

FIELD INSTRUCTIONS ***FOR*** ***CONDUCTING AN OZONE AUDIT***

Notice: Audit is to be conducted at the site without any special or unscheduled adjustments or calibrations to the instrument being audited.

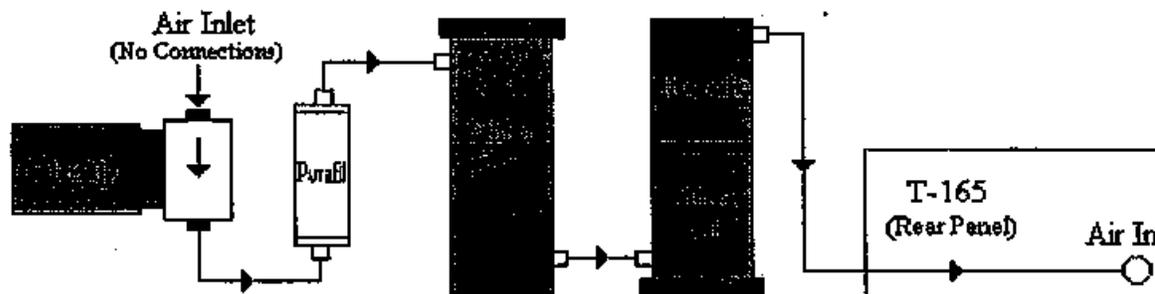
I. Operating Principle

The audit device consists of a zero air supply and ozone generation system. A constant flow is maintained in its current-controlled, ozone generator (a mercury lamp) by a limiting orifice. The ozone concentration is regulated using the 10-turn potentiometer and pressure gauge on the device. The mercury lamp itself is housed in a sealed, Teflon-coated aluminum chamber that maintains a constant temperature of 50°C when the power is on.

DO NOT ADJUST OR CHANGE ANY OF THE INTERNAL PARTS OF THE AUDIT DEVICE. Doing so could cause you to have unacceptable audit results.

II. Audit Procedure

1. Assemble the zero air supply according to the diagram below, and connect its outlet tubing to the port marked "air in" on the rear of the audit device.



Zero Air System

2. Plug the audit device into a stable 110 volt AC outlet near the ozone monitor to be audited and turn the power switch to the **ON** position.

3. Warm-up the instrument for 15 minutes to assure that the lamp housing has reached 50°C. (the heater light will come on when this temperature has been attained).

4. After the 15 minute warm-up is completed, plug the pump power cord into a 110 volt AC outlet. If the pump has a power switch, turn the switch **ON** at this time.

5. Using the pressure control knob, set the pressure gauge by reducing the pressure to below 6 psig, and then adjusting it back up to 6 psig. **DO NOT** tap the gauge. After 5 minutes, recheck the gauge setting. If it has shifted, reset it to 6 psig. Check the pressure prior to each audit point and reset to 6 psig if necessary.

6. Connect the "sample inlet" of the monitor being audited to the fitting labeled "ozone" on the audit device, using the supplied Teflon tubing.

NOTE: It will not be necessary to use an external manifold since the calibrator is already vented to atmosphere.

7. Check that the ozone lamp switch is in the **OFF** position. With the pump on, allow the monitor to sample zero air from the audit device for approximately 10 minutes. Record the zero reading on the data sheet.

8. Record the barometric pressure (in mm of Hg) and the temperature (in degrees celsius) at the site, on the data sheet.

9. To assure proper lamp "firing", put the ozone lamp switch in the **ON** position and set the potentiometer to the full clockwise position (#10 on the dial) for approximately 30 seconds.

10. Set the potentiometer to the value specified for Point 1 on the data sheet. Allow sufficient time for the monitor to stabilize and record the monitor reading in **ppb** on the data sheet. (Note: Time required for stabilization of this first point may take 30 to 45 minutes.)

11. Repeat Step 10 for the other potentiometer settings specified on the data sheet. (NOTE: Stabilization time for these points is usually 5 to 10 minutes.)

12. Turn the ozone lamp switch to the **OFF** position.

13. Turn off the pump and audit device and disconnect them from the 110 volt AC outlet.
14. Repack the equipment in the shipping container and use the enclosed label to return it to us. There will be a special sheet in the instructions to advise you on the return shipping requirements.
15. Return the data and survey form in the enclosed envelope. DO NOT RETURN IT IN THE SHIPPING CASE WITH THE AUDIT DEVICE.

NOTE:

WE DO NOT MAKE ANY CORRECTIONS TO YOUR AUDIT RESULTS WHEN WE PERFORM OUR LINEAR REGRESSION. IF YOU ROUTINELY MAKE ANY CORRECTIONS TO YOUR DATA BASED ON ZERO DRIFT OR ZERO OFFSET, YOU MUST MAKE THESE CORRECTIONS BEFORE SENDING YOUR AUDIT RESULTS TO US.

CONVERSION FACTORS:

1. mm Hg = inches of Hg x 25.4

or

millibars of Hg x .75006

2. $^{\circ}\text{C} = \frac{^{\circ}\text{F} - 32}{1.8}$

3. ppb = PPM x 1000

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