AQ2 Quick Guide (v 2.4.3)

Instrument Warmup:
1. Turn on the machine: flip small switch first and then large switch
2. Check fluid levels (reagents, cleaning solution, calibration diluent, and deionized water)
3. Place reagent bottles into associated positions (as defined in a reagent set used) after refilling or replacing reagents as necessary. In the case of measuring o-phosphate using EPA 118-A, place the cuvette cleaning solution in 1, working phosphorus color reagent in 2, working ascorbic acid (with o-phosphate spike) in 3, calibration diluent in 14, and deionized water in 15 (see Item 18 below for details).
4. Refill or replace external DI water reservoir, empty the large waste bottle (can go down drain), and empty the hazardous waste jar

Daily Startup:
5. Launch and log in to the AQ software on the desktop
6. Go to the Maintenance and Setup and select Daily Startup, click Continue to initiate some processes which flush the cuvette with fresh DI water, prime the glass body of syringe with fresh DI water, and perform water baselines. Note that the voltages of all seven filters must fall within the range of 3.5 to 9.5 Volts. The highest energy filter should be approximately 8.9 V. The Dark Current must be in the range of 0.0030 to 0.0040 and typically reads 0.0030.

Scheduling a Tray:
7. Click the Scheduling icon on left side of the screen
8. The first free tray number is automatically selected for you
9. A reagent set (e.g., 1) should also be selected
10. A unique name will be automatically assigned to your test
11. Write the tray name down and click OK. Previously, you are required to leave the first row empty if you place your standard solution in Cup 1, which is the highest concentration (e.g., 1 mg P/L) among the calibration working standards. But this is no longer required with the upgraded software because you can place your standard solution in the reagent compartment (See Item 18 below). Note that if you use the auto-standardize method, no sample in your tray should have a sample type of standard (S*).
12. Fill in Sample ID's (and associated test names) according to your sample cup locations in the tray first and then insert Duplicate and SPKA as needed. Note that your cup number may need to be updated accordingly.

Running a Tray:
13. Double-click the Run icon or click the New icon in the main toolbar if already on the Run screen to select and run your sample tray. Make sure 1) that the tube counter should be set to zero if all the reaction segments have been replaced 2) that the box of Auto Standardize (auto-calibration) should be ticked if you ask the instrument to generate a calibration curve automatically.

Data Review:
14. After test is complete, click Data Review to accept or discard your testing results.

Calibration Review:
15. Click Calibration to check and compare with prior working curves stored in the desktop.

Prepare for Shutdown:
16. Wash cuvette by clicking *Extra Wash*, remove identified segments and zero, and remove corresponding segment trays

**Turn Machine Off:**

17. Flip large switch first, flip small switch, clean up your workspace, empty your sample tray, move any unused reaction segment trays back to Tupperware container, and move reagent bottles to refrigerator.

18. For quality control purposes, we can put all the samples in the sample tray and others in the reagent compartment as follows:
   - a. Wedge #1: Cuvette cleaning solution
   - b. Wedge #2: Working color reagent
   - c. Wedge #3: Working ascorbic acid (spiked)
   - d. Wedge #10: LCS – laboratory certified standards, a third-party reference material
   - e. Wedge #11: Spiking stock solution, which should be 5-10 times more concentrated than the top standard of your calibration curve
   - f. Wedge #12: CCV - continuing calibration verification, which has the same source as your calibration standard (highest concentration, e.g., 1 mg P/L)
   - g. Wedge #13: ICV – initial calibration verification, a second source standard used to verify the calibration curve
   - h. Wedge #14: CCB – continuing calibration blank
   - i. Wedge #15: DI Water

19. Regarding your access accounts:
   - a. Log in Windows 10 using your CSUID and Password
   - b. Launch the AQ2 software by click the Seal ion on the desktop
   - c. Your *Log In Name* should be the first letter of your first name followed immediately by your full last name, e.g., bdalton for Brittany Dalton and kallen for Kevin Allen
   - d. Your password is the same as your *Log In Name* for the first time. But the system asks you enter your new password and retype your new password to confirm.

20. You can view the full AQ software manual @ C:/AQ/AQ Software.PDF. Also, I have a hardcopy of the software manual in my office.

21. Your testing data on the old Windows XP machine will be transferred to C:/AQ_Pre19 folder soon … [fy]