SERIES 6100 OZONE CALIBRATION

PREPARATION OF SYSTEM

1. The system should be on for at least 30 minutes before beginning.

- Connect zero air to Port 1 of the instrument.
- Connect the output of the instrument to the sample inlet of the ozone analyzer through a vented manifold. A chart recorder is also used, and at the start of each segment, list the following, lamp test, lamp adjustment, ozone calibration and ozone verification.

LAMP ADJUSTMENTS

1. To verify the span, go to the CALIBRATE OZONE screen, set the total flow for the correct flow (5000 cc unless otherwise specified). Ozone flow will be 500 cc unless otherwise specified. Maximum ozone ppm will be as noted unless a new range of ozone or total flow is being calibrated. In this case, contact Environics for a calculated value.

2. Press ENTER for the next screen; arrow down to last non-zero set point value (typically 0.5ppm or 1.0ppm) and press START to generate ozone. Verify that the ozone is between 104-110% of the requested value i.e. a request of .50 ppm should be between approximately .52 and .55 ppm.

   SPAN ADJUSTMENT (if necessary): Adjustments are made on the PC410 board, This can be accomplished by removing the ozone generator cover and adjusting R35 gain potentiometer. After making the gain adjustment, be sure that the ozone generator zero offset has not changed significantly. Stop the ozone generator and measure the voltage at TP2 on the PC410. This voltage should be between .08 and 0.1 VDC. If it is not, adjust potentiometer R46 until it is within this range. Reinstall the ozone generator cover and recheck the same ozone point again. Repeat as needed to achieve the correct ozone level.

OZONE CALIBRATION

1. At this point a series of points need to be run in the CALIBRATE OZONE screen, starting with the highest concentration and working down in concentration to the minimum concentration. The points to be used are listed below except where specified. Data points must remain in ascending order in cal table as shown in examples below.

2. Examples:

For .5ppm Maximum

Set points	True
1 - .030	.028
2 - .100	.114
3 - .150	.170
4 - .225	.255
5 - .300	.339
6 - .400	.450
7 - .500	.543

For 1.0ppm Maximum

Set points	True
1 - .050	.037
2 - .125	.112
3 - .200	.186
4 - .300	.284
5 - .500	.478
6 - .600	.573
7 - .700	.731
8 - .850	.871
9 - 1.000	1.085

3. Allow the ozone concentration level to stabilize (approximately 10 minutes) before accepting the reading from the ozone analyzer. Record the ozone analyzer's reading by writing it onto the chart. Enter the reading from the ozone analyzer into the true column. Arrow up to the next value and press UPDATE (F1) to generate next concentration. Repeat for all calibration points.

4. Record the Ozone Pressure throughout this process.

5. Press STOP and make sure all the set and true values are inputted correctly. Press "EXIT" then "SAVE" to save the calibration. Press ENTER, arrow down 3 times to Cal Pressure, enter the ozone pressure recorded earlier (averaging the readings). Press ENTER again then EXIT (twice) to go to the READY mode.

   Select the PREF screen to check and make sure the O3 pressure correction is on before verification.

OZONE VERIFICATION

1. Select the flow mode and verify 3 points 100%, 50% and 10%, starting with the higher concentration level and working down to the minimum, using the same total flow rate as used in the calibration (5000 cc's unless otherwise specified). Allow the ozone concentration level to stabilize (approximately 10 minutes) before accepting the reading from the ozone analyzer. Repeat for all verification points. The specification for ozone verification is 10ppb. If any points are out of specification recalibrate ozone and re-verify.