



Tonawanda Community Air Quality Study

Fact Sheet

Division of Air Resources

October 2009

About the Tonawanda Study

In July 2007, the New York State Department of Environmental Conservation (NYSDEC) initiated a year-long community air quality monitoring study in the Town of Tonawanda (Erie County) to measure the concentration of air pollutants within the community and evaluate the potential risk to public health. The Study community is an urban area and home to some of New York's largest industrial facilities. The Study was funded through in-kind contributions from NYSDEC and a Community-Scale Air Toxics Ambient Monitoring Grant from U.S. Environmental Protection Agency (USEPA).

Air monitors were installed at four locations in the community to measure air concentrations of 56 air toxics and fine particulate matter. One of the monitors also measured sulfur dioxide and carbon monoxide. A comprehensive inventory of sources was prepared for the Study area to use in modeling air toxics that were unable to be monitored and to evaluate how well the models estimated air pollutant concentrations in relation to the monitored results. A meteorological station was installed at one location for use in assessing source contributions and the influence of wind direction.

A public health evaluation was conducted by comparing the results from the air toxics monitoring with NYSDEC's health-based annual guideline concentrations. NYSDEC will be providing the monitoring and modeling information to the New York State Department of Health to assist in their assessment of a possible community health study in the Tonawanda community.

Major Findings of the Tonawanda Study

- The results of this Study provide a strong basis for further compliance monitoring and regulatory actions to reduce the risk associated with exposures to air pollution in the Tonawanda community.
- The public health evaluation indicated that the highest area of cancer risk in the Study community was located in the industrial area at the Grand Island Boulevard monitor. An estimated excess annual lifetime cancer risk for benzene was calculated to be 75 in-one-million. This conservative cancer risk estimate assumes continuous exposure for 70 years (365 days per year, 24 hours per day) at this monitor location and assumes that the benzene concentrations remain constant for 70 years. Additionally, an "upper-bound" estimate on the likelihood that benzene causes cancer was used in this Study. As a result, the true risk of developing cancer from benzene exposure is not likely to be higher, and may be lower, than the estimate provided in this study.
- Elevated concentrations of benzene and formaldehyde were found at the monitor on Grand Island Boulevard located next to NOCO Energy Corporation. Higher daily concentrations of benzene were found when the wind came from the direction of the largest known point source of benzene, Tonawanda Coke Corporation. The formaldehyde evaluation indicated that the measured concentrations were influenced by local facilities and mobile sources.
- The annual average concentration for six air toxics (1,3-butadiene, acetaldehyde, acrolein, benzene, carbon tetrachloride, and formaldehyde), each exceeded NYSDEC's health-based annual guideline concentrations.

More details about the benzene results

- The benzene concentrations found in the Study varied greatly across the community. The highest concentration was found at the Grand Island Boulevard monitor adjacent to the industrial site. The benzene concentrations found at the Sheridan Park Water Tower and Beaver Island State Park monitors, both in residential neighborhoods, were similar to outdoor air concentrations found in the New York City area. The Brookside Terrace monitor in a residential neighborhood measured benzene concentrations slightly higher than concentrations found in New York City area.
- The most recent monitoring data (July 2008 – June 2009) shows a decrease in benzene concentration in the community compared to the Study period (July 2007 – June 2008). The results at the industrial monitor (Grand Island Boulevard) show a reduction in benzene concentration of 56%. The estimated excess annual lifetime cancer risk was calculated to be 33 in-one-million. The residential monitor located at Brookside Terrace shows a 35% reduction in benzene concentration compared to the Study period. The estimated excess annual lifetime cancer risk at this monitor was calculated to be 10 in-one-million.
- These measured benzene reductions could potentially be attributed to operational changes made at the Tonawanda Coke Corporation along with a reduction in overall production in the last year. NYSDEC is currently evaluating these air contaminant reductions.

What is being done to decrease exposures to air pollutants in the Tonawanda community?

- NYSDEC has increased compliance inspections of all air pollution sources within the Study community and also has inspected additional sources outside the Study area. These inspections have focused on known facilities releasing benzene and future efforts would focus on other numerous smaller sources.
- During and after the Study period, NYSDEC regional staff visited the Tonawanda Coke Corporation many times to observe facility operations to assess potential locations of air contaminant emissions and compliance with their facility permit. This continuing effort has already resulted in emission reductions which are outlined in the full Study report.
- In April 2009, the USEPA, with cooperation from the NYSDEC, conducted a comprehensive compliance inspection of the Tonawanda Coke Corporation. The results will be available in the near future.
- NYSDEC also is reviewing the state and federal conditions contained in the air permits of the facilities in the Study community to evaluate if these conditions could be rewritten to ensure better work practices and oversight of these practices to help reduce harmful emissions.
- NYSDEC has continued air monitoring at two locations in the community and has expanded the monitoring to measure additional pollutants. The results from these monitors will be used to examine air pollution reduction measures for the facilities in the community.

Where can I find more information?

To learn more about the Study and read the full Study report visit:

<http://www.dec.ny.gov/chemical/55471.html>

To learn more about USEPA's Community-Scale Air Toxics Ambient Monitoring projects:

<http://www.epa.gov/ttn/amtic/local.html>

Who should I contact if I have questions about the air quality study?

Questions About Emission Sources

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