Air Aware Field Guide: Testing Gas Appliance Emissions

Thank you for participating in the Air Aware testing initiative! This guide will walk you through collecting accurate indoor air quality data for gas appliances (like stoves).

Important Equipment Rule: To ensure sensor accuracy and avoid calibration errors, **test only one gas at a time** (e.g., test Carbon Monoxide (CO) first, then Nitrogen Dioxide (NO2) in a separate session).

Phase 1: Pre-Test Preparation (Baseline Setup)

1. Clear the Air (3-Hour Standby)

- Turn off all gas appliances in the space for at least 3 hours prior to testing (longer is fine, just log the exact time on your form).
- Avoid cooking, smoking, using gas appliances, or aerosol sprays during this period.

2. Device Startup

1. Turn on your monitor and allow it to warm up and stabilize in the space.
2. Position the monitor perpendicular to the gas appliance (for a stove, set it on a adjacent countertop at burner height, facing the appliance).
3. Do not turn on the appliance yet.

3. Record the Baseline

- Enter your initial readings into the web form.
- *Note:* If a value appears for CO or NO2 while the appliance is off, this indicates lingering background levels or baseline ambient air concentrations. Record this exact number.

faith in place

Air Aware Field Guide: Testing Gas Appliance Emissions

Phase 2: Active Appliance Testing

1. Set Up Your Normal Conditions

1. **Appliance Setting:** Turn on your two hottest stove burners and set your oven to 350°F to simulate real-world cooking.
2. **Ventilation Setting:** Set up your space to match your *normal* cooking habits (e.g., range hood on, windows open, or no ventilation at all). Record your ventilation setup in the web form.

2. Start the Timer

- Wait for the oven to fully preheat to 350°F.
- As soon as the oven reaches temperature, start your timer.

3. Log Data Intervals

Keep the burners and oven running and log the monitor values in your web form at the following checkpoints:

- **15-Minute Mark:** Record reading #1
- **30-Minute Mark:** Record reading #2

***(Optional:** If you want to collect extended data, continue recording at 15-minute intervals, such as 45 and 60 minutes).*

Quick Testing Tips: Other Gas Appliances

If you are testing appliances other than a gas stove/oven, follow these specific startup rules before taking your readings:

- **Gas Clothes Dryer:** Turn the dryer on and let it run for 5 minutes before taking your initial reading.

Air Aware Field Guide: Testing Gas Appliance Emissions

- **Gas Water Heater:** Turn on a nearby hot water faucet and let the hot water run for **5 minutes** to ensure the water heater burners trigger and run continuously before recording.
- **Furnace:** Begin monitoring continuously as soon as the heating cycle starts and record the final reading as soon as the cycle ends.
- **Gas Vents / Flues:** Monitor continuously throughout the heating cycle and take your final reading immediately when the cycle ends.

Phase 3: Post-Test & Testing a Second Gas

Once you complete the 30-minute reading, safely turn off all burners and the oven.

Testing a Second Gas (e.g., Switching from CO to NO2)

1. Turn off all gas appliances.
2. Open windows or doors to air out the room completely.
3. Let the space rest with appliances off for at least 3 hours.
4. Swap the sensor head on your device to the second gas.
5. Repeat Phases 1 through 2 from the beginning.

Quick Testing Checklist

- ☐ Gas appliances off for 3+ hours before starting
- ☐ Monitor placed perpendicular to appliance
- ☐ Baseline recorded while appliance is OFF
- ☐ Ventilation (for stoves) type logged on web form
- ☐ Timer started as soon as oven hits 350°F
- ☐ Readings recorded at 15 min & 30 min
- ☐ Room fully ventilated before swapping sensor heads
- ☐ Optional testing for gas dryer, furnace, gas water heater, heating vents

Air Aware Field Guide: Testing Gas Appliance Emissions

faith in place