

AIR TOXICS MONITORING NEWSLETTER

A PUBLICATION OF THE STAPPA/ALAPCO–USEPA SAMWG AIR TOXICS MONITORING SUBCOMMITTEE

January 2004

The Air Toxics Monitoring Steering Committee was established in 1999 for the purpose of assisting USEPA in preparing recommendations for a national air toxics monitoring network. In 2003, the role and responsibility of the Steering Committee changed and it was re-constituted as the Air Toxics Monitoring Subcommittee of the Standing Air Monitoring Workgroup (SAMWG). Members include representatives from several states and local agencies (Vermont, New Jersey, Texas, Oregon, California, Puget Sound), multi-state organizations (LADCO), and USEPA (OAQPS and some Regional Offices). Recent activities related to the national network are discussed in this quarterly newsletter.

Status of FY04 Funds

On August 15, 2003, USEPA issued final guidance for the allocation of \$10 million in FY2004 money to support national air toxics monitoring activities. As discussed in the previous newsletter, the grant guidance identifies five major areas:

\$2.2M for continuation of the 22-site national air toxics trends sites (NATTS)

\$0.87M for purchase and maintenance of chrome VI monitors (at each site), continuous formaldehyde monitors (at up to 3 sites), and high sensitivity CO monitors (at up to 5 sites)

\$0.385M for NATTS quality assurance

\$0.345M for data analysis projects

\$6.2M for community gradient monitoring studies

In early December, USEPA announced that the sites chosen for continuous formaldehyde are:

1. Detroit NATTS site (Dearborn)
2. Within 1 km of St. Louis NATTS Site (Blair St)
-to be co-located with a DOAS and moved to Blair St. later in the monitoring year
3. Seattle NATTS site (Beacon Hill)

and that the sites chosen for high resolution CO are:

1. St. Louis NATTS site (Blair St.)
2. Seattle NATTS site (Beacon Hill)
3. Vermont NATTS site (Underhill)
4. San Jose NATTS (using their base NATTS funds.)

USEPA extended the date for submitting proposals for the community monitoring studies until March 31, 2004. (This extension will allow applicants sufficient time to review USEPA's new draft "Air Toxics Monitoring Strategy"). For additional information concerning applications for these funds, see http://www.epa.gov/air/grants_funding.html#oaqps. The selected proposals will be announced in May, and grants will be awarded after that.

Monitoring Methods Workshop

The air toxics monitoring workshop was held on October 8-9, 2003, in Las Vegas, Nevada. The workshop, which was sponsored by USEPA and the Northeast States for Coordinated Air Use Management (NESCAUM), focused on inorganic air toxics measurement methods. Participants included 42 state, local, and tribal organizations, multi-jurisdictional organizations, USEPA, Environment Canada, and two contractors. Four break-out groups (Sampling, Analytical, Data Analysis, and National Consistency) discussed various measurement issues and provided several recommendations. These included:

- Consideration should be given to replacing the current NATTS methods for metals (i.e., PM10 hi-vol with quartz filters) with a PM10 lo-vol with teflon filters
- More data analysis guidance is needed (e.g., "prescribed analyses", and definitions for meta-data terms)
- Reduce the number of target analytes
- Upgrade AQS or find a more suitable data base for air toxics data
- Develop uniform methods or performance standards for use in the air toxics program
- Implement a national-level air toxics audit program

For additional information concerning the workshop, including a summary report, see <http://bronze.nescaum.org/committees/monitoring/oct03toxicsworkshop/>

Data Analysis

During the past quarter, one data analysis project was wrapping up, while another was getting started. On December 19, 2003, Battelle delivered the final report on the analysis of the pilot city data ("Final Technical Report for Phase II Air Toxics Monitoring Data: Analyses and Network Design Recommendations"). The final report is available on

LADCO's web site: <http://www.ladco.org/toxics.html>. It is also available on a CD, along with the final pilot city data base. A limited number of paper copies are available upon request from LADCO.

This study was the subject of a workshop on May 13-14, 2003, in Chicago. Copies of the presentations are available on LADCO's web site: http://www.ladco.org/reports/ladco/Air_Toxics_May_2003/Airtox_may03.htm.

Also in December, Sonoma Technology, Inc, under contract to LADCO, delivered a workplan for the next phase of air toxics data analysis. The objectives for the new study are as follows:

- Provide a comprehensive "look" at the existing air toxics data. This "look" should provide both a broad national assessment of air toxics data, and a detailed local examination in a few select areas.
- Present a clear message to policy makers about air toxics concentrations across the country from both national-level and local community-level perspectives.
- Provide guidance and tools to enable state and local agencies collecting air toxics data to look at and use their own data.
- Support USEPA's new air toxics web site.
- Perform limited modeling analyses, including model-to-monitor comparisons.

To ensure that the results of the study are policy-relevant, the analyses will focus on three general questions:

- How good are the data (i.e., data quality)?
- What are the air toxics concentrations nationally and locally?
- What do air toxics data say about the effectiveness of various control programs?

The tentative project schedule is to have draft results available by spring 2004 for presentation at the next air toxics data analysis workshop and a final project report by mid-2004.

Quality Assurance

A quality system provides a framework for planning, implementing, assessing and reporting work performed by an organization and for carrying out quality assurance procedures and quality control activities. USEPA-OAQPS is leading the effort to install the necessary related activities for the NATTS

Program to establish data of known and acceptable quality. Specific details of the quality system will be detailed in the Monitoring Strategy, national Quality Management Plan, Technical Assistance Document, and QA Project Plans that are being developed and are being revised to reflect resource modifications to the program.

The quality system for the toxics program attempts to strike a balance between prescription and flexibility. Rather than try to prescribe every preparation, sampling, sample handling, analysis or data reduction procedure for the program, USEPA-OAQPS, with the help of the stakeholders, are identifying the major categories of procedures (e.g., metals by ICP-MS). In addition, USEPA and stakeholders will identify the acceptable quality and quantity of data needed to fulfill the monitoring objectives. To that end, data quality objectives (DQOs) have been developed, which allow us to understand the quantity, precision, bias and acceptability that the program will need in order to achieve our goals.

USEPA will be using contractors to help with the assessment of the data. Contractors will be used to perform technical systems and instrument performance audits throughout the NATTS network. In addition, contract help will be utilized to create proficiency test samples to understand the bias between laboratories.

National Air Toxics Monitoring Strategy

In January 2004, USEPA released a draft paper entitled "National Air Toxics Monitoring Strategy", which represents an update to the February 2000 "Air Toxics Monitoring Concept Paper". The new document is intended to serve two principal purposes:

- Provide a summary of the national air toxics monitoring program, including major findings that have shaped program development and technical and logistical issues underlying program implementation.
- Provide comments on the expected short- and long-term direction for the program.

The document includes a brief background of the program, a review of the program components (e.g., NATTS, community assessments, and data analysis), a discussion of technical issues (e.g., methods and consistency, and quality assurance), and information on schedules, roles and responsibilities, and training. There is considerable discussion of community assessments, which are intended to provide a localized component to the national program with the

flexibility to address issues beyond the scope of the NATTS.

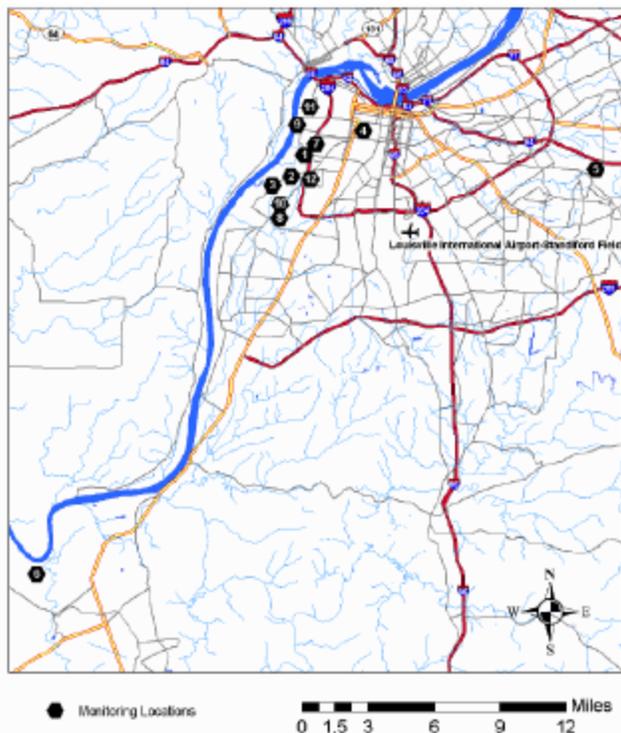
Although the document does not outline a specific future vision for the national program, it does reflect where we are at with the program and calls for on-going review based on consideration of what we learn from the monitoring activities and what we need to do to address policy/regulatory priorities.

USEPA posted the draft document on AMTIC on January 13 and is requesting public comments by March 15, 2004.

West Louisville Air Toxics Study

Between April 2000 and April 2001, the Metro Louisville Air Pollution Control District, USEPA, the Commonwealth of Kentucky, and others worked with the West Jefferson County Community Task Force to conduct an air toxics monitoring study at 12 locations in residential areas of West Louisville, Kentucky. The purpose of the West Louisville Air Toxics Study (WLATS) was to determine if residents of the area were being exposed to unhealthy levels of toxic air pollutants.

The map below shows the location of the 12 monitoring sites. Each of the monitoring sites was selected to represent a different, unique area at which exposure to airborne chemicals can occur to residents.



Map of Monitoring Sites in West Louisville, Kentucky

Responsibility for the monitors and the laboratory analysis was split between USEPA Region IV and the University of Louisville. A total of 15 monitors were used in the WLATS network. At 11 of the 12 monitoring locations, a single monitor was used. At the Ralph Avenue & Campground Road location (Site 2 on the map), two sets of duplicate monitors (i.e., four monitors in total) were used. The University of Louisville was responsible for one set of collocated monitors, and USEPA was responsible for the other. The monitoring program collected a 24-hour sample on a 1-in-12 day schedule, resulting in approximately 30 sampling events at each location.

Volatile organic chemicals (VOCs) were the principal chemicals of interest in the WLATS. Additionally, at the six monitor locations operated by the USEPA (Site numbers 1 through 6), semi-volatile organic compounds (SVOCs), metals, and reactive aerosols were also routinely monitored. In addition, a single sampling event was conducted for pesticides and polychlorinated biphenyls (PCBs) at five of the USEPA-operated monitoring locations (Site numbers 1 through 5) on August 28, 2000.

Sciences International, Inc. conducted a risk assessment for chemicals of potential concern (COPC) – i.e., those chemicals detected in at least 10% of the samples at a given location. Both chronic and acute exposures were evaluated. The results of the chronic risk assessment indicated that all of the monitors exceeded the 1-in-million lifetime cancer risk for 15 chemicals in median exposure case and 18 chemicals in the 95% UCL (which represents a conservative estimate of the true average concentration). The non-cancer risk assessment indicated a potential for adverse health impacts from 1,3-butadiene in the 95% UCL exposure case. The acute risk assessment indicated that an adverse health impact is unlikely for short-term exposures.

For further information on the West Louisville Air Toxics Study, see http://www.apcd.org/toxics_risk/wlats_risk_assessment_report.pdf

Thanks to Sciences International, Inc., whose report entitled "Final Report, West Louisville Air Toxics Study Risk Assessment", October 2003 provided the basis for this article.

For information on national air toxics monitoring, please contact Sharon Nizich, USEPA, OAQPS, nizich.sharon@epa.gov, 919-541-2825. For information on the data analysis projects, please contact Michael Koerber, LADCO, koerber@ladco.org, 847-296-2181. This newsletter is issued on a regular (quarterly) basis to provide status reports on air toxics monitoring activities.