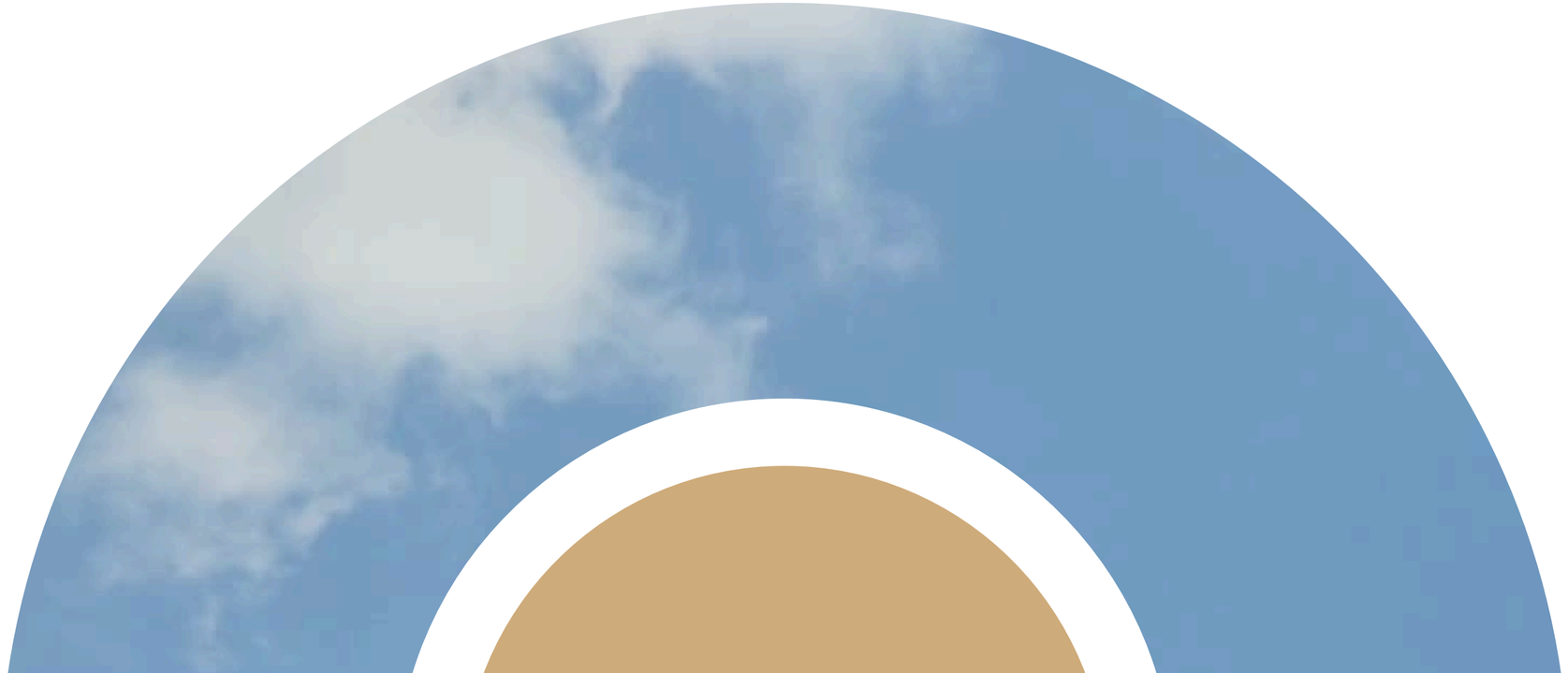
LAREDO
Public Health

AIR QUALITY UPDATES

APRIL 22, 2025

Disclaimer

The information presented is based on independent reports by the Texas Commission on Environmental Quality (TCEQ), U.S. Environmental Protection Agency (EPA), and the Rio Grande International Study Center (RGISC). These studies were not conducted by the Laredo Public Health Department. At this time, the department does not have in-house air quality analysis expertise or specialized equipment to independently verify the findings. This summary is meant to inform and provide context. We rely on the original agencies and experts to explain the results and take any needed action. Our local health department is working toward building the tools and knowledge needed to better monitor air quality in our community.



LAREDO
Public Health

Ethylene Oxide (EtO): Sterilization Tool with Health Risks

How EtO is Used

- EtO is a colorless gas used to sterilize heat- and moisture-sensitive medical equipment, including surgical instruments, catheters, and plastic devices.
- It’s effective at killing bacteria, viruses, and fungi without damaging delicate materials.

Health Concerns – Why It Matters

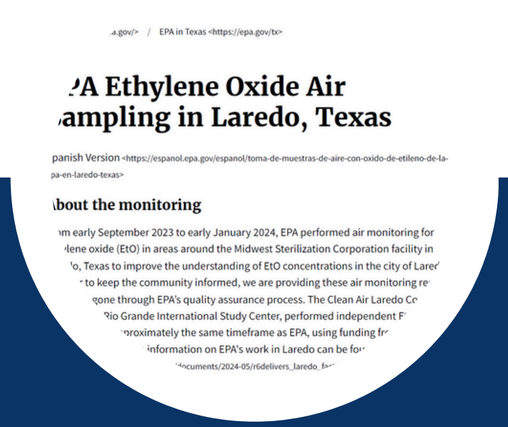
- EtO is classified as a human carcinogen by the U.S. Environmental Protection Agency (EPA) and the International Agency for Research on Cancer (IARC).
- Long-term exposure—especially in industrial or occupational settings—has been linked to:
  - Increased risk of lymphoid cancers
  - Elevated cases of breast cancer
  - Respiratory and neurological symptoms

Public Health Note

- Safe sterilization practices are essential, but it's critical to monitor emissions and exposure to protect workers and nearby communities.

LAREDO
Public Health

Laredo Air Quality (EtO) Assessments


.gov/> / EPA in Texas <https://epa.gov/tx>

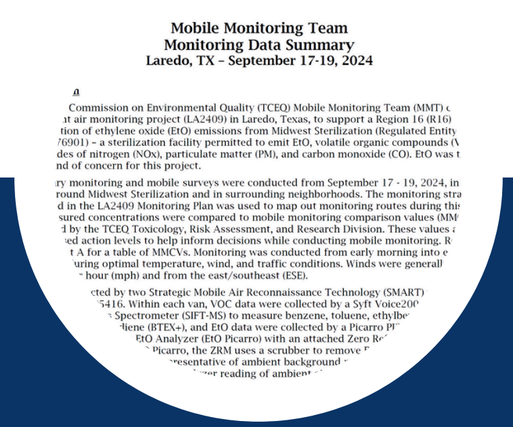
PA Ethylene Oxide Air Sampling in Laredo, Texas

panish Version <https://espanol.epa.gov/espanol/toma-de-muestras-de-aire-con-oxido-de-etileno-de-la-pa-en-laredo-texas>

About the monitoring

m early September 2023 to early January 2024, EPA performed air monitoring for
lene oxide (EtO) in areas around the Midwest Sterilization Corporation facility in
o, Texas to improve the understanding of EtO concentrations in the city of Laredo
to keep the community informed, we are providing these air monitoring re
gone through EPA's quality assurance process. The Clean Air Laredo Co
Rio Grande International Study Center, performed independent F
proximately the same timeframe as EA, using funding fr
information on EPA's work in Laredo can be fo
ocuments/2024-05/r6delivers_laredo_fs


ylene Oxide in Laredo,


Mobile Monitoring Team
Monitoring Data Summary
Laredo, TX – September 17-19, 2024

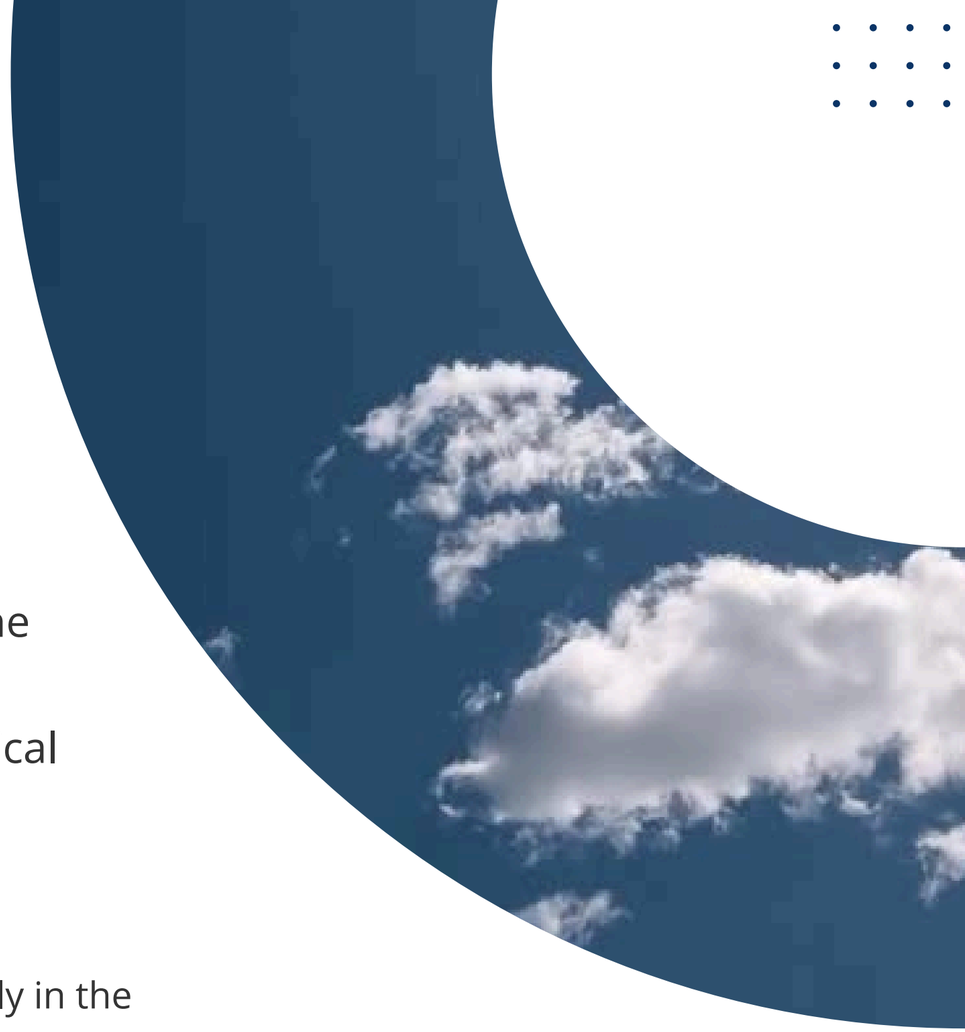
Commission on Environmental Quality (TCEQ) Mobile Monitoring Team (MMT) c
t air monitoring project (LA2409) in Laredo, Texas, to support a Region 16 (R16)
tion of ethylene oxide (EtO) emissions from Midwest Sterilization (Regulated Entity
76901) – a sterilization facility permitted to emit EtO, volatile organic compounds (V
des of nitrogen (NOx), particulate matter (PM), and carbon monoxide (CO). EtO was t
nd of concern for this project.

ry monitoring and mobile surveys were conducted from September 17 - 19, 2024, in
round Midwest Sterilization and in surrounding neighborhoods. The monitoring stra
d in the LA2409 Monitoring Plan was used to map out monitoring routes during this
sured concentrations were compared to mobile monitoring comparison values (MM
d by the TCEQ Toxicology, Risk Assessment, and Research Division. These values a
ed action levels to help inform decisions while conducting mobile monitoring. R
t A for a table of MMCVs. Monitoring was conducted from early morning into e
uring optimal temperature, wind, and traffic conditions. Winds were generall
hour (mph) and from the east/southeast (ESE).

cted by two Strategic Mobile Air Reconnaissance Technology (SMART)
5416. Within each van, VOC data were collected by a Syft Voice200
Spectrometer (SIFT-MS) to measure benzene, toluene, ethylbe
iene (BTEX+), and EtO data were collected by a Picarro PI
EtO Analyzer (EtO Picarro) with an attached Zero Re
Picarro, the ZRM uses a scrubber to remove E
resentative of ambient background
er reading of ambient

Three separate studies measured ethylene oxide (EtO) in the air around a sterilization facility in Laredo. They found higher levels of EtO near the facility and lower levels farther away. These assessments help us better understand where EtO is present and how wind and distance affect its movement in the air.

LAREDO
Public Health



TCEQ Air Quality EtO Monitoring

September 17–19, 2024

What did they do?

TCEQ used two vans with high-tech equipment to drive and park around the Midwest Sterilization plant and nearby neighborhoods to test the air for a chemical called ethylene oxide (EtO). This chemical is used to sterilize medical equipment but can be harmful at high levels over long periods.

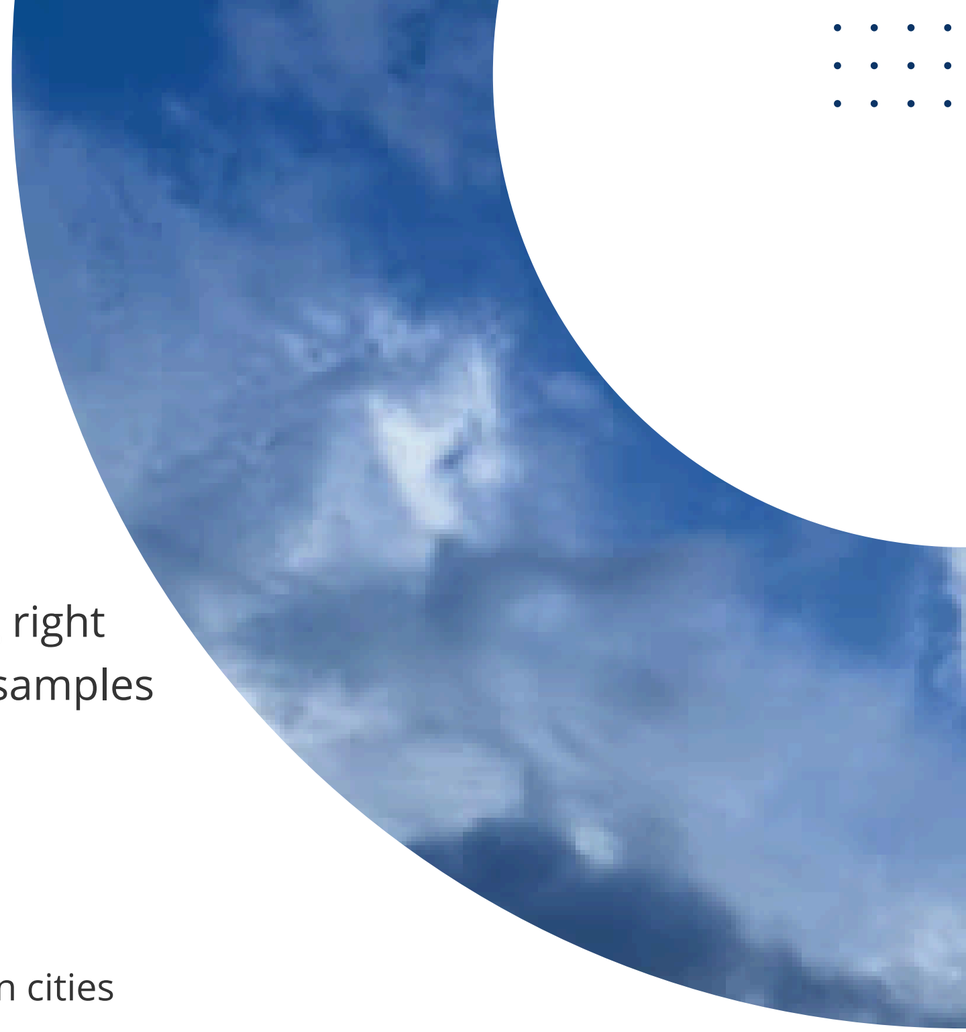
What did they find?

- The highest levels of ethylene oxide were found right near the plant, especially early in the mornings.
- Even the highest readings (up to 39 parts per billion) were below levels considered dangerous for short-term exposure.
- In neighborhoods, ethylene oxide levels were very low or too small to measure accurately.
- Their equipment detected short bursts of the chemical near the plant, but nothing that suggested an immediate health risk.

LAREDO
Public Health

EPA Air Quality EtO Monitoring

September 9, 2023 – January 7, 2024



What did they do?

EPA placed air-sampling canisters at five locations across Laredo, including right near the sterilization plant and further away. These canisters collected air samples every three days for about four months.

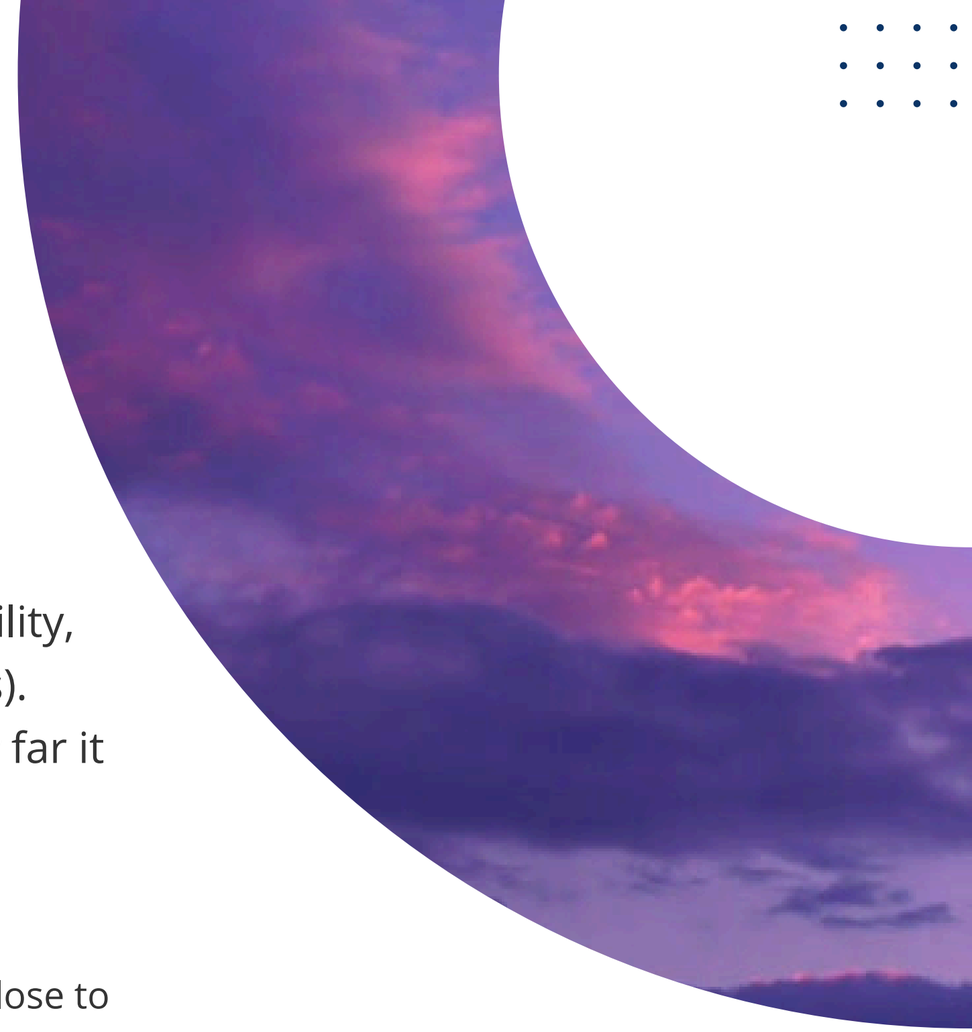
What did they find?

- EtO levels were highest close to the plant, as expected.
- Within a mile, the chemical levels dropped to the same as normal background air in cities without known EtO sources.
- The highest 24-hour reading was about 7.8 parts per billion, still far below the EPA's action limit.

LAREDO
Public Health

RGISC Air Quality EtO Monitoring

September to November 2023



What did they do?

Air samples were collected at 12 sites around the Midwest Sterilization facility, including sites close to the plant and farther away (called background sites). Scientists looked at how much ethylene oxide (EtO) was in the air and how far it spread.

What did they find?

- The highest concentrations of EtO—up to 23 parts per billion (ppb)—were found close to the facility, especially downwind.
- EtO decreased with distance, but was still detectable more than a mile away in some cases.
- Wind direction and time of day mattered: levels tended to be higher overnight and lower in the afternoon.
- The study strongly suggests that Midwest Sterilization is the main source of EtO in the area.
- Results closely matched EPA's findings, strengthening the conclusion.

LAREDO
Public Health

Key Takeaways

1. Ethylene oxide (EtO), a chemical used in sterilization, was found in the air in all three studies. The highest levels were found closest to the Midwest Sterilization facility, and the levels dropped the farther away the tests were done.

2. In the RGISC study, EtO levels went as high as 23 parts per billion (ppb) at locations about 300 meters from the plant.

3. The TCEQ report showed EtO levels reaching up to 38.84 ppb near the plant. In nearby neighborhoods, the levels were mostly too low to measure.

LAREDO
Public Health

Key Takeaways

4. The EPA study recorded EtO up to 7.78 ppb near the plant, with much lower levels in areas farther away.

5. All three studies showed a similar pattern: the closer the sample was to the plant, the higher the EtO levels. Background or far-away areas had low or barely detectable amounts.

6. Wind played a role in where EtO showed up, higher levels were often found in areas downwind from the plant during testing.

LAREDO
Public Health

Key Takeaways

7 The RGISC report also found that EtO levels were often higher overnight and lower during the day, which is common with air pollution due to changes in how the air moves at different times.

8 Each study used different tools and sampling schedules. While RGISC and EPA collected long-term air samples and found similar patterns near the facility, TCEQ used short-term mobile testing and also detected higher EtO levels near the site.

9 All reports documented valid detection of EtO using EPA-approved methods (e.g., TO-15), and findings were supported by quality assurance and quality control protocols.

LAREDO
Public Health

THANK YOU