



## SPECIAL POINTS OF INTEREST:

- **OIG Report** nearing completion Page 1
- **New Quarterly Reports** being tested Page 1
- **TSA Guidance** Completed Page 4

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ISSUE 22

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## Office of Inspector General Report Nearing Completion

On January 8, 2016, the EPA Office of Inspector General (OIG) initiated a project to evaluate data from the ambient air program. The stated purpose was to pursue the following questions:

- Do data revisions comply with EPA criteria?
- Do data exclusions or gaps comply with EPA criteria?

QA EYE Issue 21 provided details of the information provided to EPA at that time. During 2017 OIG continued to gather information and interview some monitoring organizations. Although OIG has not issued a final report, on November 16, 2017, OIG provided a draft of their Final Report entitled *Differences in Air Monitoring*

*Agencies' Data Processing Practices Could Decrease the Reliability of Ozone Data Used to Assess Air Quality.*

The Draft provided similar conclusions to their earlier Management Alert issued on February 6, 2017, but provides 5 recommendations. The following provides the recommendations and what corrective action has been or will be implemented in the next year.

**Recommendation 1: Assess the risk of any data adjustments impacting the ozone data used in the EPA's National Ambient Air Quality Standards designation determinations.**

In response to this recommendation, OAR is in the process of

reviewing 2014-2016 data using design values generated from AIRNow data compared to design values reported by the valid data in AQS to see what differences might be revealed.

**Recommendation 2: Issue guidance clarifying the shelter temperature criteria that should be used during data validation.**

When the process of approving monitors as federal reference or equivalent methods was started, one of the testing criteria was for monitors to properly operate at 20-30°C. Therefore, the majority (if not all) monitors were initially designated with that range and the QA Handbook guidance originally listed that requirement.

(continued on page 2)

## New Quarterly QC Reports Being Tested

One of the corrective actions taken during the 1/8/2016 OIG audit was to review 2014-2016 data to determine if ozone data that was represented by an exceedance of the 1-point quality control acceptance criteria in the QA Handbook validation template were invalidated, and if not, was there compelling evidence to justify considering the routine concentration data valid. A technical memorandum entitled [\*Steps to Qualify or Validate Data after an Exceedance of Critical Criteria Checks\*](#) was posted on AMTIC on 8/30/2017 explaining the procedure. In that memorandum, we also provided an example of a quarterly report that would be developed to help

monitoring organizations and EPA review the routine and quality assurance data to determine whether the procedures described in the memo were being implemented. Sonoma Technology Incorporated (STI) and EPA, including EPA Region I and CASTNET, have been working on this program since September and have the front page selection criteria completed. We are presently evaluating the look and feel of the page, as well as the accuracy of the content. We hope to have the ozone quarterly data assessment completed by the end of January for review by all EPA Regions and monitoring organizations.

## OIG Update *Continued from Page 1*

However, newer monitors have been designated at wider temperature ranges. The 2017 QA Handbook was revised to accommodate these monitors while also indicating that the shelter must be maintained to accommodate the monitor with the most sensitive temperature requirement. OAQPS believes that if a shelter does go beyond 20-30°C range, data should not be invalidated from all monitors but only those that are not designated to operate at the temperature excursion. EPA expected that the guidance in the QA Handbook would be used in this manner, but OIG did not observe this in all cases. Since the QA Handbook gets updated every five years and was last updated in 2017, in response to this recommendation, OAR will develop and post a table of changes on AMTIC that will apply to monitoring guidance until the next full QA Handbook revision.

**Recommendation 3: Complete the quality assurance project plan review-and-approval process to verify that air monitoring agencies' quality assurance project plans incorporate the EPA regulations and guidance for conducting data validations and adjustments.**

In response to this recommendation the Office of Air and Radiation (OAR) issued a memo on July 11, 2017 (posted on AMTIC), alerting the monitoring agencies of the importance of having quality assurance project plans (QAPPs) submitted and approved that conform to regulation and critical criteria. The OAR expects this review process to be completed by the end of CY18. Additionally, OAR plans to revise the Data Certification and Concurrence Report (AMP600) to flag non-concurrence for any QAPP approval dates over five years. The OAR has already revised AQS to provide better information on the QAPP data reported to AQS. OAR is revising the Air Pollution Training Institute (APTI) course *Quality Assurance for Air Pollution Measurement Systems* (see article on page 5) that will address the issue of QAPP development and approval. Finally, the technical system audits that are conducted by the EPA Regions on monitoring agencies every three years will be used to identify QAPPs requiring revision.

**Recommendation 4: Periodically verify that air monitoring agencies are implementing the EPA's recommended criteria for data validation and adjustments through technical system audits or other oversight mechanisms.**

In response to this recommendation, OAR has developed and issued a technical systems audit guidance document (see article on page 4) with consensus from the EPA Regions to implement. This document will specify that auditors review validation criteria and the "process for documenting any adjustments made to raw data before submittal to AQS." The EPA Regions will use this guidance during technical systems audits that are conducted on the monitoring agencies every three years.

**Recommendation 5: Develop a process to provide assurances that data reported to the Air Quality System database have met the approved zero- and span-check validation criteria prior to regional review and approval of the air monitoring agencies' annual data certification packages.**

In response to this recommendation, OAR believes that the most important of the three critical criteria quality control checks (zero, span, 1-point QC) is the 1-point QC (reported to AQS) since it involves the use of both the zero air source (used for the zero check) for ozone standard dilution, and the ozone standard that is used to generate and measure the span. The 1-point QC check concentration approximates the ambient air concentrations reported by the monitoring organization and best represents the precision and bias around the concentrations reported by the monitoring agency. OAR believes that it is sufficient for monitoring agencies to complete zero and span checks in accordance with their approved QAPPs that utilize the EPA validation template critical criteria, and make these data available for review during the EPA technical systems audits. Although the AQS reporting of zero and span checks is not a regulatory requirement, some monitoring organizations and the EPA Regions have requested zero and span transactions be developed in order to voluntarily submit these data to AQS. OAR has requested that zero and span QA transactions be added to AQS and we will provide technical guidance suggesting that monitoring agencies submit these data to AQS.

## Reminder on Data Certifications After Data has been Modified

In 2017, a number of monitoring organizations were asked to review their ozone data and invalidate any data that did not meet the critical criteria in the ozone validation template. Many monitoring organizations performed these reviews and invalidated some data. We appreciate the efforts made by those monitoring organizations. As

a reminder, because data for those years where data has been invalidated has been modified, there is no longer a "Y" certification and concurrence flag on that data. During the 2017 certification period, (May 2018) monitoring organizations should consider recertifying the earlier years data.

## NO<sub>2</sub> Gas Standard Warnings to Monitoring Organizations and Vendors

EPA recently made available two technical memos addressing concerns with the use of NO<sub>2</sub> gas standards to calibrate, as well as conduct quality control (QC) checks on, true NO<sub>2</sub> analyzers. One memo was prepared specifically for monitoring organizations, while the other was prepared for gas producers. These memos can be found at [AMTIC](#).

The advent and promotion of true NO<sub>2</sub> analyzers to Federal Equivalent Method (FEM) status has led to increased use of these analyzers in ambient monitoring networks. EPA is aware of the air quality community's interest in, and adoption of, practices that use compressed NO<sub>2</sub> gas standards for QC checks. The EPA has not issued comprehensive guidance on the use of NO<sub>2</sub> gas standards in quality assurance exercises. However, in the October 2016 edition of the EPA's QA EYE (Issue 20, page 4), it was noted that EPA's Office of Research and Development's (ORD) recent experience indicated that NO<sub>2</sub> gas standards could be used to replace iso-propyl nitrate (IPN) and N-propyl nitrate (NPN) for NO<sub>y</sub> 1-point QC checks. At that time, the Agency expected that commercially available NO<sub>2</sub> standards would follow [EPA Protocol Gas requirements](#) specified in 40 CFR Part 58 Appendix A Section 2.6.1. Unfortunately, it appears that in some instances this may not be the case.

### The Protocol Gas Requirements

In order to produce an EPA Protocol Gas, a NIST-certified Standard Reference Material (SRM), a NIST-Traceable Reference Material (NTRM), or a Gas Manufacturers Intermediate Standard (GMIS) is required as the analytical reference standard. At the moment, NIST does not provide an NO<sub>2</sub> SRM. NIST has indicated they are in the process of developing an NO<sub>2</sub> SRM, but there is no timeline in place for when this development will be completed. However, the Netherlands' Van Swinden Laboratory (VSL) has a [Declaration of Equivalence](#) with NIST, and they presently produce an NO<sub>2</sub> [Primary Reference Material](#) (PRM) that is equivalent to a SRM. This PRM can be used to produce a GMIS to, in turn, produce the NO<sub>2</sub> EPA Protocol Gas.

It was pointed out in the memo to the gas producers participating in the [Ambient Air Protocol Gas Verification Program](#) (AA-PGVP) that if they use VSL's PRMs as the NO<sub>2</sub> analytical reference standard and follow the traceability protocol, such NO<sub>2</sub> gas mixtures can be certified as EPA Protocol Gases. The EPA will seek to determine which gas producers are using the VSL PRMs, and make this information available to the air quality monitoring

community. Monitoring organizations were instructed that they should check certificates of analysis to ensure that their NO<sub>2</sub> gas producers use the VSL PRMs in the production of their NO<sub>2</sub> EPA Protocol Gases.

### Stability of NO<sub>2</sub> Gas Mixtures

It has also come to the EPA's attention that there are concerns about the cylinders used to store the NO<sub>2</sub> gas mixtures. In standard passivated aluminum cylinders, the NO<sub>2</sub> gas concentration is unstable and degrades over a relatively short period of time. In light of this knowledge, VSL uses SGSTM (superior gas stability) aluminum cylinders from [Luxfer](#) for PRM concentrations less than 250 ppm to maintain gas concentration stability. These cylinders have a proprietary interior surface that helps prevent reactions and concentration degradation. The use of these cylinders have shown a stability of approximately 12 – 18 months. In discussions between the Agency and one specialty gas producer, the producer alluded that there may be certain concentration ranges that may be more stable than others, even when using the SGSTM cylinders. The EPA plans to involve appropriate staff from both the OAR and ORD to engage those specialty gas producers selling NO<sub>2</sub> EPA Protocol Gases to determine appropriate certification periods for the various concentration ranges of the NO<sub>2</sub> EPA Protocol Gases they may choose to produce.

### Summary

In order to ensure true NO<sub>2</sub> analyzers are properly calibrated and are providing accurate results, we suggest the following:

1. All Agencies using true NO<sub>2</sub> analyzers should calibrate their instruments via gas phase titration (GPT) using NO EPA Protocol Gases.
2. After the initial GPT calibration, if the agency has an NO<sub>2</sub> EPA Protocol Gas, that cylinder may be used as a QC check on the instrument if it meets the EPA Protocol Gas requirements described above. Agencies should check these QC concentrations frequently and control chart these data since the cylinder may degrade while the analyzer maintains its calibration.
3. Should an agency notice what might be degradation in the concentration of the gas mixture in the cylinder, the agency is advised to cease using the cylinder as a QC check and inform the EPA Regional Office. EPA would like to track these results. QC checks following the removal of the unstable NO<sub>2</sub> standard should be completed using GPT or an alternative NO<sub>2</sub> standard.—*Solomon Ricks*

## The TSA Guidance Document is Complete!

On December 7th, the new Technical Systems Audit Quality Assurance Guidance Document (TSA QAGD) was emailed to the Air Division Directors, Air Program Managers, and the TSA Workgroup members. A holiday gift for the TSA auditor who has everything!

A couple years ago at the National Ambient Air Monitoring Conference, EPA began a discussion that hinged around making Technical Systems Audits more consistent across the regions and raised a desire to share best practices nationally to improve our own audit programs. Out of these discussions, the TSA Workgroup was created and began work on a document to promote consistency in audits, compile best audit practices, revise old TSA tools, and create some new tools as well. The TSA Workgroup also wanted our audit processes to be transparent regarding what a monitoring organization could expect during a TSA so that they could prepare adequately for the audit. The culmination of these discussions and effort is the TSA QAGD.

Another reason for crafting this document was to provide the document to the state, local, and tribal monitoring organizations to help them strengthen their own quality systems. By giving the quality assurance community the same guidance we use to conduct TSAs, those groups can then go through the same process when conducting internal audits. Following our EPA “TSA Playbook” on an annual basis, monitoring agencies can identify and correct issues routinely rather than waiting every three years for the EPA TSA. Everyone wins when there is a strong audit program within a quality system. Small issues are discovered and addressed before they are large issues and improvements can be identified and implemented, resulting in a stronger organization.

So what’s in the document and how can it help you? To set the stage, the first three sections of the TSA QAGD lay out the basics of what a TSA is, why we do them, and what is required. But, the heart of the TSA QAGD lies in the following sections describing the TSA process as a whole. Sections 4 through 8 guide the reader through the audit process beginning with the pre-audit preparations at the regional office, into the on-site audit, writing the TSA audit report, and through the corrective action process. These sections contain the audit steps, timelines, and best practices that were compiled through the collaborative discussions of the Workgroup members to detail the TSA process.

The TSA QAGD also includes some revised and new audit tools as appendices including:

- Two versions of the revised TSA Questionnaire (Fillable Word and Excel)
- Field Audit Logbook
- Low Volume Weighing Laboratory Checklist
- Lead (Pb) Laboratory Checklist
- Audit Report Template
- Audit Close-Out Letter

Along with describing the audit activities and process in detail, the Workgroup gave much consideration and attention to the TSA corrective action process. TSAs are not effective if weaknesses in a program are identified but not addressed. The TSA QAGD presents a process for the auditor to use to facilitate corrective action in the monitoring organizations. The goal of the TSA is not simply to see how many “dings” can be uncovered, but to identify where the issues or weaknesses are within a monitoring organization and resolve the problems.

So, how can you learn more about this new guidance? Right now, we are in the initial planning phase to make some training opportunities available. For the EPA TSA auditors, we are considering a workshop in RTP to train on the document itself and other technical needs. For monitoring organization auditors, we are considering a TSA training session at the National Ambient Air Monitoring Conference to introduce the TSA QAGD and explore the TSA process. These are a couple of opportunities that are being considered and others could develop over time.

Currently, there is TSA guidance in the QA Handbook in Section 15.3. The new TSA QAGD supersedes this guidance, and all TSA auditors should follow the new guidance. We are currently working on a new TSA webpage that will fall under the Quality Assurance section. We will post the document and the appendices on that page upon its completion.

Last, but definitely not least, this document is the result of two years of hard work from the TSA Workgroup and I’d like to thank each and every member who participated in the document’s development. No collaborative effort is ever easy, but this group set the bar very high on exchanging opinions and experiences, sharing resources, and working together to complete this work. Job well done folks; you have my thanks and my respect. – Greg Noah

## One New Guidance Document in Development, One Old One Being Revised

OAQPS is currently working on two guidance documents: one is a brand new Flow Transfer Standard (FTS) Certification Quality Assurance Guidance Document, and the other is a revision to the *Transfer Standards for Calibration of Air Monitoring Analyzers for Ozone*.

### Transfer Standard (FTS) Certification Quality Assurance Guidance Document

Over the years, there has been considerable interest in having an FTS certification guidance document that standards labs or calibration shops could follow to conduct their own FTS certifications. The FTS certification guidance will provide a methodology for state, local, and tribal standards labs to use to recertify their fleet of flow standards instead of returning them to the vendors. The FTS certification guidance will take a page from the ozone transfer standard guidance by implementing a tiered system with increasing levels of traceability that will drive how certifications are done and what will be acceptable at each level. The document will also have a procedure that

laboratories can follow to recertify flow transfer standards. This document is in the initial stages of development, and Jenia McBrian is coordinating the effort at OAQPS.

### Ozone Transfer Standard Document

The *Transfer Standards for Calibration of Air Monitoring Analyzers for Ozone*, or ozone transfer guidance, is currently under revision. Ozone Standard Reference Photometer (SRP) operators have recently voiced a desire to rework the document and to research current practices to determine if improvements can be made in the document. Scott Hamilton, Region 5, is leading a workgroup to help reorganize the document and to solicit and address concerns from the workgroup. The workgroup will review the traceability language, types of ozone transfer standards, the application of ozone transfer standards, and ozone transfer standard specifications. The document will also contain a best practice standard operating procedure for conducting verification and re-verification of transfer standards.—Greg Noah

## The QA Force Awakens-Reviving the APTI 470 Course

The role of Quality Assurance Manager (QAM) is a challenging one. The QAM ensures the monitoring project and its participants adhere to the QA/QC policies established within the organization's QAPP. For an ambient air monitoring program designed to support the NAAQS, the QAM must be fluent in the suite of ambient air monitoring regulations, particularly those found in 40 CFR Part 58, Appendix A. In addition to knowing these requirements, the responsibilities of the QAM may include activities such as writing and updating QAPPs/SOPs, providing QA training to staff, oversight of audit programs and corrective actions, data validation, and completion of annual data certification activities, among others. So for those who are new QA Managers, new to QA in general, or new to air monitoring, these responsibilities may seem a little overwhelming at first. But help is on the way!

The Air Pollution Training Institute *Quality Assurance for Air Pollution Measurement Systems* (APTI 470) course is a multi-day training geared towards providing QA Managers and QA staff the tools they need to support and enhance their quality systems. The course ties together the fundamentals of QA with the vast regulatory requirements of ambient air monitoring, so that participants can walk away with a better understanding of how these concepts interconnect – and how these concepts apply directly to them.

APTI 470 has actually been around for a long time. Offered historically as a week-long classroom course, it provided participants the basics of QA, with a strong emphasis on statistics. In fact, during each day of the course, participants were tasked with applying statistical concepts to various data sets; challenges included performing regression analyses of calibration data, conducting outlier tests, calculating precision and bias of QA/QC data sets, and building control charts (including calculating the warning and control limits) – *all by hand*. During the past decade, however, the APTI 470 course has not received updates needed to keep it current with revised monitoring regulations and QA requirements. And, although the need to understand the statistics is still fundamental to any QA program, various tools and AQS reports are now available to help monitoring organizations quickly and effortlessly perform many of the statistical computations required in the monitoring program.

So, we are excited to announce that efforts are currently underway to revitalize this important QA course! In addition to bringing course content up-to-date with current regulations, EPA guidance, and monitoring technology, the course is also being reconstructed to offer content in both a traditional classroom setting and online. *Continued on page 7*

# New Ozone Standard Reference Photometer (SRP) Arrives in RTP

Over the years we have occasionally run into slowdowns when transferring the “travelling SRP” (SRP #7) from region to region in order to verify the regional level I SRPs. A few years back the verifications were delayed due to technical issues and transit damage associated with SRP #7 to the extent that we sent out the RTP bench SRP (SRP #1) which, to our dismay, also got damaged in transit. Although we have made improvements to our shipping containers to reduce transit damage, it was felt that it was time to have one additional SRP available in order to maintain our verification schedules. In FY 2016 and 2017 we secured additional STAG funds in order to purchase a new SRP (#62) which arrived in RTP on December 11th. During the previous week, Scott Moore, the ORDs SRP lead, was in Region 2 working with the EPA Region 1 and Region 2 SRP leads on their equipment and stopped into NIST on the way back to North Carolina to pick up the new SRP. The new system sports a stealth black color and has incorporated a number of improvements. These improvements include a manifold (seen to the right of the SRP) which has a fixed glass insert for more consistent set-up and operation. The SRP pneumatic system also sports a number of improvements including:

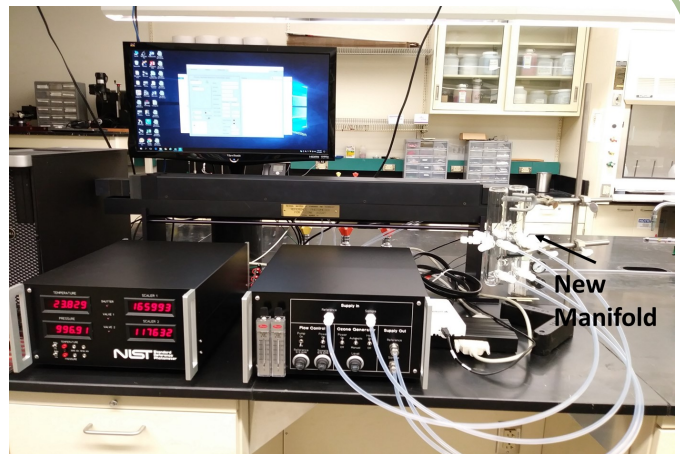
- A second mass flow controller which replaced the use of capillary tubes;
- reorientation of the heat block which facilitates access to the ozone generator lamp;
- addition of a solid teflon block for two solenoids, which replaced a number of swagelock fittings where there was potential for leaks; and,
- the addition of a fan to reduce heat generated from the solenoids.

The system includes a new data software package and a data acquisition card which is USB driven.

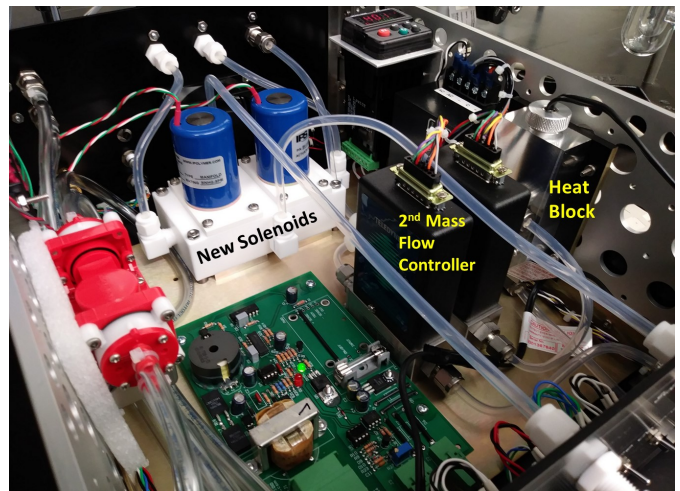
Over the next few years, Scott hopes to be able to upgrade the current SRPs with many of the improvements found in the new SRP.

Number 62 will now become the “bench standard” in RTP. If issues arise with travelling standard #7, we will be able to send out SRP #1 without any interruption of verification service.

The 2017-2018 SRP Level I verification schedule is posted on [AMTIC](#).



SRP #62



Pneumatics Box



Data Acquisition Card

## APTI Training Course (continued from page 5)

The Mid-Atlantic Regional Air Management Association (MARAMA) and OAQPS have teamed up for this project, with EPA staff developing the course material and a MARAMA Technical Review Committee (TRC) reviewing the content and providing feedback as each lesson is developed. The first phase of this project is to develop new material for the traditional classroom course, which will be taught in-person by an instructor. Once completed, the classroom material will be modified and possibly expanded to create an online course, which will include a series of quizzes and tests, followed by a certificate issued at course completion.

The new APTI 470 classroom course will be comprised of 12 primary lessons over 3 days – ranging from broad discussions of EPA’s

QA Policy and monitoring requirements to in-the-weeds talks about the technical QA/QC for criteria pollutant monitors. The course will dive into the specifics of how to verify/validate data, conduct data quality assessments, and perform internal systems audits. The course will also offer best practice suggestions along the way to help participants brainstorm ways they can augment their QA programs. The course is also designed to help other monitoring staff – such as site operators – better understand their vital role in the quality system, and how their routine QC activities can have a profound impact on the quality of the organization’s monitoring data. A separate module on statistics will be offered to participants as a refresher on the various statistical analyses applicable to the monitoring program, which will follow the completion of the 3-

day QA overview.

Many monitoring organizations have welcomed new QA managers and staff to their programs in recent years, so we are hopeful this new course will provide those staff with the knowledge, tools, and confidence they need to tackle their new roles. And although geared towards staff in monitoring organizations, this course should be beneficial to anyone working in QA or ambient air monitoring, including EPA. All classroom content should be drafted by the end of January 2018, finalized in early spring after all comments from the MARAMA TRC have been addressed. The online course material is targeted for completion in December 2018. Stay tuned. —  
*Stephanie McCarthy*

## Null Codes Now Available for AQS QA Transactions

As described in the OIG article on Page 1 of this issue, on 8/30/2017, EPA posted a Technical Memorandum on AMTIC describing the steps to validate data after an exceedance of a critical criteria check. In order for this process to be implemented in AQS, AQS needed to be modified to include:

1. An “EC” null code for use when the concentration data is invalidated due to a valid exceedance of the critical criteria;
2. An “1V” qualifier for use when compelling evidence exists to validate the concentration data in the case where there is a valid exceedance of the critical criteria;

3. An “1C” (invalid QC check) null code to the QA transaction when the QC check, after further evaluation, was found to be invalid. In this case, the concentration of the QC check (assessment concentration) would not be reported and the null code would be reported as the descriptor; and,
4. A comment field in the QA transaction.

All four processes have been coded in AQS and AQS is ready to accept information based on the process described in the technical memo. A null code can be provided in the QA transaction without a comment (although it is strongly suggested to include one), and the comment field

can be used without a null code reported. The AQS team will be forthcoming with more information on this addition.

The Quarterly Report described in the memo and on Page 1 of this issue will use the null codes and qualifiers to perform the quarterly assessments. Monitoring organization can now implement this procedure for the 4 gaseous pollutants. We will work with monitoring organizations and the EPA Regions to determine instances where null codes or other qualifiers may be applicable to other QA Transactions.

## Revised guidance for Self-implementation of the PEP and NPAP

All primary quality assurance organizations (PQAOs) have the primary responsibility of implementing their own PM<sub>2.5</sub> Performance Evaluation Program (PEP) for network bias and National Performance Audit Program (NPAP) for NAAQS gases; however, the regulations allow PQAOs to defer to EPA implementation of either using STAG grant funds. Most opt for EPA to handle it. If a PQAO is considering self-implementing the PEP or NPAP, 40 CFR Part 58 Appendix A, Section 2.4 makes clear that the SLT's program must be "independent and adequate. The "independence" is defined succinctly in the regulation, but generally means the PEP and NPAP measurements are not performed by the PQAOs monitoring program. Adequacy is more esoteric. The overarching concern is that all data be "comparable," whether it is generated by the EPA-implemented or PQAOs program. To achieve this objective all implementers should ideally use the same or equally-performing equipment, use the same technical procedures, and avoid any additional bias introduced by the analytical methods. Self-implementation requires that PQAOs dedicate resources to the program for independent sampling equipment and flow standards (calibrators), tools, and consumable items, NIST-traceable certifications of samplers, and a working laptop computer. Independent lab services require the PQAOs to either construct a separate lab or subscribe to external sources.

The EPA has previously posted documents on AMTIC that dis-

cussed the equipment, procedures, and quality assurance measures, which PQAOs should include in self-implemented programs. The NPAP document is dated July 23, 2008, and is available for review at [AMTIC](#). The last edition for the PEP document was 2009, but it has been inadvertently removed from AMTIC. It is available from Regional PEP leads and the national PEP lead at OAQPS. The 2009 PEP document did not specifically cover the Pb-PEP.

Several factors necessitate a revision of the independence and adequacy guidance. In addition to the disappearance of the 2009 PEP guidance on AMTIC and the absence of specific guidance on the Pb-PEP, two subsequent rulemakings have altered a few requirements in the associated monitoring Federal Reference Methods in 40 CFR Part 50 and the quality assurance requirements in 40 CFR Part 58 Appendix A. In 2017, EPA launched a new set of procedures for managing the logistics of the NPAP annual performance audits and the associated data flow from start of the process all the way to the final posting of the audit results in AQS. A similar process will launch for the PM<sub>2.5</sub>- and Pb-PEPs in January 2018.

We anticipate publication and posting of the revised independence and adequacy guidance for NPAP and PEP by the end of February 2018. For more information, contact [crumpler.dennis@epa.gov](mailto:crumpler.dennis@epa.gov) for PEP; and [noah.greg@epa.gov](mailto:noah.greg@epa.gov) for

## A Few Things in the Works for 2018

As mentioned in a number of articles in this issue, we have some plans for new guidance documents. The following are a few more items we'll be working on in 2018.

### QA Handbook

Although the QA Handbook came out in 2017 we will be asking the QA Handbook Workgroup to provide a review and comments on any guidance that needs more detail or anything that we might need to add. We have found that minor edits are needed and we will also be working on areas in response to the OIG audit that need more clarification. We will be developing a table in AMTIC of any changes that we think need to be made so monitoring organizations will be able to follow and update their QA documents as needed.

### Continuous PM<sub>10</sub> Validation Template.

Based on our research, the PM<sub>10</sub> continuous monitors are all low volume instruments and QC checks like the flow rates are more conducive to PM<sub>2.5</sub> acceptance criteria. We will be revising that template as well and adding some additional QC criteria to the PM<sub>2.5</sub> continuous validation templates based on the introduction of new monitoring technologies. We will let the EPA Regions know when these changes have been made.

### Minor Methods Clarification in 40 CFR Part 50

Based on some comments from monitoring organizations and EPA Regions we have been working on a technical memorandum with ORD to provide some methods clarifications. These include :

- Allowing lower concentration standards to be used for calibration of NO<sub>2</sub> and SO<sub>2</sub> instruments
- Clarification of calibration acceptance criteria language in the gaseous criteria methods, and
- Clarification on the use of the Dynamic parameter specifications in the NO<sub>2</sub> method.

### Data Certification Software

We will be revising the data certification software to identify monitoring organization with QAPPs that have not been approved within a 5 year period. This will be a stricter requirement than we currently have in the program and is based on the Technical Memo dated 7/11/2017 on [AMTIC](#).



## National Gravimetric Lab Round Robin Preliminary Results

In the last issue of the QA Eye, we reported that the Mega PE and National Gravimetric Lab Round Robin programs were close to resuming after a two-year hiatus in which OAQPS has been working hard to transition the programs. We are happy to report that both programs are now up and running!

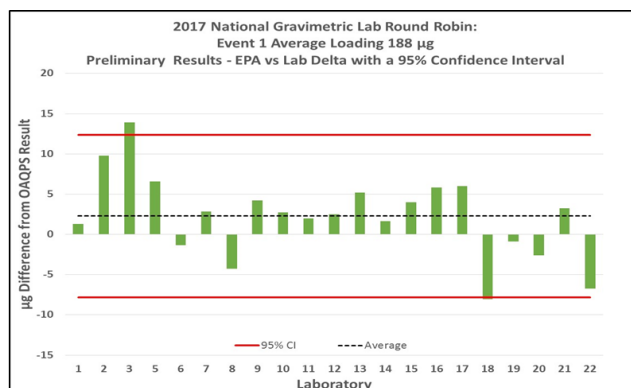
After successful testing of the PE sampling array (briefly described in Issue 21), the first National Gravimetric Lab Round Robin event began in late September. Laboratories were selected based upon feedback from each Region, which resulted in 22 laboratories participating in the first round. This is a dramatic increase in the number of laboratories that were able to participate previously and will enable us to evaluate all of the National Gravimetric Laboratories on a biennial basis.

For the Gravimetric Round Robin, OAQPS and the 22 participating labs obtained tare weights of five 47 mm Teflon filters. Three of the filters would be sampled, and the remaining two would remain blanks. After all the filters and blanks were returned to OAQPS and reweighed, three sampling events were run to obtain samples with three different loadings, which were targeted based upon Network averages.

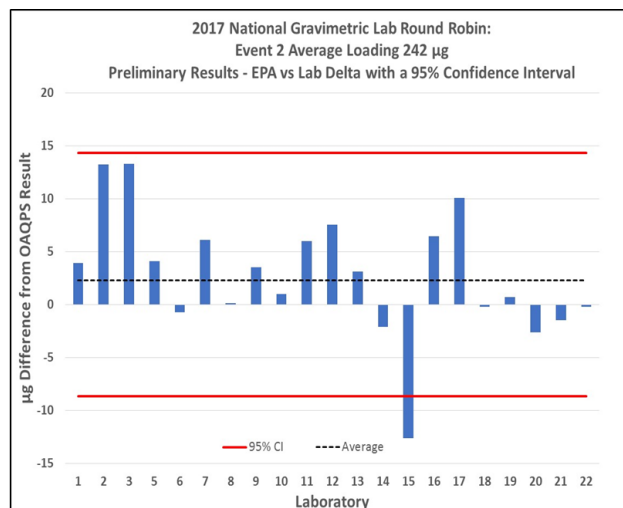
Following sample collection, which ranged from several days to over a week, the samples were weighed by OAQPS and then returned to each participating laboratory for their final weights. All samples were kept at <math>4^{\circ}\text{C}</math> except during equilibration and weighing during the entire process.

All the results were in from the participating labs by mid-November and the samples were reweighed by OAQPS. The resulting average loading from each event was 188  $\mu\text{g}$  (6% RSD) for Event 1; 242  $\mu\text{g}$  (3% RSD) for event 2; and 488 (2% RSD)  $\mu\text{g}$  for event 3. As expected, the %RSD increased at the lower loading.

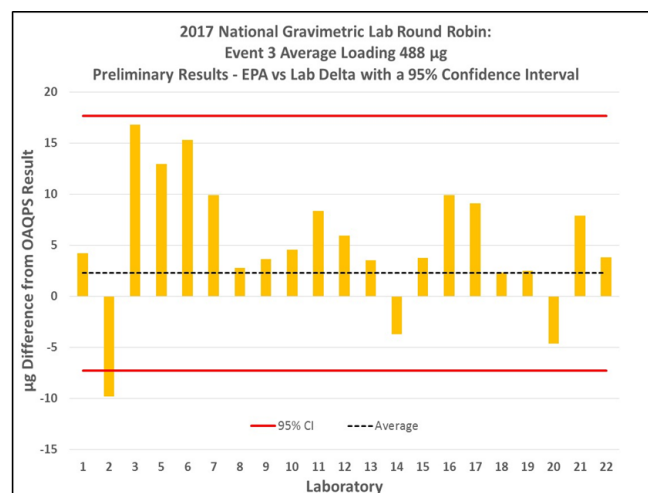
Preliminary results have been compiled and are summarized in the figures to the right. This initial data analysis compares the laboratory differences from the OAQPS and participating laboratory result, with the upper and lower bounds set at the 95% confidence interval (CI) from the mean difference. The results will undergo further analysis using the Youden Index (discussed in Issue 16, page 5) to compare laboratories. A final report on this Gravimetric Round Robin is expected to be issued by late January, 2018. Sampling for Mega PE (XRF, OCEC, and IC analyses) is expected to begin by early February. Laboratories included in that study will be limited to those currently used by the CSN and IMPROVE Networks, and labs will only receive PE samples for those analyses they currently provide to the Network. -Jenia McBrian



National Gravimetric Lab Round Robin Event 1 Preliminary Results



National Gravimetric Lab Round Robin Event 2 Preliminary Results



National Gravimetric Lab Round Robin Event 3 Preliminary Results



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The Office of Air Quality Planning and Standards is dedicated to developing a quality system to ensure that the Nation's ambient air data is of appropriate quality for informed decision making. We realize that it is only through the efforts of our EPA 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 e-mail us with any issues you'd like discussed.

**Mike Papp**

## Key People and Websites

Since 1998, the OAQPS QA Team has been working with the Office of Radiation and Indoor Air in Montgomery and Las Vegas and ORD in order to accomplish its QA mission. The following personnel are listed by the major programs they implement. Since all are EPA employees, their e-mail address is: 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.

### Program

STN/IMPROVE Lab Performance Evaluations  
Tribal Air Monitoring  
Speciation Trends Network QA Lead  
OAQPS QA Manager  
Standard Reference Photometer Lead  
National Air Toxics Trend Sites QA Lead  
Criteria Pollutant QA Lead  
NPAP Lead  
PM2.5 PEP Lead  
Pb PEP Lead  
Ambient Air Protocol Gas Verification Program

### Person

Jenia McBrian  
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Mike Papp  
Greg Noah  
Dennis Crumpler  
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Solomon Ricks

### Affiliation

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## Websites

### Website

EPA Quality Staff  
AMTIC  
AMTIC QA Page

### URL

[EPA Quality System](http://www3.epa.gov/ttn/amtic/)  
<http://www3.epa.gov/ttn/amtic/>  
<http://www3.epa.gov/ttn/amtic/quality.html>

### Description

Overall EPA QA policy and guidance  
Ambient air monitoring and QA  
Direct access to QA programs