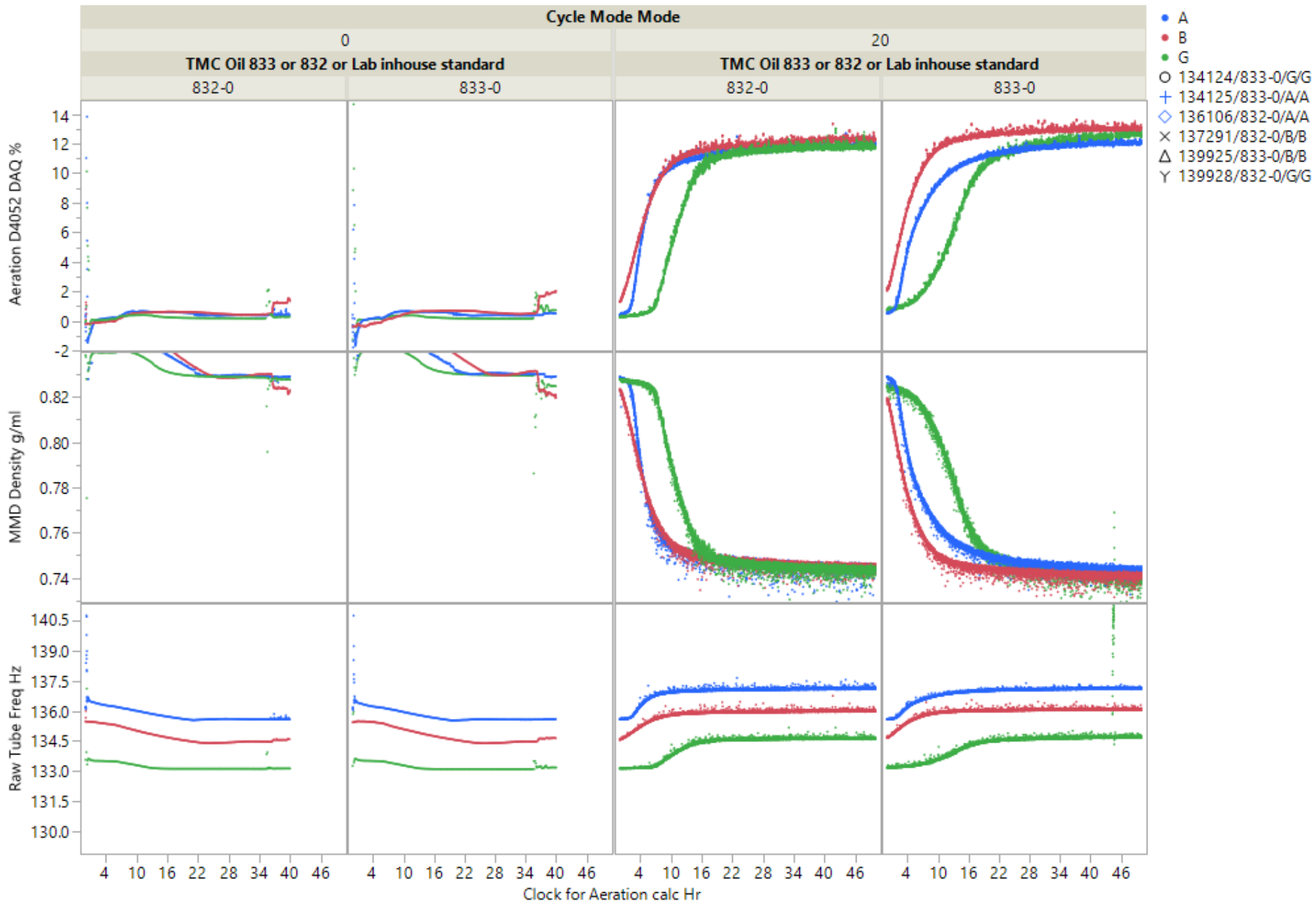
# Zooming in

## Aeration D4052 DAQ % & MMD Temp C vs. Clock for Aeration calc Hr

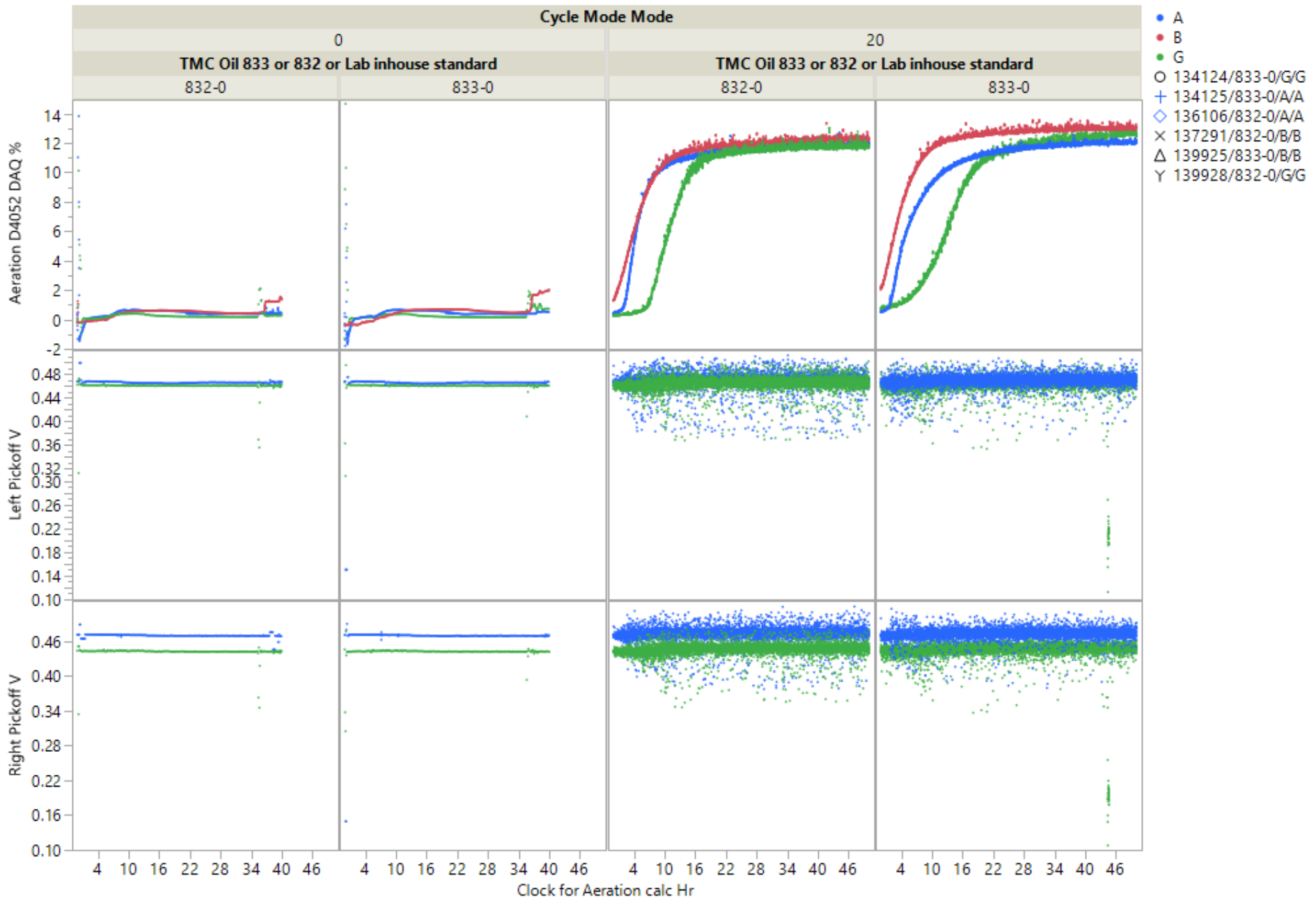


# Zooming in

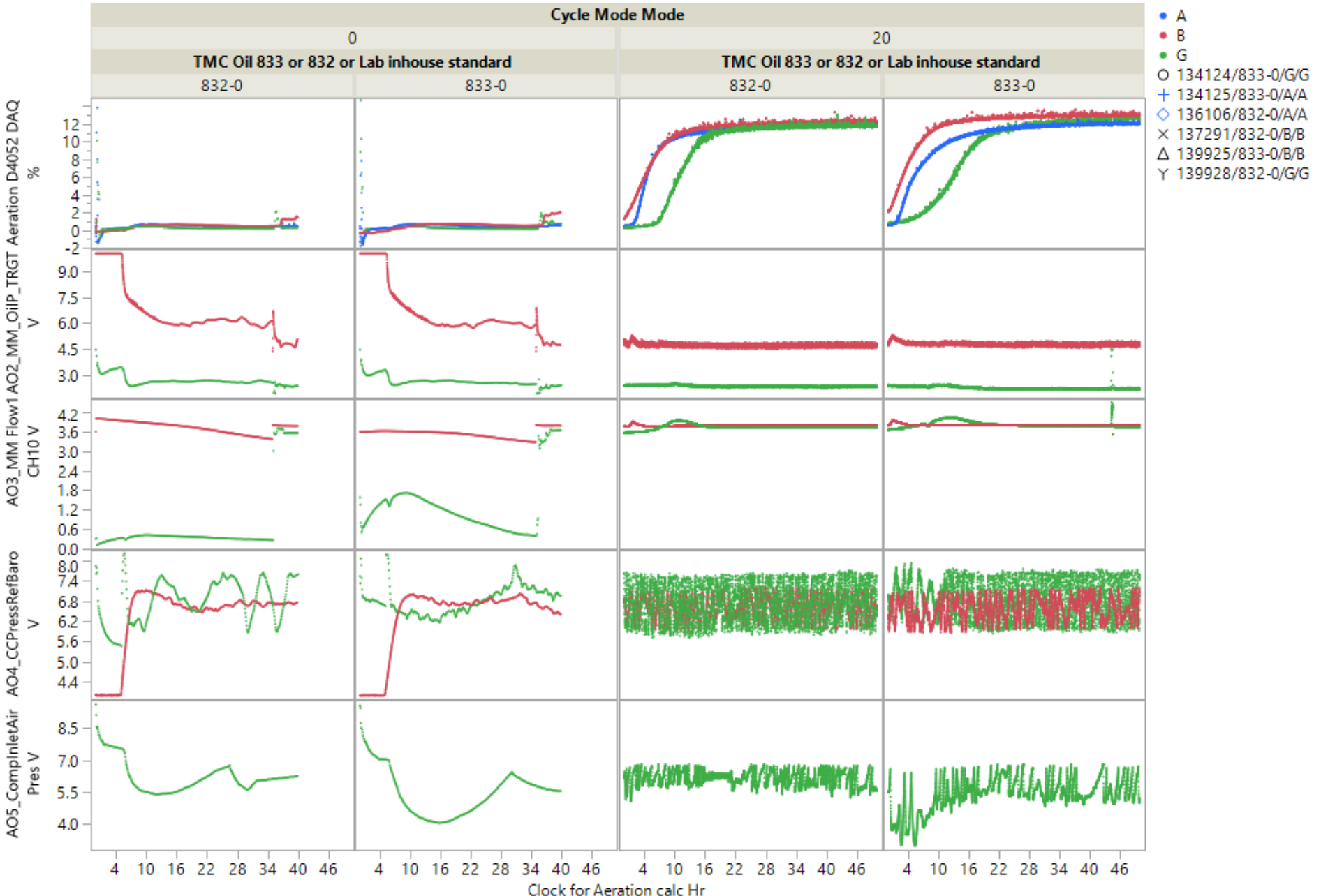
## Aeration D4052 DAQ % & 2 more vs. Clock for Aeration calc Hr



# Aeration D4052 DAQ % & 2 more vs. Clock for Aeration calc Hr

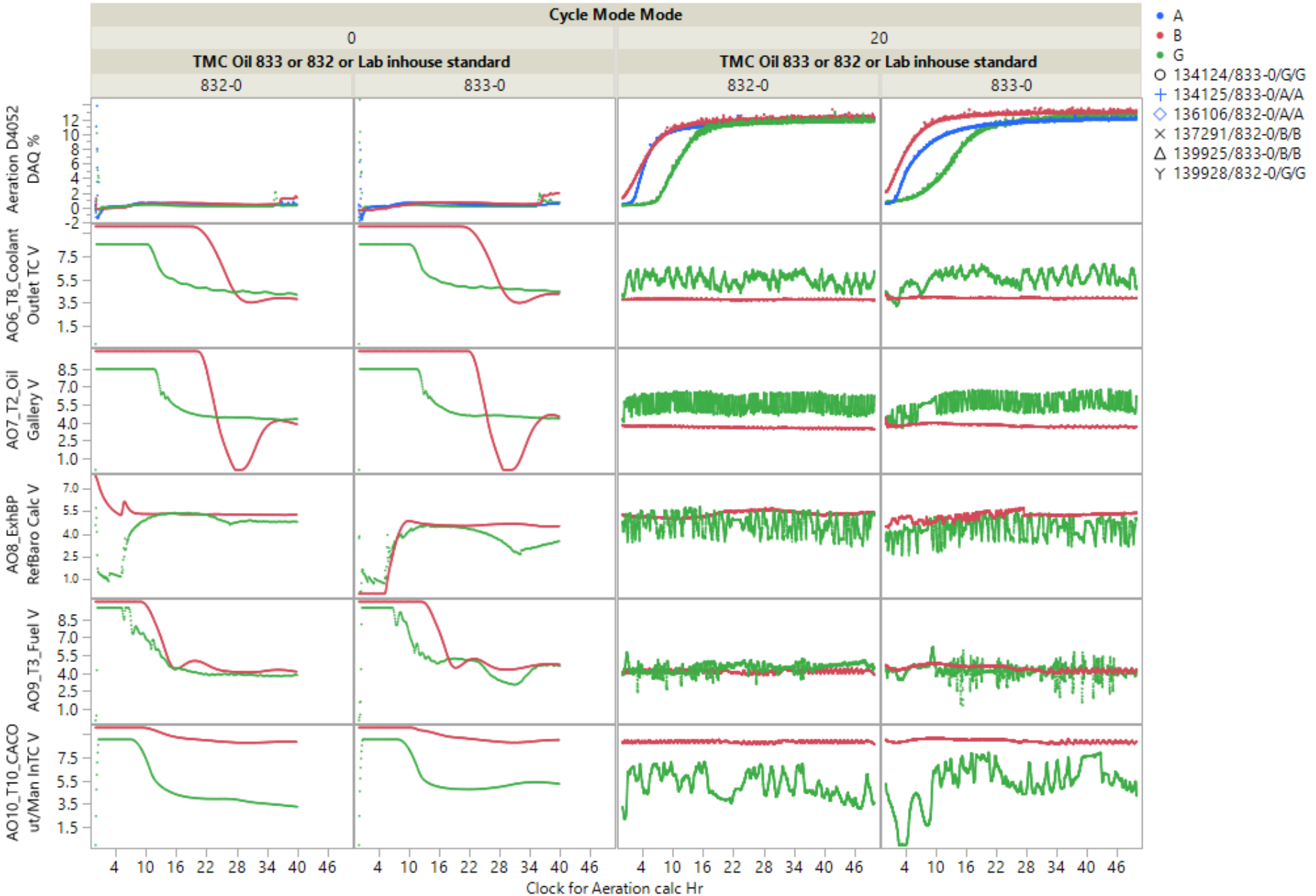


# Aeration D4052 DAQ % & 4 more vs. Clock for Aeration calc Hr

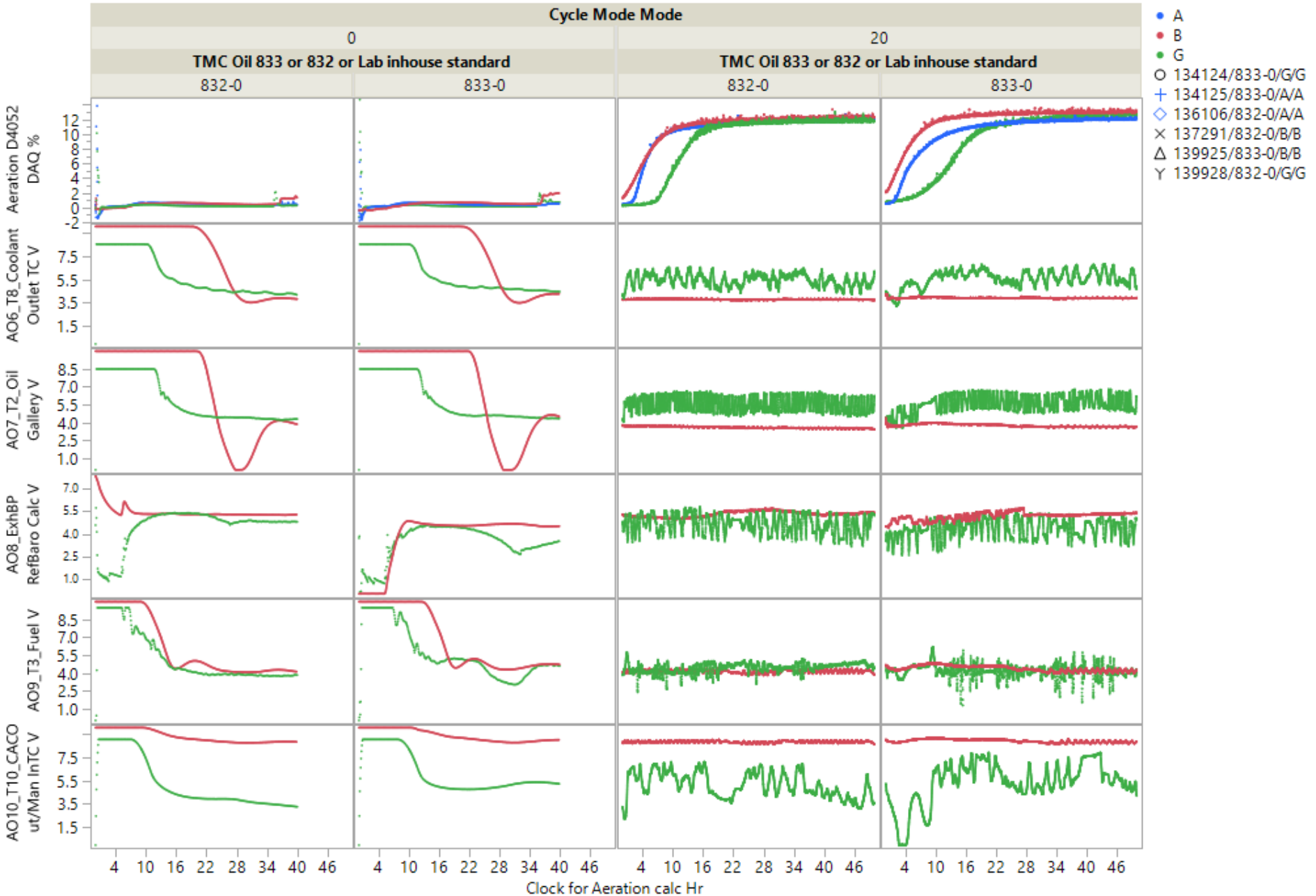




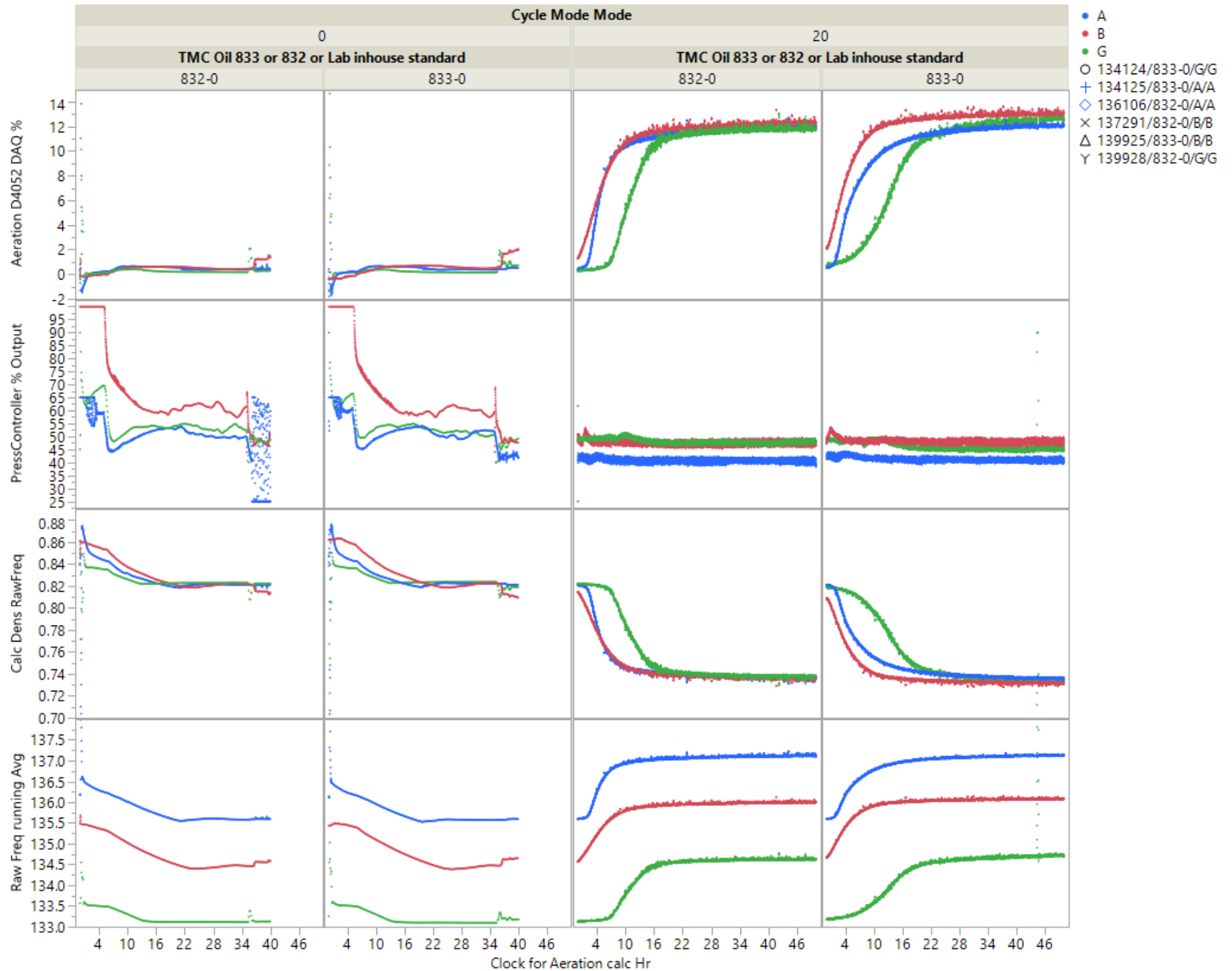
# Aeration D4052 DAQ % & 5 more vs. Clock for Aeration calc Hr



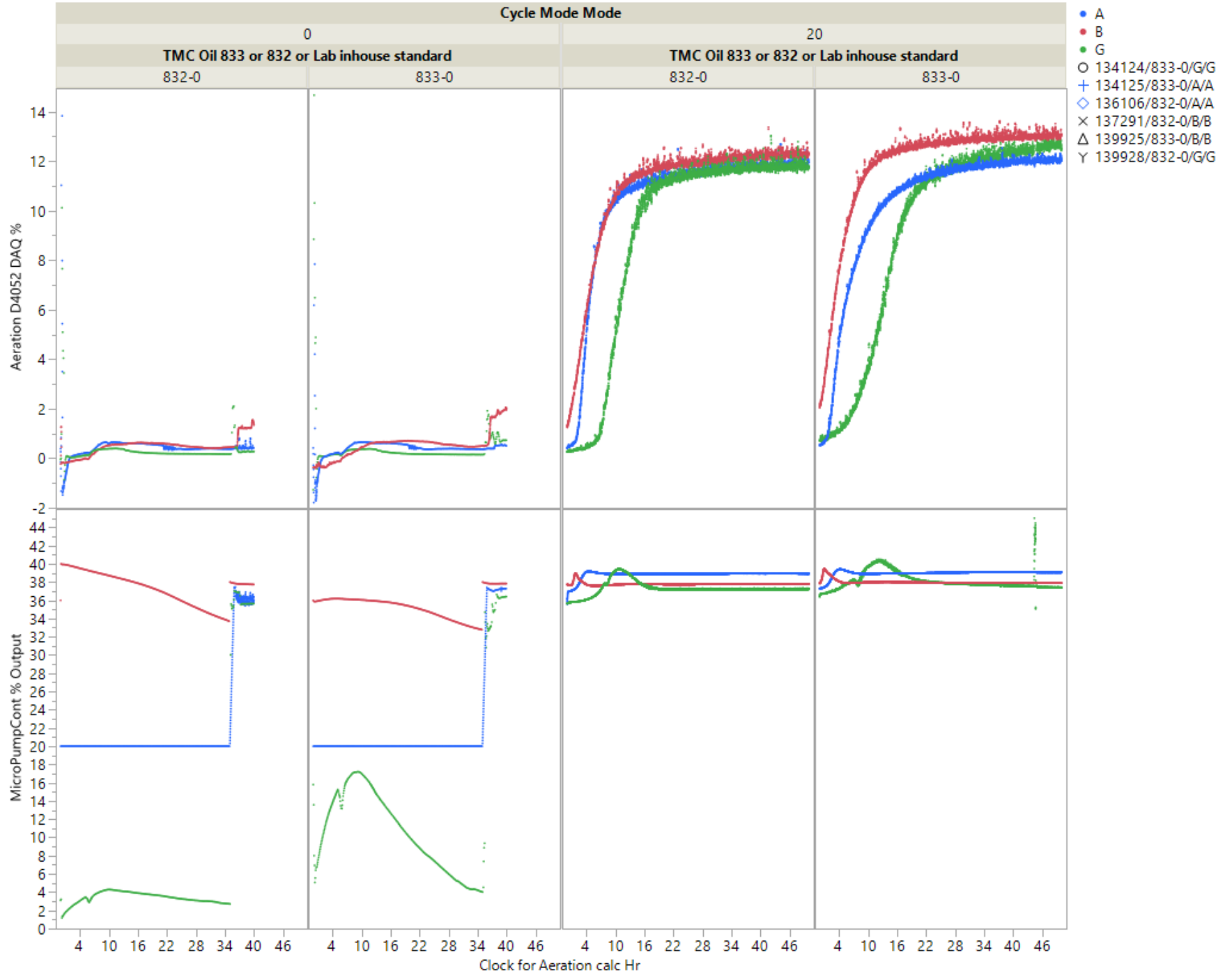
# Aeration D4052 DAQ % & 5 more vs. Clock for Aeration calc Hr



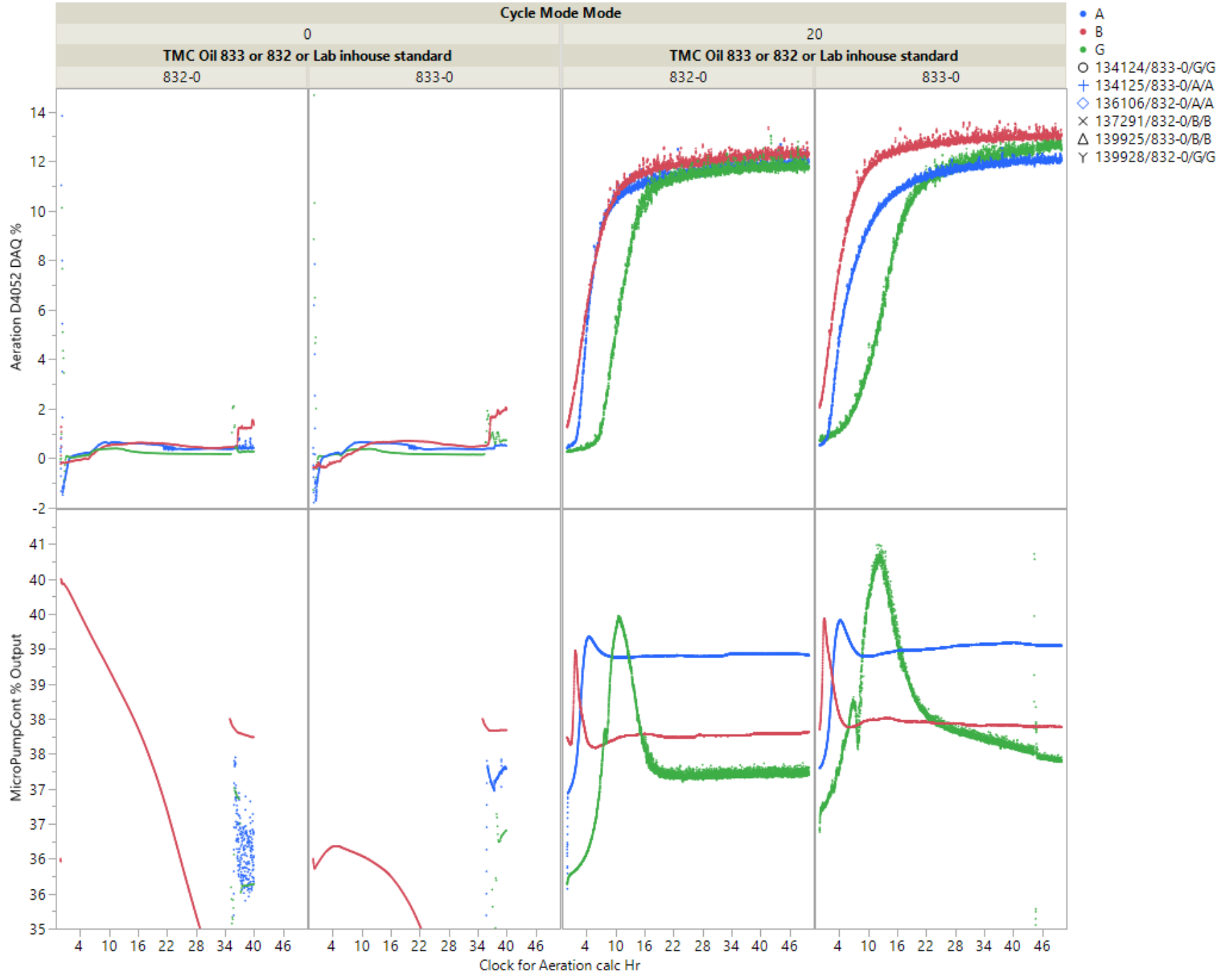
# Aeration D4052 DAQ % & 3 more vs. Clock for Aeration calc Hr



# Aeration D4052 DAQ % & MicroPumpCont % Output vs. Clock for Aeration calc Hr



# Aeration D4052 DAQ % & MicroPumpCont % Output vs. Clock for Aeration calc Hr





# Aeration D4052 DAQ % & 2 more vs. Clock for Aeration calc Hr

