UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

MAR 10 2005

OFFICE OF
AIR AND RADIATION

Mr. Forrest M. Mims III
Geronimo Creek Observatory
433 Twin Oak Road
Seguin, TX 78155

Re: EPA Information Quality Guidelines Request for Correction No. 04024

Dear Mr. Mims:

I am responding to your request for correction received on September 8, 2004, requesting correction of statements on the Environmental Protection Agency's (EPA) Web site addressing ozone and oxides of nitrogen (NOx). Following a thorough review, EPA's Office of Air & Radiation has addressed your concerns in its periodic review and update of its Web sites.

We have determined that the best way to meet the information needs of the general public regarding air quality matters is to prepare products such as Web sites with sufficient detail to facilitate understanding, but without extensive discussion of scientific underpinnings. EPA often designs its Web sites in a manner that allows the general public to be able to read about and understand basic air quality issues without attempting to address issues in an in-depth scientific manner. Nonetheless, disseminated information should be accurate, reliable, and unbiased. EPA has taken your suggestions into account in its review of the Web sites mentioned in your request, while bearing in mind our goal to present the information in a way that will be objective and also accessible to the general public.

I have enclosed copies of the modified pages. You may also view them at http://www.epa.gov/air/urbanair/ozone/what.html and http://www.epa.gov/air/urbanair/nox/what.html .

If you are dissatisfied with EPA's response, you may submit a Request for Reconsideration (RFR). EPA recommends that this request be submitted within 90 days of the date on this letter. To do so, submit a written request to the Agency's Information Quality Guidelines Processing Staff via email at quality@epa.gov or by mail at USEPA, 1200 Pennsylvania Ave. NW, Mail Code 2811R, Washington, DC 20460. The request for reconsideration should reference the request number assigned to the original request

for correction (RFC #04020). Additional information that should be included in the request is listed on the IQG Web site at http://www.epa.gov/quality/informationguidelines.

Sincerely,

Robert D. Brenner

Robert D. Brenner
Principal Deputy Assistant Administrator

Enclosures

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Six Common Air Pollutants Home

Ozone

Particulate Matter

Carbon Monoxide

Nitrogen Oxides

Sulfur Dioxide

Lead

Designations

# Ground-level Ozone: What is it? Where does it come from?

**Ozone** ($O_3$) is a gas composed of three oxygen atoms. It is not usually emitted directly into the air, but at ground level is created by a chemical reaction between oxides of nitrogen ($NO_x$) and volatile organic compounds (VOC) in the presence of sunlight. Ozone has the same chemical structure whether it occurs miles above the earth or at ground level and can be "good" or "bad," depending on its location in the atmosphere. "Good" ozone occurs naturally in the stratosphere approximately 10 to 30 miles above the earth's surface and forms a layer that protects life on earth from the sun's harmful rays. In the earth's lower atmosphere, ground-level ozone is considered "bad."

## VOC + NOx + Sunlight = Ozone

Motor vehicle exhaust and industrial emissions, gasoline vapors, and chemical solvents as well as natural sources emit $NO_x$ and VOC, that help to form ozone. Sunlight and hot weather cause ground-level ozone to form in harmful concentrations in the air. As a result, it is known as a summertime air pollutant. Many urban areas tend to have high levels of "bad" ozone, but even rural areas are also subject to increased ozone levels because wind carries ozone and pollutants that form it hundreds of miles away from their original sources.

| Opening page | Ground-level Ozone: What is it? Where does it come from? |
| Chief Causes for Concern | Health and Environmental Impacts of Ground-level Ozone |
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Last updated on Thursday, January 6th, 2005
URL: http://www.epa.gov/air/urbanair/ozone/what.html

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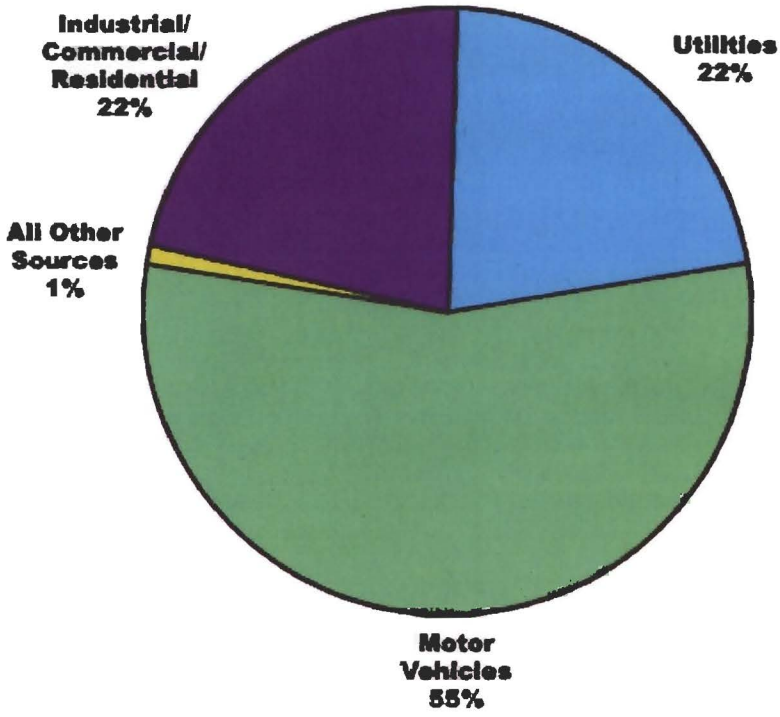
## NOx: What is it? Where does it come from?

**Nitrogen oxides,** or NOx, is the generic term for a group of highly reactive gases, all of which contain nitrogen and oxygen in varying amounts. Many of the nitrogen oxides are colorless and odorless. However, one common pollutant, nitrogen dioxide ($NO_2$) along with particles in the air can often be seen as a reddish-brown layer over many urban areas.

Nitrogen oxides form when fuel is burned at high temperatures, as in a combustion process. The primary manmade sources of NOx are motor vehicles, electric utilities, and other industrial, commercial, and residential sources that burn fuels. NOx can also be formed naturally.

**Manmade Sources of NOx Emissions - 2003**




| Opening page | What is it? Where does it come from? |
| Chief Causes for Concern | Health and Environmental Impacts of NOx |
| EPA's Efforts to Reduce NOx | U.S. EPA Offices |
| How Nitrogen Oxides Affect the Way We Live and Breathe (PDF, 774K) |

Frequently Asked Questions | Technical Information