

# Ethylene Oxide (EtO) Monitoring Frequently Asked Questions (FAQs)

## Why is outdoor air monitoring being done in Lake County?

There are two facilities in Lake County, Illinois that have permits to emit ethylene oxide (EtO) gas. Medline Industries, Inc., in Waukegan uses EtO to sterilize medical equipment, and Vantage Specialty Chemicals in Gurnee uses EtO in the production of other chemicals.

As of December of 2016, EtO is classified as highly carcinogenic. Exposure to EtO is linked to heightened risk of certain cancers. Air monitoring is being done in Lake County to determine what levels of EtO the public may be exposed to. Air monitoring results will be used to help residents understand any health risks that may exist.

## When did monitoring begin and how long will it last?

Outdoor air monitoring began the week of June 3, 2019. Air samples will be collected for 30 days. Monitoring may be extended if funds allow.

## Who is doing the testing?

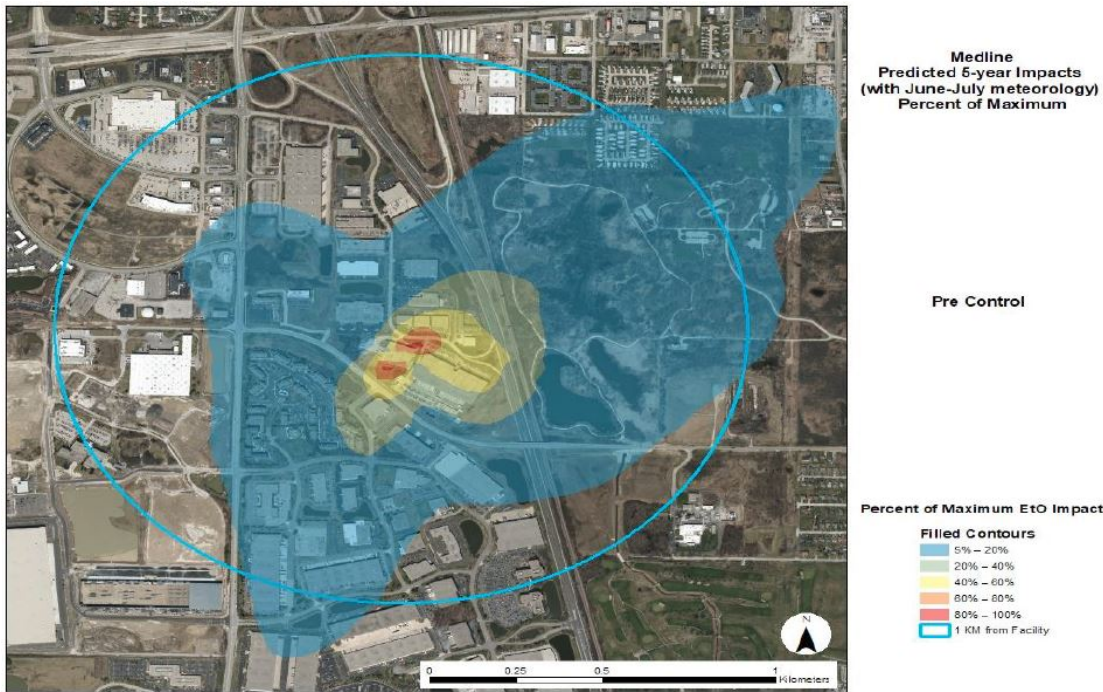
In partnership with the Lake County Health Department, the Village of Gurnee and City of Waukegan have contracted with GHD Services, Inc., the environmental firm that collected samples for the Village of Willowbrook. GHD Services, Inc. is a national company that has a great deal of experience in air monitoring. Once the samples are collected, they will be sent to a laboratory for analysis.

## Where are the monitoring locations?

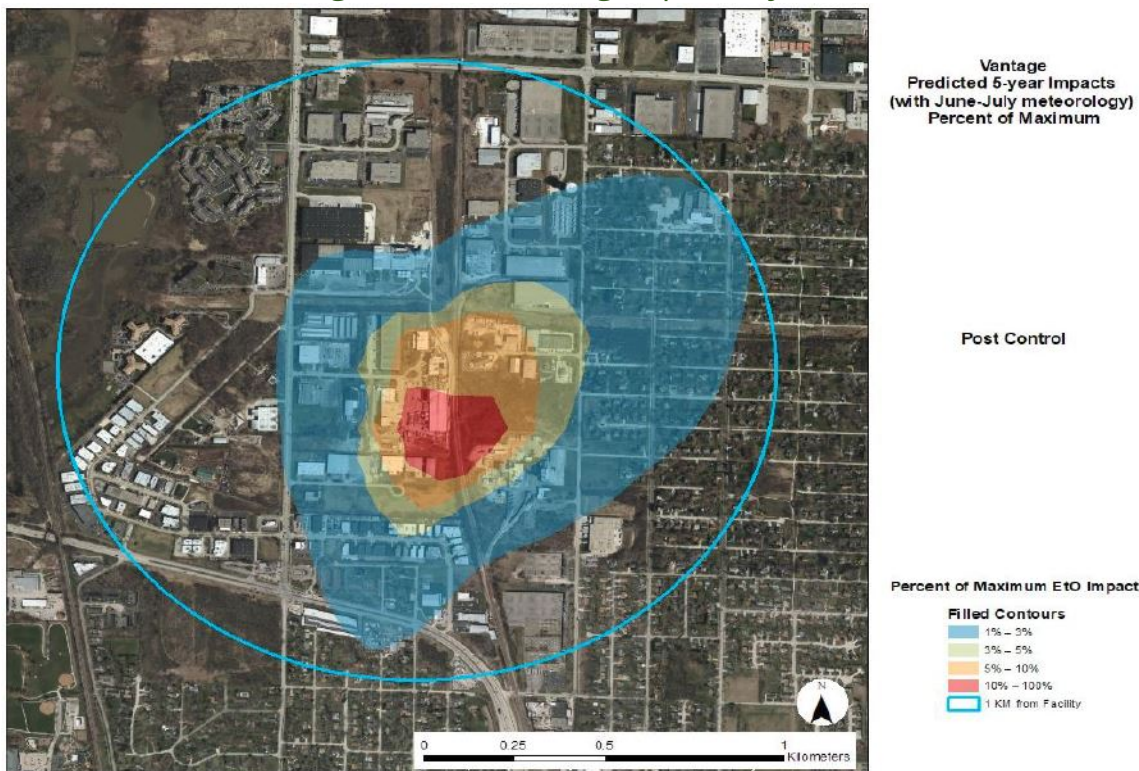
Ten monitors are being placed to collect ambient air samples in Lake County. Based on U.S. Environmental Protection Agency (EPA) air modeling results:

- Four locations were chosen near Medline Industries, Inc. in Waukegan.
- Four locations were chosen near Vantage Specialty Chemicals in Gurnee.
- Two remote sites were chosen to collect background levels of EtO. Both remote sites are approximately the same distance from the facilities. One was placed well beyond where the U.S. EPA expects any impact from the facilities. The other is located between the facilities.

## U.S. EPA Air Modeling Results - Medline Industries, Inc., Waukegan



## U.S. EPA Air Modeling Results - Vantage Specialty Chemicals, Gurnee



Several of the monitors have been placed on private property. Out of respect for the property owners, the Health Department did not initially publicize the locations. Location information has been posted with the test results.

If you find an air monitor, please do not tamper with or remove it.

## How were the monitoring locations selected?

The monitor locations have been carefully selected to give us the best understanding of EtO levels in the outdoor air. The monitors were placed according to the U.S. EPA's recommendations. The U.S. EPA considered meteorological data, such as local wind patterns, to see where the emissions might drift in the air during the summer season. The U.S. EPA's dispersion modeling results and factors such as topography and property accessibility were also used.

## Were the monitoring locations chosen because there are high EtO levels there?

No. Some of the monitors placed very close to the facilities are expected to capture the highest levels of EtO. Others were placed further away, generally in the direction of the prevailing winds to assess the community impact of the emissions.

## Why aren't there more monitoring locations? Didn't the U.S. EPA monitor more locations around Sterigenics?

The number of monitoring locations is based on U.S. EPA recommendations. In the U.S. EPA's experience, more monitors do not necessarily give more useful information. The monitor locations have been carefully selected based on scientific information to give us the best understanding of EtO concentrations in the outdoor air.

At Sterigenics, the U.S. EPA monitored eight locations. Three monitoring locations were chosen based on modeling, two were chosen next to the facility to provide the highest EtO levels, and three were chosen by the community.

## Why are you only testing for 30 days?

The Health Department, Village of Gurnee and City of Waukegan were initially able to assure 30 days of testing, with the hope that additional funding may be secured to extend the monitoring program. The goal has always been to provide state and federal agencies enough data to develop meaningful conclusions on health risks that may be present.

## Why did the testing not start earlier?

Since November, the Lake County Health Department, Village of Gurnee, and City of Waukegan have urged the U.S. EPA to conduct the testing as they did in Willowbrook. Once it became clear that the U.S. EPA would not do the testing, the partners worked together to secure funding and hire a contractor to conduct independent testing.

A scope of work, contracts, and an intergovernmental agreement needed to be created, and governing boards needed to approve the project before moving ahead. The partners consulted the U.S. EPA on the technical aspects of the project.

The U.S. EPA completed air dispersal modeling to assist in selecting the monitoring locations. Finally, the Health Department worked with GHD Services, Inc., to secure locations for the monitoring to occur, and the monitors were placed.

## What do the monitors look like?

The air monitors look like a stainless steel canister attached to a tripod. The canisters are attached to the tripod at a height of about six feet above the ground to collect air that people in the area would be breathing.

## How do the monitors work?

The sample collection device is a stainless steel canister in which a vacuum is created. Once the canister is in place, a small valve is opened. The canister slowly draws in the surrounding air for a 24 hour period. Then the canister is sent to a lab to determine the amount of EtO in the air on that day.

## Can the monitor/canister leak EtO into the environment?

No. The monitors do not pose a health risk. They will never contain more EtO than is present in the surrounding air.

## When will results be available, and where can I find them?

Air samples collected by GHD Services, Inc. will be sent to a laboratory for analysis. Once received, the results are shared with partner agencies, then will be posted on the Lake County Health Department's web page, [www.lakecountyil.gov/eto](http://www.lakecountyil.gov/eto).

After monitoring is complete, the Agency for Toxic Substances and Disease Registry (ATSDR) will complete a health risk analysis. Conducting an analysis of potential health risks takes time; it is a scientific process that will take several months.

## What happens after you get the results?

The Lake County Health Department will provide the results to the U.S. EPA, which has agreed to analyze and present them in a meaningful and understandable format.

The Health Department will provide the results to ATSDR, which will use the data to conduct a health risk assessment. That assessment will describe the potential health threat that the observed levels of EtO may present to residents.

The Health Department will provide the results to the Illinois Department of Public Health to analyze and report on the cancer rate incidence in any areas where high levels of EtO may be found.

Finally, results will be sent to the Illinois EPA, the agency responsible for the enforcement of air pollution regulations.

## What will the results tell me?

The results will indicate the levels of EtO in the air at the monitoring locations. These reported levels will not indicate your health or cancer risks.

## How long does EtO stay in the air? How does it leave?

Like all air pollutants, EtO disperses, or spreads out, in the air. It is carried away by wind. How quickly it disperses depends on the strength of wind. EtO is a volatile compound, meaning that it does not stay for a long time in the environment. Its estimated half-life in the atmosphere is 69 days during summer months and 149 days during winter months. EtO also reacts in the air to create formic acid, which is a naturally occurring chemical.

## Will Medline and Vantage know when you are testing and shut/slow down operations on those days to reduce the EtO levels?

No. We will not be publicizing the dates that samples are being collected. The monitors collect air slowly over a 24-hour period, and samples will also be collected on random days between the every-third-day monitoring schedule.