



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
RESEARCH TRIANGLE PARK, NC 27711

AUG 10 2010

OFFICE OF
AIR QUALITY PLANNING
AND STANDARDS

MEMORANDUM

SUBJECT: National Performance Audit Program, PM_{2.5} and Pb Performance Evaluation Program Implementation Decision Memorandum for Calendar Year (CY) 2011

FROM: Richard A. Wayland, Director *Richard A. Wayland*
Air Quality Assessment Division (C304-02)

TO: Air Division Directors

This is notification to the Air Division Directors concerning the implementation of the PM_{2.5} Performance Evaluation Program (PM_{2.5}-PEP), the Pb Performance Evaluation Program (Pb-PEP), and the National Performance Audit Program (NPAP). This memorandum is our annual follow-up to provide monitoring organizations time to make an informed decision whether to implement these performance evaluations or to approve a re-direction of State and Tribal Assistance Grant (STAG) to EPA. If re-direction is chosen, EPA will implement these audit activities as associated program support.

There are two options for satisfying this requirement: self-implementation of adequate and independent audits or EPA-implementation of PM_{2.5}-PEP, Pb-PEP, and/or NPAP using STAG grant funds. We request that each monitoring organization under your jurisdiction decide by August 30, 2010, for the following CY-2011 implementation:

- whether they will implement the PM_{2.5}-PEP themselves,
- whether they will implement the Pb-PEP themselves, and
- whether they will implement the NPAP themselves.

A "no" to any answer will indicate that the monitoring organization, for CY-2011, approves the re-direction of FY-2011 STAG funds to EPA for Federal implementation for the program marked "no." Attachment 1 provides a little more background on the programs and their costs. Attachment 2 provides the information we would like to obtain from each monitoring organization. One thing to note is a change in the cost structure in Attachment 1. Since these programs became STAG-funded, the per-site audit costs have remained fairly stable. Last year, the program leads started to experience problems funding the programs at the current allocation levels. The Ambient Air Monitoring Group Program Leads set up meetings with their

counterparts in each EPA Region to develop reasonable cost estimates based on the logistics and needs within the Region. In addition, our previous program estimates did not include depreciation costs of the audit equipment and fixed costs occurring at the Office of Air Quality Planning and Standards (OAQPS) for shipping, training, data handling, document revisions, and assessments. These costs are now included in each regional cost estimate and will help us adequately maintain the implementation of the programs.

NOTE: As part of the grant allocation process, OAQPS will propose that STAG funds be re-directed to OAQPS for all monitoring organizations that, for the current year, are not implementing the PEP or NPAP programs, even for those organizations declaring their intent to perform the work by August 30, 2010. If the monitoring organization demonstrates its capability to implement the PM_{2.5}-PEP, Pb-PEP, and NPAP to the EPA Region by October 1, 2010, the re-directed funds will be distributed back to the monitoring organization. This process will ensure that the PEP and NPAP programs will be federally implemented for those organizations planning on implementing the PEP and NPAP but, for some reason, have encountered implementation delays.

If you have any questions on the PEP or NPAP Programs, please contact Dennis Crumpler, PEP coordinator (919-541-0871), or Mark Shanis, NPAP coordinator (919-541-1323).

Attachments

Attachment 1

Background

The PM_{2.5}-PEP, Pb-PEP, and NPAP are performance evaluations, which are a type of audit where quantitative data are collected independently in order to evaluate the proficiency of an analyst, monitoring instrument, or laboratory. The programs:

- Allow one to determine data comparability and usability across sites, networks, instruments, and laboratories.
- Provide a level of confidence that monitoring systems are operating within an acceptable level of data quality so data users can make decisions with acceptable levels of certainty.
- Verify the precision and bias estimates reported by the monitoring organizations.
- Assure the public of non-biased assessments of data quality.
- Provide a quantitative mechanism for EPA to defend the quality of data.
- Provide information to monitoring organizations on how they compare with the rest of the nation, in relation to the acceptance limits, and to assist in corrective actions and/or data improvements.

PM_{2.5}-PEP Definitions of Adequate and Independent

PM_{2.5}-PEP definitions of adequate and independent, and the consequential implementation requirements, were provided in a memorandum dated January 8, 2007, from Phil Lorang sent to the Regional Air Program Managers for Ambient Monitoring and Air Monitoring Quality Assurance Contacts. The attachment that provided detailed guidance for determining the independence and adequacy of monitoring organization programs proposing to assume their PM_{2.5}-PEP responsibilities can be found on AMTIC¹. The following major elements are summarized below.

Adequate - Adequate for the PM_{2.5}-PEP is described in 40 CFR Part 58 Appendix A Section 3.2.7.

Primary quality assurance organizations (PQAOs) with 5 or less PM_{2.5} monitoring sites are required to have 5 valid audits per year distributed across the 4 quarters; PQAOs with greater than 5 sites would be required to have 8 valid audits per year distributed across the 4 quarters. EPA requires:

- 100 percent completeness (meaning whatever it takes to get 5 or 8 valid samples).
- All samplers subject to an audit within 6 years.

¹ <http://www.epa.gov/ttn/amtic/pmpep.html> posted 7/25/08

Independent - The following definition comes directly from the 1998 PEP Implementation Plan, found on AMTIC at <http://www.epa.gov/ttn/amtic/pmpep.html>.

Independent assessment - *An assessment performed by a qualified individual, group, or organization that is not part of the organization directly performing and accountable for the work being assessed. This auditing organization must not be involved with the generation of the routine ambient air monitoring data. An organization can conduct the PEP if it can meet the above definition and has a management 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 a 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 auditing organizations are also asked to consider participating in the centralized field and laboratory standards certification process.*

Comparable - 40 CFR Part 58 Appendix A Section 3.2.7 makes reference to the fact that the monitoring organizations are responsible for performing the evaluations "...under the PEP or a comparable program." We interpret this to mean that any PEP program that is assumed by a state, local or Tribal monitoring organization will be run similarly to the Federal PEP, as set out in the attachment, and will periodically be subject to performance evaluations with the Federal PEP conducted within its respective EPA Region.

Pb-PEP Definitions of Adequate and Independent

Pb-PEP definitions of adequate and independent are very similar to the PM_{2.5}-PEP. The following major elements have not changed and are summarized below.

Adequate - Adequate for the Pb-PEP is described in 40 CFR Part 58 Appendix A Section 3.2.7.

PQAOs with 5 or less Pb monitoring sites are required to have 5 valid audits per year distributed across the 4 quarters; PQAOs with greater than 5 sites would be required to have 8 valid audits per year distributed across the 4 quarters. EPA requires:

- 100 percent completeness (meaning whatever it takes to get 5 or 8 valid samples).
- All samplers subject to an audit within 6 years.

More details on this criteria are found in the Pb-PEP Implementation Plan (Appendix A) and will eventually be posted on AMTIC as a separate PDF.

Independent - The following definition comes directly from the 2009 Pb-PEP Implementation Plan, found on AMTIC.

Independent assessment - An assessment performed by a qualified individual, group, or organization that is not part of the organization directly performing and accountable for the work being assessed. This auditing organization must not be involved with the generation of the routine ambient air monitoring data. An organization can conduct the Pb-PEP if it can meet this definition and has a management structure that, at a minimum, will allow for the separation of its routine sampling personnel from its auditing personnel by two levels of management, as illustrated below. In addition, the sample analysis of audit filters must be performed by a separate laboratory facility using separate laboratory equipment. Field and laboratory personnel would be required to meet the Pb-PEP audit field and laboratory training and certification requirements. The monitoring organizations will be required to participate in the centralized field and laboratory standards certification and comparison processes to establish comparability to federally implemented programs.

Comparable - 40 CFR Part 58 Appendix A Section 3.2.7 makes reference to the fact that the monitoring organizations are responsible for performing the evaluations "...under the PEP or a comparable program." We interpret this to mean that any Pb-PEP program that is assumed by a state, local, or Tribal monitoring organization will be run similarly to the Federal Pb-PEP, as set out in the attachment, and will periodically be subject to performance evaluations with the Federal Pb-PEP conducted within its respective EPA Region.

NPAP Definitions of Adequate and Independent

Adequate - The following is a definition of adequate for NPAP program implementation as promulgated by the new rule and as detailed in this and other posted NPAP implementation guidance documents:

- Performing audits at 20 percent of monitoring sites per year, and 100 percent in 5 years.
- Data submission to AQS.
- Development of a delivery system that will allow for the audit concentration gases to be introduced to the probe inlet where logistically feasible.
- Use of audit gases that are NIST-certified and validated at least once a year for CO, SO₂, and NO₂.
- Validation/certification with the EPA NPAP program through collocated auditing, at an acceptable number of sites each year. The comparison tests would have to be no greater than 5 percent different from the EPA NPAP results.
- Incorporation of NPAP in the monitoring organization's quality assurance project plan.

Independence - Independence is proposed in guidance using the PEP 1998 definition with minor wording revisions for NPAP as written below:

Independent assessment - An assessment performed by a qualified individual, group, or organization that is not part of the organization directly performing and accountable for the work being assessed. This auditing organization must not be involved with the generation of the routine ambient air monitoring data. An organization can conduct the NPAP if it can meet the definition and has a management structure that, at a minimum, will allow for the separation of its routine sampling personnel from its auditing personnel by two levels of management.

Program Costs

OAQPS consulted with each EPA Regional PEP/NPAP Program Lead to evaluate program costs. In the past, EPA used national estimates developed in the implementation plans to derive per site costs. Due to differences in labor rates and travel requirements in each Region, these cost estimates were not always equitable. In addition, the costs never included depreciation of equipment or included all of the fixed costs needed by OAQPS to keep the program operating. Some of the equipment in the PM_{2.5}-PEP program that was purchased in 1999 is in need of replacement. In 2011, the PM_{2.5}-PEP and Pb-PEP program will include a \$600 per sampler depreciation cost (10-year depreciation) and an OAQPS fixed cost of \$14,300 per Region¹. Both costs will then be distributed across the number of sites for auditing in each Region. For NPAP, the TTP depreciation costs will be \$5,000 and the OAQPS fixed costs will be \$1,600. Table 1 represents the per-audit costs associated with each program.

Table 1 Regional Per-Audit Cost Estimates

Region	NPAP	PM2.5 PEP	Pb PEP	Comments
1*	200	2663	2663	Fed Imp of NPAP
2*	200	2680	2680	Fed Imp of NPAP
3	2400	2,251	2,251	
4	1540	1875	1875	
5	1500	2300	2300	
6*	2458	2498	2498	
7*	1250	2300	2300	NPAP 50% Fed 50% ESAT
8	1250	2900	2900	NPAP 50% Fed 50% ESAT
9	3000	2200	2200	
10	2802	3022	3022	

NPAP costs for Regions 1, 2, 7, and 8 appear lower than other Regions because they are either completely implemented by EPA staff (Regions 1 and 2) or implemented by EPA Staff 50 percent of the time.

¹ Costs include training, data reporting, guidance and SOP revision/development, data quality assessment and reporting, data base development/maintenance, QC standard certifications, and sample shipping.

Attachment 2

PM_{2.5} Performance Evaluation Program (PEP) & National Performance Audit Program (NPAP) Reporting Organization Implementation Decision Form For Calendar Year 2011

EPA Region	State #	State Abbreviation	PQAO

PQAO Responsible Official	
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Number of PM _{2.5} SLAMS/PAMS/SPM Sites		Number of Gaseous SLAMS/PAMS/SPM Sites	
Number of Pb SLAMS/PAMS/SPM Sites			

PEP Question	(Yes or No) ³	NPAP Question	(Yes or No) ³
Do you plan to implement ¹ an adequate/independent PM _{2.5} PEP in 2011? ²		Do you plan to implement ¹ an adequate/independent NPAP in 2011? ²	

Pb-PEP Question	(Yes or No) ³
Do you plan to implement ¹ an adequate/independent Pb-PEP in 2011? ²	

1. This means the reporting organization could implement their own adequate/independent program or participate in some other state or local or consortium run adequate/independent program.

2. Regions must approve capability by October 1, 2010.

3. A "no" to either answer will indicate that the monitoring organization, for CY-11, approves re-direction of FY-11 STAG funds to EPA for Federal implementation.