



## SPECIAL POINTS OF INTEREST:

- Changes to CFR Part 58 Appendix A were promulgated December 20, 2005
- A few AQS Issues needing attention
- National QA Meeting scheduled of April in Austin, Texas

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ISSUE 2

JANUARY, 2006

## Monitoring & QA Regulations Out for Review

**(Excerpt from EPA news release on 12/21/05)**

The Environmental Protection Agency has proposed revisions to the National Ambient Air Quality Standards for particle pollution. The proposed revisions include the significant strengthening -- by nearly 50 percent -- of EPA's standards to protect the public from short-term exposure to high levels of fine particles. For fine particles, EPA is also taking comment on a range of annual and 24-hour standards, including strengthening these standards as well as retaining the standards at their present levels.

In addition, EPA is proposing a

standard for reducing inhalable coarse particles, or PM<sub>10-2.5</sub>. For these particles, EPA is proposing a 24-hour standard of 70 micrograms per cubic meter. The standard would apply to airborne mixes of coarse particles that come from sources such as high-density traffic on paved roads and industry. The proposed standard would not apply to mixes of coarse particles that do not pose much risk to public health, such as wind-blown dust and soils and agricultural and mining sources.

In a separate but related action, EPA is proposing amendments to its national air quality monitoring requirements, including those for

monitoring particle pollution. The changes will help EPA, states and local air quality agencies in their efforts to improve public health protection and inform the public about air quality in their communities, and they will allow air quality regulators to take advantage of improvements in monitoring technology.

The agency will take public comment for 90 days following publication of the proposal in the Federal Register and will hold three public hearings. The proposal was published 1/17/06. Information on the new regulations can be found at: <http://www.epa.gov/air/particles/actions.html>

## CFR QA Revisions Should Reduce Resource Burdens

**by Louise Camalier & Mike Papp**

With air monitoring resources tightening, it is important to look at ways to provide adequate data quality control and assessment by more efficient means. During the June 2, 2005 Ambient Air Monitoring Steering Committee Meeting, OAQPS was asked to look at whether the costs associated with the PM<sub>2.5</sub> Performance Evaluation Program (PEP) could be reduced, either through a reduction in the number of audits or by providing a different implementation scheme that would reduce implementation costs.

OAQPS evaluated the precision and bias data against the achievement of the PM<sub>2.5</sub> data quality objectives and demonstrated that the PEP could be reduced to 5 valid audits a year for those primary quality assurance organizations with  $\leq$  5 sites and 8 valid audits a year for those primary quality assurance organizations with  $>$  5 sites. This new implementation scheme could reduce the PEP costs between 20-25%. A paper on this evaluation can be found at: <http://www.epa.gov/ttn/amtic/pmpep.html>

As we started to develop techniques to review the PEP data, we realized that similar tech-

niques could be used to assess the collocated precision data. Since three years of routine data are used for comparisons to the National Ambient Quality Standards (NAAQS), EPA uses 3 years of precision data to determine if the data quality objectives (DQOs) are being achieved. Our assessments suggested that we could reduce the number of sites that required collocation to 15% within each reporting organization and reduce the sampling frequency from every six days to every twelve days without significantly compromising the precision estimates.

*(continued on page 5)*

# Development of Portable Through-the-Probe Systems Making Progress

by Mark Shanis

With ideas and funding from OAQPS, and his own ideas and experience, Avi Teitz of Region 2 is making rapid progress in developing a more portable version of EPA's relatively new (3 yrs old) Regional network of National Performance Audit Program (NPAP) through-the-probe (TTP) performance evaluation (PE) mobile audit lab systems.

Continuing in the direction recommended by the California Air Resources Board to reduce the size of the mobile laboratories, we currently operate five 18+ foot long trailers and one 16+ foot long, truck-based mobile lab (see Issue 1 for more details).

With the help of Avi, and a modest equipment investment (so far about \$6K), we have now taken the first step toward a major savings in cost and convenience for NPAP TTP activities. The design being tested requires 2 shock and rack-mounted cases, 2 padded pelican cases, a portable auxiliary generator, a portable ramp, and two 50 foot long, thick-walled Teflon hoses.

The transportation of the equipment can be accomplished by a minivan, cargo van or an equivalent sized vehicle. This will be helpful in areas with access problems such as remote rural areas, or in high rise buildings in large urban cities.

The rack and shock-mounted cases can be rolled by one person, where rolling is possible; but two people are necessary for carrying. Since 2 persons are required for the TTP PE work (one auditor and one station operator), this need should not be a problem.

As can be seen in the accompanying pictures, the three major pieces of generation equipment can be transported in just one of the rack-cases. While the ozone analyzer can be transported in a second case. This is most of what is needed for an ozone only audit. These items take up a minimum of space in a small sampling station, as shown in the first picture, because the ozone device can sit on top of the generation rack-case and the doors of the cases can be removed. Both rack-cases can be fit into the back of a minivan, as shown in the 2nd picture. One person can easily roll a single rack-case, and with some muscle, both rack-cases.

The second rack-case is available to use if a blended gas (CO, SO2, NO and NO2) audit is needed. The CO analyzer and manifold can be located in the 2nd rack-case, and the cylinder standards (medium size) can be carried in the padded pelican cases (not shown in pictures). Testing will be occurring on this system this year. For more information contact: Avi Teitz at [teitz.avarham@epa.gov](mailto:teitz.avarham@epa.gov) or Mark Shanis at [shanis.mark@epa.gov](mailto:shanis.mark@epa.gov)



TTP equipment rack case

*“With a modest equipment investment of about \$6K, we have now taken the first step toward a major savings in cost and convenience”*



Cargo ramp for van



Mustafa Mustafa (Region2)



Shock-mounted rack cases

## ORDs MetLab Provides Audit Instrument Certification Services for PM<sub>2.5</sub> PEP and IMPROVE Programs



GC oven used to calibrate temperature devices

by Paul Groff, ORD

The EPA National Risk Management Research Laboratory, Air Pollution Prevention and Control

Division (APPCD) metrology laboratory (MetLab) specializes in calibration of air sampling equipment and was formed in 1996 to alleviate difficulties encountered by APPCD principal investigators in locating private calibration service companies and sending their measuring devices off-site for calibration. Since 2000, OAQPS has identified the MetLab as a useful in-house resource for ensuring that equipment used in the PM<sub>2.5</sub> Performance Evaluation Program (PEP) operates within the quality control requirements.

The MetLab uses NIST-traceable standards to calibrate audit devices. The MetLab provides calibration reports to its clients detailing performance results of the tested devices, but MetLab personnel do not adjust the instruments in any way. If a device under test (DUT) is found to be out of specification, the client is responsible for repairs.

For calibrations, MetLab uses standard platinum resistance thermometers accurate to ±0.02 °C, a MolBox™ flow system accurate to 0.3% of reading, and a pressure standard that is accurate to ±0.2 mm of Hg.

In the past, MetLab calibrated traditional separate pressure, temperature, and flow devices for the PEP program, but this equipment is currently being phased out for newer, more user-friendly audit devices. These newer devices (deltaCals and triCals) are “all in one” pressure, temperature, and flow devices. Upgrading to these newer audit devices necessitated the MetLab to

design new calibration systems and formulate new standard operating procedures tailored for the new equipment.

The deltaCals and triCals have internal temperature, flow, and pressure sensors contained within a single unit. To simulate the field conditions under which these audit standards operate, the MetLab constructed a sealed isobaric chamber to house the entire DUT and check the flow and pressure responses of the instrument versus the standards. A controlled temperature gas chromatograph oven serves as the chamber for housing the DUTs for temperature calibration.



Isobaric chamber used to calibrate flow and pressure

## PEP Laboratories Reduced to One lab and Invests in Autohandler Technology

by Greg Noah, Region 4

One of the components of the PM<sub>2.5</sub> national ambient air monitoring program is the PM<sub>2.5</sub> Performance Evaluation Program (PEP) which is an independent EPA audit program used to evaluate measurement system bias for the PM<sub>2.5</sub> FRM network as a whole. Two independent weighing laboratories currently provide the filter weighing needs of all EPA regions operating the PM<sub>2.5</sub> PEP program. One of these weighing laboratories is in Region 4 in Athens, Georgia, and the other is in Port Orchard, Washington.

While this program has been very successful, an effort to reduce program costs and provide better weighing efficiency is in progress. Beginning in March of 2006, the Region 4 weighing laboratory will assume all filter weighing responsibilities with the aid of an automated filter weighing system. OAQPS and Region 4 decided to use this autohandler after seeing

the success of agencies using it, such as the Jefferson County Dept. of Health in Birmingham, Alabama. The autohandler is an automated system which can weigh up to 50 filters in a batch along with all quality assurance filters and all weighing session quality assurance checks. Region 4 precision tests, conducted by weighing 50 filters twice after 48 hours of equilibration, indicate that an average weight difference of 2ug can be achieved. By using this autohandler, bias introduced by the laboratory analyst is eliminated as well as entry errors that may occur. Also, this instrument can weigh up



Filter tray enclosure during weighing



Filter tray

to 3 weighing sessions per day, leaving the laboratory analyst free for more in depth data validation and quality control activities.

Well operating programs can often be made better, but meeting constraints of smaller budgets often limit the extent of what improvements can be made. Fortunately for PM<sub>2.5</sub> PEP, both goals can still be achieved. For more information contact [Greg Noah at noah.greg@epa.gov](mailto:noah.greg@epa.gov)



The “Taal Volcano” which is located near one of the Philippine air monitoring sites.

“OAQPS has revised AQS so that flow rate data for  $PM_{10}$  and  $PM_{2.5}$  can be reported at standard conditions or local conditions using either units”

“The Actual field is for the result of the audit sample (e.g., flow rate audit device). The Indicated field is for the result of the instrument being tested.”

## EPA Region 5 Assists the Philippines Get Ready for Air Monitoring

by Gordon Jones, Region 5

EPA and the Asian Development Bank (ARD) located in Manila, Philippines, recently signed a Letter of Intent (LOI) to address environmental issues of mutual concern in Asia. In September 2005, Gordon Jones, EPA, Region 5, participated in the first Asian Development Bank request for a subject matter expert for the interpretation of the EPA quality assurance requirements for ambient air monitoring and to review the Philippines De-

partment of Natural Resources and Environment quality assurance project plan (QAPP). Gordon spent about 10 days in the Philippines and conducted audits at all 10 of the ambient air monitoring stations in the Metro Manila air shed. The monitoring sites are currently being operated by a contractor but will eventually be operated by the local government. Gordon was asked to determine if the sites followed the monitoring and QA guidance in the applicable Code of Federal Regulations.

For the most part, the monitoring systems were set up and operating properly. It appears there may be a follow-up audit in the summer of 2006 when the local operators have been trained and are implementing the monitoring activities.



## AQS Issue— $PM_{2.5}$ Flow Rate Unit Codes May be Incorrect

by Jonathan Miller

It appears that some reporting organizations may be submitting their  $PM_{2.5}$  flow rate samples with the incorrect unit code to AQS. Since the monitoring concentrations for ambient sampling are measured in terms of the local conditions, the corresponding flow rates should also be measured in local conditions.

For the calendar year of 2005,  $PM_{2.5}$  flow rate data were reported in liters per minute - standard conditions (AQS unit code “073”) 98% of the time

rather than in liters per minute - local conditions (AQS unit code “118”). Prior to 2005, all the data is associated with the standard conditions unit of measure. Unfortunately, the 118 unit code was unavailable for use for  $PM_{2.5}$  so there is an assumption that the majority of data are being reported at local conditions, and therefore is coded incorrectly. So it is unclear whether the data actually represent measurements in standard conditions or local conditions. If it is discovered that the wrong unit code has been used historically, please notify

Jonathan Miller (email: [miller.jonathan@epa.gov](mailto:miller.jonathan@epa.gov); phone: (919) 541-7738). He will be able to alter the data without requiring the data to be deleted and re-submitted through the AQS application.

If the historic  $PM_{2.5}$  data was actually collected and reported in terms of the standard conditions unit, this data can be left as is but suggest that new data be submitted in terms of the local conditions. OAQPS has revised AQS so that for flow rate data for  $PM_{10}$  and  $PM_{2.5}$  can be reported at standard conditions or local conditions.

## AQS Issue- “Actual” vs. “Indicated”... Confusion Still Abounds

by Mike Papp

When entering QA data into AQS, have you ever been confused what to enter into the “Actual” field and what to enter into the “Indicated” field? For assessments that use percent difference, like flow rate audits, it is important to report the information in the

correct field. To set the record straight, the “Actual” field is for the results of the audit sample (e.g., flow rate audit device, known concentration of the one point precision check), the “indicated” field is for the result derived from the instrument being tested. For the  $PM_{2.5}$  flow rate audits, there is a simple way to

determine if the data is placed in the wrong fields because the indicated value should be at or very close to 16.67 L/min (many times reported as 16.7 L/min). A quick survey of the flow rate results for 2005 show that about 10% of the time the value of 16.7 L/min may be in the wrong field.

# AQS Issue—Need for Monitor Collocated Data in AQS

by Jonathan Miller

There have been two recent enhancements to AQS, both of which are dependant on the existence of accurate monitor collocation description data for PM<sub>10</sub> and PM<sub>2.5</sub> monitors at a site. The monitor collocation description data defines whether a monitor was the primary or collocated monitor at a site, and the time period for which it was the primary or collocated monitor.

The first enhancement is a new standard report called the “P/A Quality Indicator Summary Report” (AMP255). This report will generate completeness, precision and bias data summaries for criteria pollutants. In order for this report to work properly, the PM<sub>10</sub> and PM<sub>2.5</sub> monitor collocation descrip-

tion records for the primary monitor have to be established. This allows the program to find the proper primary monitor for a given site. Without this, the report is able to calculate how many are required, but unable to find the appropriate primary monitors to find what was reported. Consequently, the results will show lower data capture rates than what has actually been submitted to AQS.

The second enhancement involves the AQS load process. This process has been modified to automatically create precision data for any site where the monitors are flagged as collocated and raw data has been reported for both monitors. In order for this features to work, information must be submitted to AQS for both the primary

and collocated monitor registered within AQS.

The EPA’s Information Management Group has created Monitor Collocation transactions using an algorithm developed by the AQS primary contractor. The transactions can be used to update the monitor collocations data within AQS using the batch data load utility available within the application. These files of transactions have been provided to the AQS Regional Contacts for distribution to their appropriate data owners. The information within these files should be reviewed for their accuracy and then processed by the owners of the monitors. For more information contact: [Jake Summers \(email: summers.jake@epa.gov\)](mailto:summers.jake@epa.gov) phone: 919-541-5695

## National QA Meeting Set for Austin, April 24-27— Abstracts due February, 3

EPA sponsors a national conference on managing quality systems for environmental programs every year. This conference is a national forum for disseminating and exchanging information on managing the quality of environmental data; discussion and action on issues of national concern; training; and technical presentations. The conference is open to all interested members of the environmental community including representatives from EPA, other

Federal Agencies, State, Local, and Tribal governments, academia, and the private sector. **There is no charge for attending the conference or training.**

For the last four years, the OAQPS Ambient Air QA Team has included a two-day ambient air QA session at this meeting. We usually secure one day for presentations, and a second day for a QA Strategy Workgroup meeting where we talk about

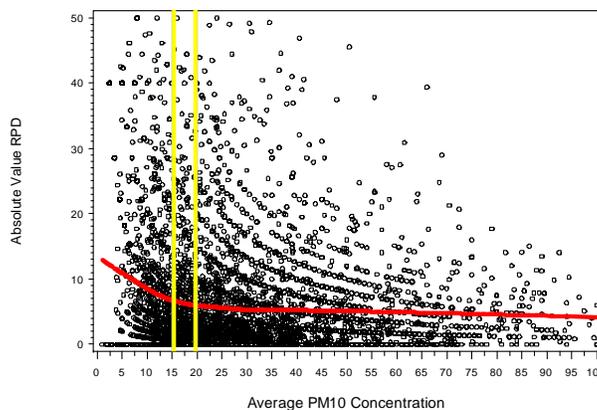
progress made on our action items and on a set of issues agreed upon by the Workgroup. We will be working on developing a list of these issues and prioritizing them over the next few months. State, Local, and Tribal monitoring organizations are encouraged to attend this meeting. Abstracts for presentations are due Feb. 3. Information about this meeting can be found at: <http://www.epa.gov/quality1/meeting.html>

## CFR QA Revisions Should Reduce Resource Burdens (continued)

Other ways of gathering more data without taking extra precision checks were examined, which resulted in the finding that we could lower the PM<sub>10</sub> 20ug/m<sup>3</sup> cut-point for precision.

The regression line in the figure to the right shows how the mean variability increases only marginally when the PM<sub>10</sub> concentration is 15ug/m<sup>3</sup> versus 20ug/m<sup>3</sup>. Reducing this cut-off value will in turn increase the sample size which will compensate the data loss from our proposal to reduce the collocated sample frequency burden from 1-in-6 day sampling to 1-in-12 day sampling.

Our evaluations of the PM<sub>2.5</sub> and PM<sub>10</sub> data lead us to conclude that reducing the sample frequency and lowering the PM<sub>10</sub> cutoff value



will not have a significant, adverse effect on our ability to provide precision estimates with adequate confidence. However, an important aspect in this conclusion is that the monitoring organizations select collocated sites that, for the majority of the time, are sampling concentrations above the cut-off value, and at a minimum, meet the 75% completeness criteria in order to collect a minimum of 22 samples/collocated site/year.

Further information regarding these collocated precision collection modifications can be found on AMTIC at: <http://www.epa.gov/ttn/amtic/pmqaanf.html>

## QA Handbook Volume IV Finds an Author

by Dennis Mikel

In response to the National Ambient Air Monitoring Strategy (NAAMS), EPA-OAQPS-Air Quality Assessment Division (AQAD) has formed a workgroup to re-write the *EPA Quality Assurance Handbook for Air Pollution Measurement Systems – Volume IV: Meteorological Measurements*.

The first version of this Handbook was written in 1983 and updated in 1990 with revisions in 1995. However, meteorological monitoring equipment and technology has advanced since the 1995 version. Because meteorological monitoring is crucial to the NAAMS and the NCore network, AQAD is leading this re-writing workgroup. The first

meeting was held in December 2005 and authors have been assigned for each section. If you are interested in working with this workgroup or wish to have more information, please contact Dennis Mikel at 919-541-5511 or email at [mikel.dennisk@epa.gov](mailto:mikel.dennisk@epa.gov).



Burtons Creek site in RTP

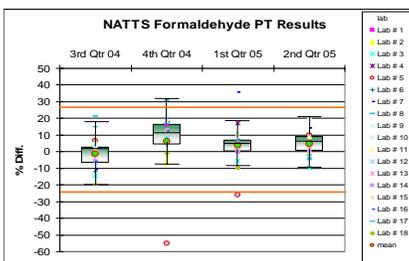
## Progress On National Toxics Trends Quality System

by Dennis Mikel

There are currently 188 hazardous air pollutants (HAPs), or air toxics, regulated under the Clean Air Act (CAA), that have been associated with a wide variety of adverse human health and ecological effects, including cancer, neurological effects, reproductive effects, and developmental effects. According to the Government Performance Results Act (GPRA), the U.S. Environmental Protection Agency (U.S. EPA) is committed to reducing air toxics emissions by 75 percent from 1993 levels in order to significantly reduce Americans' risk of cancer and of other

serious health effects caused by airborne toxic chemicals. To meet the GPRA goals, the National Air Toxics Trends Station (NATTS) network has been established, consisting of 23 stations in the contiguous 48 states. Having data of sufficient quality is paramount for a network such as the NATTS. As such, the U.S. EPA has established a Quality System (QS) for the NATTS, two aspects of which are Technical Systems Audits (TSAs) and Instrument Performance Audits (IPAs) of each network station and its affiliated laboratory tasked with sample analysis. Another integral part of the QS is the quarterly analysis of proficiency testing (PT)

samples. Furthermore, the sampling and analytical techniques selected to collect and quantify the air toxics of concern must demonstrate acceptable analytical and overall sampling precision as well as suitable overall method detection limits that are compatible with expected ambient air toxics concentrations. The box and whisker plot (left) illustrates the variability of PT results for formaldehyde, which is one of the compounds of concern for the NATTS. For more information on the NATTS quality system contact Dennis Mikel at [mikel.dennis@epa.gov](mailto:mikel.dennis@epa.gov) or Candace Sorrell at [sorrel.candace@epa.gov](mailto:sorrel.candace@epa.gov).



Formaldehyde lab comparison for 4 PT studies

## QA Reports Available for the National Air Toxics Trend Sites

by Candace Sorrel

The National Air Toxics Trends Sites (NATTS) Quality System includes the distribution of proficiency test (PT) samples of three types to all NATTS laboratories four times a year and the implementation of technical systems audits performed at 2-year intervals. The QA Report

titled "Quality Assurance Final Report – National Air Toxics Trends Stations, Calendar Year 2004" has been posted on the Ambient Monitoring Technical Information Center (AMTIC) website. This report describes and summarizes the quality assurance data generated for the NATTS for calendar year 2004

In addition, the results of the 2005 audits for quarters 1 and 2 have been posted on AMTIC. In general, OAQPS has seen improvements in the number of labs participating in the PTs as well as the quality of the data. This data can be found at the AMTIC Site: <http://www.epa.gov/ttn/amtic/airtoxqa.html>

# Region 5 Provides Technical Support to Vietnam Air Monitoring Program

by Motria Caudill, Region 5

Region 5 air monitoring staff established a relationship with the Vietnam Environmental Protection Agency (VEPA) in 2005 in response to a request for training and technical support in ambient air monitoring and quality assurance. Our binational cooperation began in February when Motria Caudill (Region 5), traveled to Hanoi with Dr. Peter Scheff (Univ. of Illinois, Chicago) and Steve Schuenemann (Wisconsin Department of Natural Resources) to deliver a 5-day course to trainees comprised of 24 monitoring personnel from all over Vietnam. We had the chance to visit several air monitoring stations – some outfitted with new continuous gas monitors (donated by European countries and multi-national banks) and others still using Soviet vintage manual devices. Although several stations were technologically advanced, it was evident that the staff did not have standard QA procedures to follow as part of a consistent national program.

We identified priority areas for assistance to VEPA and made recommendations on how to provide training, technical support and equipment. Priority areas include: developing a national monitoring strategy and quality assurance requirements; establishing a certification laboratory to maintain gas and flow calibration standards; and creating organizational structures for internal and external program audits. The recommendations were not necessarily costly, since there are already several well-appointed stations in Vietnam, however there is a lot of careful planning and organization needed. In meeting with international aid agencies we got the impression that donor countries are mainly interested in providing fancy new equipment, but it is hard to convince anyone to do the less glamorous but essential job of quality assurance planning.

To drive home the lessons of quality-assured air monitoring, EPA invited a small group of VEPA staff to visit Region 5 in August. Two VEPA personnel spent two weeks with EPA in Chicago and two weeks with Wisconsin DNR, splitting time between Madison and Milwaukee. Ms. Anh Nguyen and Mr. Thuy Nguyen received hands-on training on several topics: certifying gas and flow standards; developing a QAPP; calibrating and maintaining monitors in the field; performing site audits; validating data and uploading to AQS; doing basic data analysis and statistics. The DNR staff was extremely helpful in this exchange – Steve Schuenemann and his colleagues shared their knowledge with great enthusiasm.

The VEPA visitors got an overview of the U.S. air monitoring program and saw many sides of life in the Midwest. They went in the field with Region 5's Scott Hamilton and Basim DiHu to observe a through-the-probe audit of an Indiana Department of Environmental Management (IDEM) site located in an industrial zone of Gary, Indiana. The visitors got an extra touch of authenticity when opaque plumes began to rise from the local steel plant, evidence of an apparent permit violation; IDEM staff were on the case immediately. After hours, Anh and Thuy enjoyed some highlights of life in Chicago – a Cubs game and a concert in Millennium Park. In Wisconsin they were able to see the beauty of the countryside as they traveled between various sites. It was a whirlwind tour, but hopefully one that showed the basics of our air monitoring program, gave ideas about what to do next in Vietnam, and offered resources for future cooperation.



**Thuy Nguyen and Anh Nguyen (VEPA) get a lesson from Alex Nyhus (WDNR-Madison) on operating a hi-vol sampler**

## PM<sub>2.5</sub> Speciation QA is coming of Age

by Dennis Crumpler, OAQPS and Jeff Lantz, ORIA

The QA program for Speciation Trends Network started out modestly in 2001 with the advent of the network. Because funding has been limited, the QA activities have been focused on the analytical issues. Over the last year and a half, Dennis Crumpler from OAQPS and Jeff Lantz from ORIA have attempted to bring the QA program to a higher level, and in particular, have expanded QA on the field-operations side. We have taken a two-pronged approach: (1) strengthen the field auditing functions by improving the auditing data sheets and training programs and (2) strengthen the network's ability to examine performance data through the development of simple tracking tools-- a monthly report of flow, temperature and ambient pressure checks to accompany routine field data sheets sent to the analytical services laboratory. Using query tools and basic statistical analyses on the resulting data, we will have the ability to perform diagnostics on the overall performance of instruments as well as operator proficiency in the field. Specifically, we will be able to identify instruments that might be suffering normal age maladies and in need of hardware and/or software upgrades. Performance reliability can be compared by sampler make and model. This program will give monitoring organizations and data analysts another tool to cross examine outlying speciation data. Monthly flow data will become available to the program managers and Regional QA personnel more quickly than in the past; it will be a great tool to identify sites that are good candidates for technical systems audits in the future.

As result of identifying several age-related malfunctions over the last 2 years during field audits, we issued a nationwide request for site operators to provide us with the following data for 12 months during 2004 or a more recent period:

- Monthly flow-rate checks;
- Ambient temperature and filter temperature checks;
- Ambient pressure checks;
- Sampler ages and most recent manufacture's service;
- Reference standard types and NIST recertification dates.

Although we requested data from the entire speciation trends and supplemental networks, we received data for about 50 sampling sites and most came from the eastern portion of the country. The data indicated that samplers exhibited at least one flow rate outside of  $\pm 10\%$  about 4% of the days they were checked or audited. We are still analyzing the results, but we need a better representation of central and western sites for a long-term assessment. The STN and supplemental speciation network consists of over 250 sites.

The eastern sites provided an adequate number of sites for us to test our hypothesis. Based on the data we have, there is no need for immediate panic, however, there are a few sites with obvious problems. While only about 30 flows-checks measured flows that were outside of acceptance criteria, there were a number of months where flow checks or audits were not performed or the sampler was not operating. Thus, the absence of data also gives a hint of troubled instrument issues.

On the positive side, the data suggests that the speciation samplers should be capable of maintaining flow rates that are within 5% of the design flow rate when they are functioning properly and well maintained. With this in mind, we conclude that site operators should recalibrate their instruments when the sampler exceeds 5% of the design flow rate (again based on a certified reference standard). This will tighten-up the network's performance and will indicate to quality assurance personnel which sites should be audited in the future. For example, if a sampler is falling out of calibration every three months, it might indicate that a power supply may be failing intermittently and should be replaced.

In conclusion, this program will give EPA a big picture of network performance and will allow State, Local and Tribal programs to implement a maintenance schedule for all monitors that will minimize cost and disruption of the network's operation, and most importantly, prevent the loss of valuable data. Look for the new performance data sheets to appear with the chain of custody and field data sheets beginning with new laboratory service delivery orders in early 2006.

### **Field Audit Activities in 2005**

As in previous years, most of the audits conducted by the OAQPS and ORIA this last year were at sites involved in the IMPROVE and Speciation Trends Intercomparison Study or the Shipping Study. The Regions and a few States, however, have conducted over 35 IMPROVE audits and about the same number of STN and supplemental speciation site audits. A summary of all the audit reports prepared by ORIA, OAQPS, EPA Regional and State Auditors, including IMPROVE audits, has been posted on AMTIC. It will be forwarded to RTI for inclusion in a 2005 Data Quality Report to be prepared by spring of 2006.

We foresee the numbers of audits for Speciation and IMPROVE network increasing to 25% of the networks over the next year due to a new training program that we piloted in 2005 with considerable success. We recertified 10 IMPROVE and STN auditors in 2005 by going to a few Regions and conducting real-time "onsite" audits as part of the training exercise. We are considering three or four sites for full certification courses in 2006: Eastern Regions—maybe Maryland; the Central Regions—around St. Louis/Kansas City; and Western Regions possibly split into North and South—maybe Northern California and Phoenix. We anticipate conducting a recertification course as part of a National Air Monitoring Workshop next fall. We expect to certify or recertify to 25-30 auditors in 2006.



**EPA Office of Air Quality  
Planning and Standards**

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The Office of Air Quality Planning and Standards is dedicated to developing a quality system to ensure that the quality of the nations ambient air quality data is of appropriate quality for informed decision making. We realize that it is only through the efforts of our partners and the monitoring organizations that this data quality goal will be met. This newsletter is intended to provide up-to -date communications on changes or improvements to our quality system. Please pass a copy of this along to your peers. And please e-mail us with any issues you'd like discussed.

**Mike Papp & Joe Elkins**

# People and Websites

Since 1998, the OAQPS QA Team is working with the Office of Radiation and Indoor Air in Montgomery and Las Vegas in order to accomplish it's QA mission. The following personnel are listed by the major programs they implement. Since all are EPA employees, their e-mail address are: last name.first name@ epa.gov.

The **EPA Regions** are the primary contacts for the monitoring organizations and should always be informed of QA issues. See the contact website listed below for a list of the Regional contacts.

**Program**

- STN/IMPROVE Lab Performance Evaluations
- Tribal Air Monitoring
- Statistics, DQOs, DQA, precision and bias
- Speciation Trends Network QA Lead
- OAQPS QA Manager
- PAMS & NATTS Cylinder Recertifications
- Standard Reference Photometer Lead
- Speciation Trends Network/IMPROVE Field Audits
- National Air Toxics Trend Sites QA Lead
- PAMS & NATTS Cylinder Recertifications
- Criteria Pollutant QA Lead
- NPAP Lead
- STN/IMPROVE Lab PE/TSA/Special Studies
- NATTS PT studies and Technical Systems Audits
- STN/IMPROVE Lab PE/TSA/Special Studies

**Person**

- Eric Bozwell
- Emilio Braganza
- Louise Camalier
- Dennis Crumpler
- Joe Elkins
- Rich Flotard
- Mark Shanis
- Jeff Lantz
- Dennis Mikel
- David Musick
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- Mark Shanis
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**Affiliation**

- ORIA- Montgomery
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- OAQPS
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- OAQPS
- OAQPS
- ORIA-Montgomery
- OAQPS
- ORIA-Montgomery

## Websites

The following websites will get you to the important QA Information.

**Website**

- EPA Quality Staff
- AMTIC
- AMTIC QA Page
- Ambient Air QA Team
- Contacts

**URL**

- <http://www.epa.gov/quality/>
- <http://www.epa.gov/ttn/amtic/>
- <http://www.epa.gov/ttn/amtic/quality.html>
- <http://www.epa.gov/airprogm/oar/oaqps/qa/>
- <http://www.epa.gov/ttn/amtic/contacts.html>

**Description**

- Overall EPA QA policy and guidance
- Ambient air monitoring and QA
- Direct access to QA programs
- Information on Ambient Air QA Team
- Headquarters and Regional contacts