DRAFT SOP O3 QC Routine Zero and One-Point Checks

Cautions: Open the valve first then close the other valve.

1. Make sure the calibrator unit is warmed up, and set it at 200 ppb to ensure the ozone generator is warmed up by running it for at least 60 minutes prior to the check.
2. Make a logbook entry:
   1. Log your name, date and time, and what it is that you're doing. (In this case a routine zero and 1-point QC check (this 1-pt check used to be called a span check).
   2. Note the start time of the QC check. (Use pen and if you change values cross out with one line only, and take more notes than you think you need.)
3. Set the calibrator to zero, after you have let it warm up for at least 15 minutes, and making sure the pump is running by taking off the top and looking to see if you see the little bars. Be careful!
4. Open valve to calibrator.
5. Close valve to vent. At this point the analyzer is off-line (it is now getting incoming air from the calibrator, rather than from outside).
6. Wait until the zero stabilizes on the calibrator. It will likely be not exactly 0. Watch the analyzer response, and wait until it stabilizes around zero. Note both results, the output of the calibrator, and what the analyzer reads, in your logbook, along with any notes. (EPA likes to see several values at each concentration, so you might make 3 rows at each ppb level with values very close to each other but this proves and records the proof that the unit has stabilized.)
7. Set the calibrator to 400 ppb.
8. Wait until it stabilizes right around 400. This should take probably about 10 minutes. This time should be allowed to elapse between every change in the set point of the calibrator. Note at least 3 values for the calibrator output ppb and the analyzer reading ppb, even if they are very close or the same values. (This would be 3 rows in the table in your logbook.)
9. Change the calibrator to 100 for the single point QC check. Let the unit stabilize and again take at least 3 values for the calibrator and the analyzer.
10. Set calibrator at zero. Let the unit stabilize and again take at least 3 values for the calibrator and the analyzer.
11. After the verification passes, change the filter. To ensure that there is nothing in the filter that would react with ozone, change the calibrator to 1000 ppb and send ozone through the new filter.
12. Wait until the analyzer also reads 1000. This should have conditioned the filter.
13. Now change the calibrator back to zero. Wait for the analyzer to show zero or as close to zero as it stabilizes. Record all these values in your logbook, with notes.
14. Now go to standby on the calibrator, using the standby button.
15. After the unit quiets down, turn it off.
16. Change the valves to the normal operating condition. (Open, and then close.)
17. Note the stop time of QC check in the logbook.