MEMORANDUM

SUBJECT: Guidance on Self-Implementation of the Performance Evaluation Program (PEP) for $PM_{2.5}$ Monitoring and the National Performance Audit Program (NPAP) for NAAQS Gases

FROM: Philip A. Lorang, Leader
Ambient Air Monitoring Group (C304-06)

TO: Regional Air Program Managers for Ambient Monitoring
Air Monitoring Quality Assurance Contacts

This memorandum is a follow-up to Tom Curran's memorandum of May 17, 2006.[1] That memorandum explained the proposed revisions to 40 CFR Part 58 Appendix A which would make State/local monitoring organizations responsible for ensuring that adequate and independent audits are conducted at their $PM_{2.5}$ and NAAQS gases (ozone, SO_2, NO_2, and CO) monitoring stations. The proposed revisions have now been adopted with the final promulgation of the Ambient Air Monitoring Rule on October 17, 2006. The memorandum presented two options for satisfying this requirement: self-implementation[2] of adequate and independent audits like those conducted in the PEP and NPAP programs, or EPA-implementation of PEP and/or NPAP using STAG grant funds that otherwise would have been awarded to the monitoring organization. It asked the Regional Offices to obtain a preliminary indication from each monitoring organization of its choice between these two options, assuming that the revisions were to be adopted as proposed. The responses to the May 17 request indicate that only a few monitoring organizations wish to self-implement NPAP or PEP in 2007, with a few more potentially doing so in 2008. You are aware of any such cases in your Region.

The purpose of this memorandum is to provide guidance on criteria for determining whether an organization that has proposed self-implementation has the capacity and an adequate plan for doing so in calendar year 2007 or 2008. Where an affirmative determination for 2007 is

[1] The May 17, 2006 memorandum and its attachments can be found on the TTN AMTIC website, (http://www.epa.gov/ttn/amtic/npepqa.html).

[2] "Self-implementation" may include making arrangements for a third party to conduct audits if the monitoring organization cannot meet the criteria for independence with its own staff, e.g., a contractor or another monitoring organization.

not made regarding $PM_{2.5}$ audits by January 30, 2007, OAQPS and the Regional Office will proceed to implement the PEP audits for that monitoring organization. The January 30 date is necessary to ensure that necessary PEP audits can be conducted in the first quarter of 2007, since the monitoring rule requires audits to be distributed across all four quarters. Similarly for NAAQS gases, an affirmative determination is needed by January 30, or EPA will proceed to implement NPAP for that organization. EPA implementation costs (contractors, supplies, dedicated equipment, repairs, etc., but not including EPA personnel costs or facility costs) will be paid using STAG funds retained by Headquarters. The estimated costs were provided in the May 17 memorandum.

The final monitoring rule stated EPA's belief that both the NPAP and PEP programs have served as integral parts of the overall ambient air monitoring program quality system and have provided EPA and the public with independent and objective assessments of data quality and data comparability. Both programs provide the only quantitative independent assessments of data quality at a national level. The goal of this guidance is to make sure that this essential function continues even as some State/local monitoring organizations take on responsibility for implementation of the PEP and/or NPAP programs in their areas. At a minimum, the monitoring organizations should collect data in an equivalent manner and of quality equivalent to/at least as good as the PEP and NPAP programs.

Upon promulgation of the monitoring rule, the OAQPS leads for the NPAP and PEP program convened meetings with their EPA Regional Office counterparts to develop a list of criteria for determining whether an organization that has proposed self-implementation has the capacity and an adequate plan for doing so. The lists are attached (Attachment 1 for PEP and Attachment 2 for NPAP). These lists will help ensure consistency among the EPA Regions when determining adequacy and independence for 2007, and will guide the preparations of those organizations contemplating implementation of these programs in the future.

The lists focus on the issues of technical adequacy and organizational independence and are not meant to take the place of the many "how to" details found in the QAPPs, implementation plans, and standard operating procedures of the NPAP and PEP programs. In places, these documents are referenced in the lists. However, the lists do identify the critical aspects of the EPA-implemented NPAP and PEP programs that monitoring organizations should match or exceed to ensure that they will produce data of comparable quality. While many items on the list are not contained in the monitoring rule and as such are guidance, please consult with us about any situation in which a State/local monitoring organization's plans appear not to meet any criterion on the list.

We plan on issuing a memorandum in about January of each year similar to the May 17 memorandum, asking the monitoring organizations to decide whether they will self-implement these audit programs or choose EPA-implementation for the year 12 months ahead. These lists, possibly with revisions in light of experience during 2007, will become attachments to that memorandum**.**

I appreciate the help that the Regions have given us in developing these lists and for consolidating responses from the monitoring organizations. If you have any questions about the information provided in the lists, please contact the leads for the PEP (Dennis Crumpler, 919/541-0871) or NPAP (Mark Shanis, 919/541-1323) programs.

Attachments

OAQPS:AQAD:AAMG:C304-06:MPAPP:LFERRELL:X5651:1/8/07
DISK: F:USER/LFERRELL/PAPP/COVERMEMORANDUM PEP-NPAP ADEQUACY_1_05_07.DOC

Attachment 1

PEP Program Adequacy and Independence Criteria: Monitoring Rule Requirements and Supplemental Guidance

PEP Program Adequacy and Independence Criteria: Monitoring Rule Requirements and Supplemental Guidance

Glossary (taken from the Current Field and Laboratory Operating Procedures)

AQS	Air Quality System (EPA data base for ambient monitoring data)
COC	Chain of Custody form
COR	For EPA, the Contracting Officer's Representative on a given contract; he or she could be a Work Assignment Manager (WAM), Task Order Delivery Officer (TOPO), or Delivery Order Project Officer (DOPO)
ESAT	Environmental Services Assistance Team
FS	A field scientist is a person certified by the U.S. Environmental Protection Agency (EPA) as completing a required training program as being capable and responsible for conducting FRM PEs. That person would have a 2- or 4- year college degree in a physical or life science or scientific instrumentation or have equivalent training or work experience.
FRM	Federal Reference Method
NIST	National Institute of Standards and Technology
OAQPS	Office of Air Quality Planning and Standards
PEP	$PM_{2.5}$ Federal Reference Method *Performance Evaluation Program*
PQAO	Primary Quality Assurance Organization
QAPP	Quality Assurance Project Plan
SOP	Standard Operating Procedures
SLT	State, local or Tribal (refers to environmental agencies and in particular those that conduct ambient air monitoring and related quality assurance activities

Overview of Monitoring Rule Requirements

- Monitoring plans or the QAPP shall provide for the implementation of a program of independent and adequate audits of all monitors providing data for SLAMS and PSD, including provisions of adequate resources for such audit programs. (40 CFR 58 Appendix A section 2.4). Starting January 1, 2009, this requirement also applies to SPM monitors using FRM, FEM, or ARM methods which also meet the requirements of Appendix E of 40 CFR 58, unless alternative QA procedures are approved by the Regional Administrator. (Appendix A, section 1; 40 CFR 58.20; and 40 CFR 58.11(a)(2)) EPA interprets this requirement to apply only to SLAMS, PSD, and SPM monitors that measure NAAQS pollutants.)
- Primary quality assurance organizations with 5 or fewer $PM_{2.5}$ monitoring sites are required to have 5 valid independent audits per year; primary quality assurance organizations with greater than 5 sites are required to have 8 valid audits per year. Each method designation must be evaluated each year, within the required 5 or 8 audits. (40 CFR part 58 Appendix A section 3.2.7)
- The regulation requires100 percent completeness (meaning whatever it takes to get 5 or 8 valid samples).
- All FRM samplers at within each SLAMS network will be subject to a PEP audit within 6 years.

Guidance – General

- The general requirement for a program of independent and adequate audits means that any SLT implementing a PEP program must provide for independence and adequacy for both field and lab implementation elements of the $PM_{2.5}$ PEP program.
- QAPP and SOPs for implementation will be reviewed and approved by Region.
- SLT PEPs should have an adequate number of audit samplers, including back-ups.
- If equipment is borrowed from the Regional PEP program, there must be some formal agreement that the SLT agency will repair or replace damaged equipment in a timely manner.
- While the old and revised monitoring rules are silent on the scheduling of the required audits, the 1998 PEP Implementing Guidance, the1999 PEP QAPP, and the "Redbook" both refer to quarterly audits, which we still believe is the achievable best practice. When there were many more audits to complete, the schedules sometimes were strained and audits may have fallen a week or two into following quarters. With the number of audits shrinking and the number of organizations, upon which PEP numbers are determined, the new PQAOs, are shrinking, the scheduling should be more manageable.
- The implementation of the PEP program by SLTs necessarily requires a new QA function by EPA. The EPA, via contractor support, will compile a nationwide PEP QA summary report annually for 3 years. The frequency will be re-evaluated at that time.

Guidance on Independence of the SLT PEP Program

40 CRF part 58 Appendix Section 2.2 states: "The monitoring organization must provide for a quality assurance management function -- that aspect of the overall management system of the organization that determines and implements the quality policy defined in a monitoring organization's QMP…The quality assurance management function must have sufficient technical expertise and management authority to conduct independent oversight and assure the implementation of the organization's quality system relative to the ambient air quality monitoring program and should be organizationally independent of environmental data generation activities." (EPA has a good example of a QMP for OAQPS http://www.epa.gov/oar/oaqps/qa/qmp.pdf. In the preamble to the October 17, 2006, Federal Register that promulgated the recent revisions of the aforementioned monitoring regulations, EPA explained that "An independent organization could be another unit of the same agency that is sufficiently separated in terms of organizational reporting and which can provide for independent filter weighing and performance evaluation auditing." In the PEP QAPP and implementing guidance, EPA elaborates "An organization can conduct the Performance Evaluation Program (PEP) if it can meet the above definition and has a management/supervision structure that, at a minimum, will allow for the separation of its routine sampling personnel from its auditing personnel by two levels of management. In addition, the pre- and post-sample weighing of audit filters must be performed by separate laboratory facility using separate laboratory equipment. Field and laboratory personnel would be required to meet the PEP field and laboratory training and certification requirements. The State and local organizations are also asked to consider participating in the centralized field and laboratory standards certification process.

Guidance on Adequacy of the SLT PEP Program

PEP Field Operations -- Critical Steps and Activities

The current PEP Field SOP September 2006, contains all the following requirements, except for new regulatory frequency specifications for PEP audits and activities associated with collocation and alternate recertification requirements for SLT PEP Field Scientists specified in Element 17 below. The recertification and collocation exceptions, to the extent that they are applicable to the federally-implemented PEP, will be implemented in 2007 by Quality Assurance Bulletin. The SOP will be revised accordingly during its standard revision process in 2007.

1. Initial training and certification of audit personnel through EPA's federally-implemented PEP Field scientist course prior to implementation.

   The PEP is the "Gold Standard" for network bias (and relative accuracy on a local basis); therefore, uniform and consistent implementation remains a primary objective. Operator and sampler performance are held to high standards. Comprehensive record keeping, the quality control of the filter exposure and handling, and careful data validation are critical activities. EPA will provide the initial training in a timely manner for every State that needs to get certified to take their program. We will tailor the course to the specific roles that the States are assuming—field operations, gravimetric lab operations, or both. The course may be as much a forum for a given agency to fine tune their PEP QAPPs as it is for training. SLT Field Lab Scientist may also attend EPA national training and recertification courses.
2. Annual recertification of audit personnel either by
   a. Attending an annual PEP certification or recertification course;
   b. Attending a Regionally implemented recertification course conducted by a certified, EPA regional or OAQPS trainer;
   c. Local Recertification conducted by an independent organization certified by OAQPS; see alternative during collocation events—element 17 below.
3. Existence of a back-up sampler, for the circumstance of having a sampler failure near the end of a quarter or year; which would otherwise jeopardize completeness (5 or 8 valid audits with at least one in each quarter). These may be made available from the federally run PEP program.
4. Performance leak check, pressure, temperature, time and flow rate check at every audit. Data recorded and available upon request.
5. Generation of 1 field blank every event.
6. Generation of trip blanks for at least one-half of the Field Blanks, i.e., 3 for the SLTs that conduct five PEP events and 4 for those that conduct 8 PEP events. The trip blank would be valid only if it is associated with a valid PEP audit.
7. PEP sampler should be positioned horizontally within 1-4 meters (2-4 m from any high volume samplers) and 1 meter vertically, of primary sampler's (monitor's) inlet.

8. Use of pre-weighed filters within 30 days of stable pre-PEP-event tare weight.
9. 48-hour sample retrieval from sampling end date/time . See Current SOP for exceptions.
10. Use of filter caps and antistatic bags.
11. Sample placed on cold packs (ice substitute) upon retrieval and maintained at 4^{o}C.

    The October 17, 2006, regulatory changes Part 50 Appendix L section 8.36 actually states routine FRM filter samples are to be shipped at temperatures no greater than experienced during sampling and weighed within 10 days except that 30 days for post-sampling conditioning and weighing be allowed if the routine sample should is shipped on cold packs. That is the only way a sample can remain below the ambient monitoring temperature it must be cold-packed. Again, since the PEP is the "Gold Standard,' we should retain the more stringent quality control measures.
12. The sample should be transported/shipped to the gravimetric service lab at 4^{o}C with an accompanying max/min thermometer.

    EPA will provide "max-min" thermometers if the SLT agencies do not have them. If they use our Federal Lab it will be automatic.
13. The exposed filter shipment and delivery goal is to recover it within 8 hours of the end of the sampling event, get it cold-packed and shipped the same day via Fedex or other service, delivery to gravimetric service laboratory with next day "morning" delivery, unless the sample is collected on Friday, which requires refrigerated storage over the week-end at 4^{o}C and shipment with 24-hour delivery on the following Monday. A more rapid delivery is always acceptable.
14. SLT-operated PEPs will implement a chain of custody protocol and require completed field data sheets for each PEP event. Chain of Custody Forms (COCs) and Field Data Sheets (FDSs) and all QA/QC data should be filed and made available upon request. As a general rule, PEP files should be held for 4 years plus the current calendar year in order to address any FRM data-driven decision appeals. EPA will furnish COCs and FDSs to those agencies that utilize the Federal PEP lab service. Electronic files will be available upon request and are encouraged for the sake of consistency in reporting.
15. Audit samplers must be inspected and cleaned on a quarterly basis or more frequently if necessary—PEP equipment must be pristine.
16. If the PEP sampler is something other than a BGI PQ200, a multi-point verification and /or calibration for all parameters (pressure, temperature, flow) using an NIST traceable standard that is independent from the routine operational verification standard, is required annually. The PQ200 requires multipoint only for temperature.
17. In 2007, the EPA-implemented PEP will consolidate several QA activities called for in the original PEP Implementation Plan and QAPP: Periodic Sampling events using collocated PEP Samplers; Technical Systems Audits of PEP field scientists; and to accommodate SLT PEP programs which may be limited by travel budgets or policies of their agencies, an annual, on-site recertification for SLT Field Scientists during a collocation event.

    A. Quarterly collocations which are required to identify issues among the PEP samplers will be reduced to semi-annual collocation of all audit instruments at one site. The past 7 years of PEP collocation data indicate that semi-annual collocations along with routine verification of operating parameters should adequately identify calibration drift and sampler malfunctions. (Federally-run PEPs will be called upon to run a collocation in the

first calendar quarter to compare the new BGI "very sharp cut cyclone" with the WINS impactor as a $PM_{2.5}$ separator.)

B. The QAPP will be revised to require one technical systems audit of the field scientist and a recertification through a training course or real-time review of field operating procedures.

Two times per year, one of which would presumably be in December, SLT PEP programs will bring their instruments to a location at which the EPA Regional ESAT contractor is collocating and inspecting their PEP audit samplers. Details would be worked out through the EPA Regional Office, but the two events would accomplish the following:

- In one event, an EPA Regional representative, presumably an ESAT COR or QA official, will conduct a review of the ESAT Contractor's field operations procedures concurrent with the collocation. This will satisfy the second required audit in the federally-implemented PEP QAPP.
- The Regional ESAT Contractor, if holding a current PEP field scientist certification, is qualified to coordinate the collocation sampling event and also conduct a review of the SLT PEP Field procedures and sample handling. If the Regional PEP COR or QA official is present, the review would qualify as a recertification of the SLT field scientist(s). The EPA Regional PEP COR or QA official will be present for at least one of these collocation events and observe the operational procedures, as part of the Region's responsibility, according to the QAPP to audit PEP activities in the Region.
- The EPA Regional ESAT PEP field scientists and SLT PEP field scientists (if operating in that Region) will conduct a multi-day collocated sampling event. If the SLT employees cannot stay for the entire collocation event, the ESAT contractors could complete the sampling event (with the SLT's written concurrence) and ship the SLT samplers back home, using SLT shipping accounts.
- Either prior to or in conjunction with **one** of the semi-annual collocations, the EPA Regional COR will specify that paperwork for at least one quarter of PEP activity, be submitted by both the PEP contractor and the SLT PEP programs, for a TSA review. Review of this material along with observing the field operations associated with the collocation will satisfy the annual TSA requirement for either the ESAT-run or SLT PEP program.
- The TSA and evaluation forms will be reported to OAQPS for compiling in a national oversight record. OAQPS will compile an annual summary and include the summaries in a detailed Triennial PEP QA Report. These forms are already in the QAPP.

PEP Laboratory (Lab) -- Critical Steps and Activities

1. The PEP Lab's QAPP and SOPs should be available, reviewed, and approved prior to implementation; then subsequently available upon request.
2. Initial training through Federal PEP sanctioned course prior to implementation.
    a. Substantial differences in the theoretically could exist between FRM gravimetric lab procedures and the federally-run PEP, due to the QA/QC requirements in the

PEP LAB SOP, the data validation procedures, and posting to AQS. EPA will require PEP labs to retain the same levels of QA/QC.

3. The PEP Lab must be independent of the SLT's laboratory performing routine FRM sample weighing for the sampler(s) being audited.
4. The PEP Lab and analyst will be audited annually by the EPA Region or OAQPS; recertification of lab technicians is part of the process.
5. The PEP Lab must meet the Temperature/Humidity control conditions for a 24-hour period in order to allow weighing of samples.
6. All PEP Labs must meet QC requirements as described in PEP lab SOPs and include
   a. Lab Blanks - 10% or 1 per weighing session,
   b. Duplicate Filter weighing - 1 per weighing session,
   c. Balance check - beginning and end of weighing session,
   d. Previous session's duplicate at end of each weigh session - +/- 15 ug.
7. Every balance used for PEP gravimetric analyses must be internally audited annually against an NIST certified set of standards that are independent from the routine operating standards. An annual recalibration will satisfy this requirement if it is conducted by an independent party and the results before and after recertification are documented.
8. Reference Standards will be checked or certified as follows:
   a. Working mass standard check against primary on a quarterly and monthly basis.
   b. Primary standards and working standards certified annually as NIST traceable. Documentation sent to OAQPS.
   c. Lab temp and humidity standards certified annually as NIST traceable. Documentation sent to OAQPS.
9. The PEP Field and Lab SOPs discuss the time requirements for weighing exposed filters. Generally, weighing is expected within 10 days from filter exposure end date/time, see the discussion in the September 2006 field SOP which will be incorporated into the Lab SOP revisions in 2007.
10. Filters must be equilibrated a minimum of 24 hours for pre **and** post weighing.
11. The PEP Lab will employ filter equilibration blanks.
    a. Lot blanks used to determine general equilibration time.
    b. Lot exposure blanks – used to establish equilibrium of a specific batch of filters.
12. The PEP Lab will initiate and complete chain of custody (COC) procedures. COCs and Field Data Sheets should be recorded and stored and made available upon request, according to the schedule laid out in the Field and Lab SOPs.
13. The PEP lab will archive filters for current year plus last calendar year in cold storage and 3 preceding years at ambient.
14. The PEP Lab will follow AQS format for reporting QA data to appropriate fields in AQS.
15. The PEP Lab will load data into AQS within AQS's schedule—every 90 days, which is no later than deadline for SLT/PQAO submission of the $PM_{2.5}$ FRM data obtained in the same quarter as the audit.

16. The PEP Lab will participate in an annual gravimetric round-robin performance evaluation administered by EPA's Office of Radiation and Indoor Air-National Air and Radiation Environmental Laboratory, in Montgomery, Alabama.
17. The PEP Lab (or in the case of an SLT PEP program, it might be the client PQAO) submits annual report of results to EPA in format specified by EPA.

Attachment 2

NPAP Program Adequacy/Independence Criteria

Adequacy Criteria for Annual Regional Assessment of Monitoring Organization Ability to Implement NPAP TTP

Overall Implementation

1) Audits at 20% of primary quality assurance organization's (PQAOs) sites per year with a goal to audit all sites within 5-7 years. 5-7 years is mentioned because there may be some high priority sites that monitoring organizations or EPA may want audited more frequently.
2) 100% completeness meaning whatever it takes to get valid audits at 20% of the sites per year.
3) Meet definition of independence for both field and lab implementation.
4) PQAO's TTP SOPs and QAPP available, reviewed, and approved by the Region prior to implementation; then subsequently available upon request .
5) Performance of external comparability checks by (between) the EPA National NPAP TTP program and the State or local organization implementing TTP itself as the annual process to demonstrate an organization's ability to provide TTP performance audits to its own sites. The external comparability check will include:
    a) One or more sites chosen by EPA. The number of checks will be dependent on the size of the organization's network, but should be at least 1 per year for a small organization, and 2 per year for a large State organization (20 sites or more).
    b) All the gaseous pollutants that the organization proposes to audit by TTP.
    c) The TTP lab audit system and auditor(s), which the monitoring organization proposes to use for audits (if an organization has more than one system and/or auditor, EPA will choose which will be audited).
    d) Acceptance criteria of a 5 percent difference per point for the gaseous pollutants Ozone, CO, and SO_2 and NO_2. OAQAP may pursue a different acceptance level or statistic for precursor gas auditing , especially for the low level audit point.
6) Adequate number/type of TTP generation, analytical, and support equipment and materials, including back-ups.
7) Use of the EPA NPAP Access data base and EPA TTP spreadsheets, or data collection software that provides comparable data fields and reporting units to provide the minimum number of parameters in AQS transactions that need to be entered into AQS.
8) EPA access to all of the PQAO's TTP audit data in a time frame allowing relevant and adequate audit review and analysis.
9) Ability of EPA to audit TTP activities with appropriate notification.
10) If using Federal NPAP equipment, must agree to loan stipulations described in NPAP Implementation Plan.

The NPAP TTP Field Critical Activities and Acceptance Criteria for Mobile Lab Equipment, Standards and Personnel

1. Initial personnel training through NPAP TTP sanctioned course prior to any TTP implementation
2. Annual personnel recertification, either by:
    a. Attending an annual NPAP TTP certification course,
    b. Attending a regionally-implemented certification course implemented by an EPA regional or OAQPS certified trainer,
    c. Oversight during a Regional Office technical systems audit.
3. Equipment and Standards Certification: Performing and recording annual, quarterly, and audit day QC and QA acceptance checks, and system performance assessment procedures and evaluations. These include:
    a. Acceptable quarterly checks: TTP ozone analyzer (and calibrator, in Region 2) certification against Regional SRP, ozone line loss test, visual system cleanliness, leak, and manifold excess flow range check;
    b. On-site, pre-audit checks: zero air (ultrapure cylinder vs. continuous generator) check, all system component and flow path pressure and flow setting checks, ozone warm-up and acceptable performance parameter check, successful end-of-hose connection to station inlet of approved 50 or 150ft FEP Teflon hose, including check for evidence of kinks, pinholes, etc.;
    c. On-site audit checks: pre-audit two-point upscale CO calibration check and post-audit one-point upscale point for all blended gas audits. Analysis of complete stabilization of TTP ozone and CO generation output at every ozone and blended gas audit.
4. Independence of Audit Equipment and Standards: Use of performance audit generation, analysis, and support reference standard equipment and materials that are not used to set-up/calibrate, or check monthly performance parameters of the FRM sampler being audited. NPAP TTP analytical equipment "calibration" must also be performed with a second set of reference standards that are independent from the standards used in routine monitoring and NPAP TTP audits. This means the SLT must have at least two sets of Primary Standards.
5. NIST Traceability: Annual certification of all standards as NIST traceable using the EPA Protocol Gas certification procedures and spreadsheets - G1 or G2 - as appropriate. Documentation sent to OAQPS.
6. Maintenance Contamination Control: Quarterly monitor inspection and cleaning. NPAP TTP equipment must be clean. Flow path system disconnection should be avoided, but whenever necessary, very clean caps of the correct size and EPA acceptable material must be available and used on all potential openings carefully, ensuring that the seal is complete and air tight.
7. Annual multi-point audit instrument verification and/or calibration at the independent certification laboratory**.**
9. Archive paper and/or electronic media copies of TTP lab certification comparisons, audit results and supporting documentation for as long as it takes all sites in the monitoring network to be audited, during which time they may be audited, and then disposed of as EPA decides.
10. Adopts AQS format for reporting NPAP-like QA data to appropriate fields.
11. Monitoring Organization or National Program (OAQPS) loads data into AQS within AQS's schedule.
12. Monitoring Organization or National Program submits annual report of results to EPA in EPA specified format specified.

Critical Acceptance Criteria and Activities for Independent Certification Laboratories

A certification laboratory is required to ensure that the TTP mobile laboratory delivery system and standards produce audits of adequate quality. The laboratory's function is to test or check the TTP delivery systems and standards at a minimum annually.

1. Initial and subsequent training of certification lab personnel through Federal NPAP-TTP sanctioned course prior to certification lab implementation.
2. Certification lab, certification lab personnel, and standards independent of laboratory performing routine monitoring support.
3. Certification lab meets CFR-required temperature conditions for ambient air monitoring operation comparison activities.
4. Certification lab flow path interior surfaces and components in general, must comply with 40 CFR requirements for materials used that come in contact with reactive gases, including ozone, NO, NO_2, and SO_2.
5. Certification Lab must meet NPAP TTP Lab QC and QA acceptance activities and criteria as described in NPAP TTP SOPs and, for each comparison, include:
    a. Successful visual inspection of the entire flow path of the TTP generation and verification system, including the manifold delivery system;
    b. The certification labs analyzers and standards must meet the acceptance criteria in the TTP SOPs;
    c. The pre-certification zero air response of the certification laboratory's CO analyzer should be no greater than ± 0.1 ppm;
    d. Excess manifold flow of 0.3-0.4 LPM (on rotameter or equivalent);
    e. Output of delivery hose above but near ambient pressure; attach to outside/external inlet; upon connection to certification lab inlet, vent line end pressure should not be negative, but at least slightly positive;
    f. If using a TECO 49C-PS, determine, for initial analyzer performance check, the absolute value of both channels, not just the ratio. The difference of the absolute photon count of the 2 channels should not be much greater than 200;
    g. For blended gas certification comparisons configuration control must include the use of 316 stainless steel, preferably 1/8"OD, and not FEP Teflon;
    h. TTP blended gas certification comparisons for NO_2 must provide for a converter efficiency check. This enables determination of compliance with the CFR's requirement for minimum acceptable CE (>95%).
6. Quarterly quality control/assurance activities and acceptance criteria for ozone standard analyzers.
    a. Primary ozone standard analyzer should be certified against the/a Regional NIST Standard Reference Photometer in any quarter of the year in which TTP ozone (and/or NO_2) audits are planned. Acceptable results are a difference in slope of < 3%, and in the intercept of < 3 ppb.
    b. Standard certification data, are added by the TTP certification comparison operator into the EPA TTP Gaseous Audit EXCEL workbook (or equivalent certification comparison documentation system).
7. Annual Quality Control /Assurance TTP System Standard Certification Laboratory Requirement

a. NIST Traceability: Annual certification of all standards as NIST traceable, using the EPA Protocol Gas certification procedures and spreadsheets - G1 or G2 - as appropriate. Documentation sent to OAQPS.

Note: Related attachment from NPAP TTP Implementation Plan,

Monitoring Organization Use of National NPAP Equipment (Excerpt from NPAP Implementation Plan)

6.1.2.4 Monitoring Organization Use of Equipment -

There are many individual circumstances associated with the TTP in each Region. These circumstances are based on many different factors and variables that are specific to the particular Region, State, or local agency. As a result, specifics of a loan arrangement will have to be worked out between each Region and State or local monitoring agency. EPA in RTP will not be able to identify one loan requirement procedure that will accommodate each agency's needs and priorities for doing NPAP TTP audits. However, because the logistics and timing are critical for the federally-implemented program, as well as any other potential users, it is important that formal agreements on the use of the equipment are in place that will cover the majority of issues that may arise with the loaning of equipment.

The main considerations for lending one of the current 6 Regional mobile NPAP TTP laboratories to a State or local ambient air monitoring organization are:

1) The arrangement must allow the federally-implemented NPAP schedule to take priority.
2) The equipment must be returned in the same condition in which it was received.
3) To minimize damage during transport, avoid taking equipment out of the mobile labs. If equipment must be taken out of a mobile lab, which EPA should pre-approve, do not use ground or air commercial freight shipping; arrange safe and equipment protective transport between Regional and State or local transport vehicles and personnel; for case-based versions, use the cases.
4) If a borrowing organization damages a part or all of the mobile lab, they must replace the lab or damaged item, and notify the Region and the next State or local agency in line to use the mobile lab immediately.
5) If a borrowing organization uses a critical material, such as zero air scrubbing ingredients or one of the required compressed gas standard cylinder, to a point at or below the level EPA considers necessary for use by the next organization, the borrowing organization must contribute to the replacement of the item. The borrowing organization must notify the Region and the next State or local agency in line to use the mobile lab. EPA will be responsible for the review and acceptance of audit gas standards prior to transfer to the next user organization. Negotiations for the sharing of the costs for consumables can take place at the beginning of the grant season so that equitable cost contributions among lenders can occur. Note: There should be no use in the field below 400 psig to allow for post-audit checking of the remainder, for all of the criteria pollutant gases contained. To use in the field, the cylinder needs to contain 400 psig plus an excess over 400 of the amount estimated by EPA to be needed by the next using organization.
6) Sufficient resources must be available to the monitoring organization to provide any

replacements that become necessary; a documented statement must be provided to that effect from the agency before a loan is allowed.

7) The personnel provided by the organization to operate the lab must be trained and certified through the EPA training course described in Section 9 of the TTP Implementation Plan.
8) To use an EPA trailer, before being provided with the trailer. The proposing organization must demonstrate that they have the proper tow vehicle, hitch, anti–sway apparatus, and personnel with the necessary tow vehicle–trailer training and experience. These details are addressed in a document already on AMTIC at the NPAP website.
9) Procedures for identifying responsibility should be developed and implemented. For example, before receiving and before returning of a TTP mobile lab trailer, the borrower and receiver, respectively, should arrange to pull the trailer, and operate the TTP equipment inside, before turning over to the next organization. As soon as one pulls the trailer, obvious problems can be perceived. So the test that will show problems should be completed before turnover of responsibility, for the benefit of giver and receiver. A form should be developed and provided, similar to the form used for car rentals, documenting the acceptance of the transferred inventory and responsibility of the receiving organization personnel, and specifically addressing the issue of self insurance, and acceptance of responsibility for the costs of damage or destruction.