

Ambient Air Monitoring Updates

A large, faint watermark of the United States Environmental Protection Agency (EPA) logo is centered in the background. The logo features a stylized flower with a sun-like center, surrounded by the text "UNITED STATES ENVIRONMENTAL PROTECTION AGENCY".

Robert Judge
Air Monitoring Coordinator
EPA- Region 1

Maine Air Quality Monitoring Committee
Augusta, Maine – March 26, 2014



Outline of Today's Presentation

- Review of monitoring issues
 - Ambient Monitoring: Importance of Quality Assurance
 - Continuous PM_{2.5} FEM “assessments”
 - Near road monitoring
 - Clarifications to 40 CFR Part 58 and Appendix A
 - NAAQS Updates



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Recent Headlines

- **Louisville air monitoring fails state audit**

<http://www.whas11.com/news/local/Louisville-air-monitoring-fails-state-audit-218860081.html>

- **Bad news for Louisville: Air monitoring fails state audit; agency to undergo review - Mayor orders full review on years of air monitoring**

<http://cleanairmiddletn.wordpress.com/2013/08/21/bad-news-for-louisville-air-monitoring-fails-state-audit-agency-to-undergo-review/>

- **EPA praised Louisville Metro Air Pollution Control District monitoring program less than two years ago**

<http://blogs.courier-journal.com/watchdogearth/2013/08/20/epa-praised-louisville-metro-air-pollution-control-district-monitoring-program-less-than-two-years-ago/>



First Line of Data Quality Defense

- QA Project Plans need to be submitted, reviewed and approved (EPA Requirement)
 - Tracking information posted on AMTIC - <https://aqs.epa.gov/aqsweb/codes/data/QAPP.html>
 - Region 1 policy that States provide **annual updates by November 1** of each year to ensure QAPPs remain “current and accurate.”
- Participate in the required technical systems audits (TSAs) every three years
 - EPA findings and **follow up on corrective actions**
- Review the current consolidation of monitoring organizations into primary quality assurance organizations (PQAO)
 - Some consolidations may not be appropriate from a data quality or procedural standpoint
- Get involved in QA Workgroup Community
 - Regions and States need to have motivated and involved QA leads.
 - Participate in periodic calls, training sessions, and webinars
 - Make sure you are reading the QA EYE newsletter for up to date information; keep lines of communication open to head off problems
- Staff need to perform regular data quality and completeness assessments
 - QA data of little value if nobody looks at it!
 - Many problems can be caught early
 - Tools are available; AQS P and A reports – and AMP-255, AMP-600, box and whisker plots, etc.





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Continuous PM_{2.5} FEM “assessments” overview:

PM NAAQS final rule {40 CFR § 58.11(e)}
allows certain PM_{2.5} continuous FEM data to
be excluded from comparison to the
NAAQS if...

1. Performance criteria are not met when
assessed with collocated FRM(s);
combination of multiplicative bias (slope) and additive bias
(intercept)
2. Monitoring agency requests exclusion of
data; **and**
3. EPA Regional Office approves exclusion of
data.

**Note- all PM_{2.5} continuous FEM data are to be submitted
under parameter code 88101, unless approved to be
excluded by EPA Regional office**



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
RESEARCH TRIANGLE PARK, NC 27711

April 20, 2013

OFFICE OF
AIR QUALITY PLANNING
AND STANDARDS

MEMORANDUM

SUBJECT: Update on Use of PM_{2.5} Continuous FEMS

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

TO: Regional Air Division Directors

Enclosed find a document titled Instructions and Template for Requesting that data from PM_{2.5} Continuous FEMS are not compared to the NAAQS. Please pass along this email and attached file to your staff responsible for working with monitoring agencies on their annual monitoring network plans and/or PM_{2.5} continuous FEMS. Also, feel free to have your staff forward this information to monitoring agencies who may be interested in this process.

The file provides details and a template associated with the recently finalized PM NAAQS rule change (78 FR 3086) allowing monitoring agencies to request setting aside PM_{2.5} continuous FEM data under certain conditions. This information will be covered with Regional Office Technical staff on this month's Regional Monitoring call as well as a planned technical call with States later this month. For any questions, please contact Tim Hanley in the Ambient Air Monitoring Group of my division. Tim may be reached by phone at (919) 541-4417 or by email at hanley.tim@epa.gov.

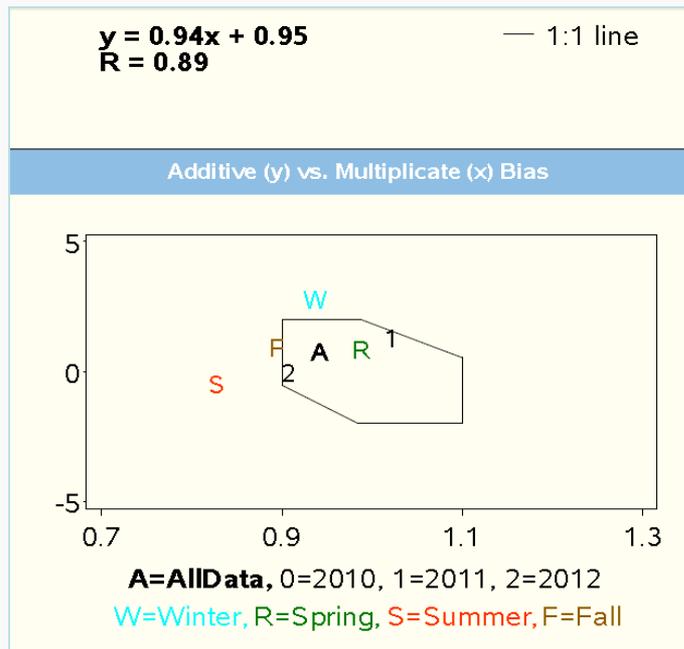
Attachment



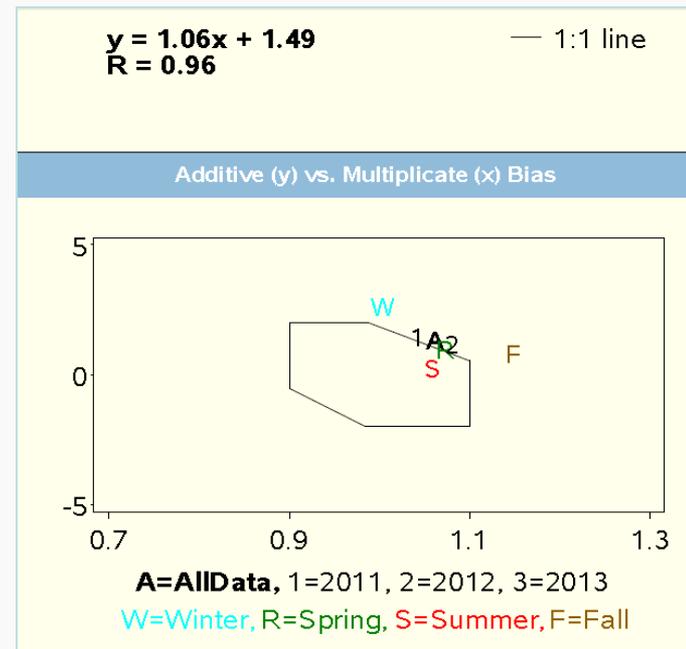
Comparability Criteria

- See details in § 58.11(e); references performance criteria from Table C-4 of Part 53.
- Bottom line is whether the collocated FRM/continuous FEM data set from the last 36 months meets or does not meet the bias requirement.
- Use one page assessment tool, excel spreadsheets (both on AMTIC), or your own assessment.

Example that meets Performance Criteria



Example that does not meet Performance



A = All Data



Repeat from earlier slide

- ***Note- all $PM_{2.5}$ continuous FEM data are to be submitted under parameter code 88101, unless approved to be excluded by EPA Regional office***



EPA Regional Office Approval and next steps...

- EPA Regional Office approval - can occur as part of the annual monitoring network plan or separately, if appropriate. Maine did not request that any PM_{2.5} continuous FEM monitors be excluded from comparison to the NAAQS. (Data from FEM BAMs will be used. The non- FEM TEOM data will not.)
- AQS - Once approved to be excluded, the monitoring agency should move data to the appropriate parameter code(s) and populate other AQS information appropriately.
 - Monitor Type and Primary Monitor Period
 - If applicable, use FEM method codes in parameter codes 88501 and 88502 (i.e., not the pre-FEM method codes)
 - **Included monitors (88101) should have primary monitor and co-lo identified.**
- Future Annual Monitoring Network Plans should reflect the status of how data from PM_{2.5} continuous FEMs are utilized.



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NO₂ rule regarding the deployment schedule for near road monitors

- Plans for near road NO₂ monitoring are required in the annual network plan due 6 months before the relevant date below (rule signed March 7, 2013).
 - One monitor in all CBSA's > 1M (52 sites): Jan 1, 2014
 - A second monitor in CBSA's > 2.5M or AADT > 250K (23 sites): Jan 1, 2015*
 - One monitor in CBSA's > 500K (51 sites): Jan 1, 2017
- Regional Administrators have authority to approve NO₂ plans (rather than the Administrator, so would be consistent with other NAAQS pollutants).

**For those areas which have already been funded for this monitoring, we encourage continued progress toward deployment of monitors.*





CO NAAQS FRN

- On August 12, 2011, EPA finalized a rule to retain the existing NAAQS for CO. (Published August 31, 2011, 76 FR 54294.)
- EPA is requiring CO monitors to be co-located with “near-road” NO₂ monitors in urban areas having populations of 1 million or more.
 - EPA is specifying that monitors required in CBSAs of 2.5 million or more persons are to be operational by January 1, 2015.
 - Those monitors required in CBSAs having 1 million or more persons are required to be operational by January 1, 2017.





PM_{2.5} NAAQS FRN



- EPA finalized rule on December 14, 2012.
Published on January 15, 2013 (78 FR 3086)
- EPA is requiring near-road PM_{2.5} monitoring in areas with population of 1 million or more.
 - EPA is specifying that monitors required in CBSAs of 2.5 million or more persons are to be operational by January 1, 2015.
 - Those monitors required in CBSAs having 1 million or more persons are required to be operational by January 1, 2017.



Near road Monitoring requirements in New England – NO₂, CO, and PM_{2.5}

CBSA	Near Road NO₂ Monitor(s) Schedule	Near Road CO monitor Schedule	Near Road PM_{2.5} monitor Schedule
Bridgeport, CT	Jan. 1, 2017	Not required	Not required
Hartford, CT	Jan. 1, 2014	Jan. 1, 2017	Jan. 1, 2017
New Haven, CT	Jan. 1, 2017	Not required	Not required
Boston, MA/NH	Jan. 1, 2014 Jan. 1, 2015 (2nd)	Jan. 1, 2015 (1 site)	Jan. 1, 2015 (1 site)
Worcester, MA	Jan. 1, 2017	Not required	Not required
Springfield, MA	Jan. 1, 2017	Not required	Not required
Portland, ME	Jan. 1, 2017	Not required	Not required
Providence, RI/MA	Jan. 1, 2014	Jan. 1, 2017	Jan. 1, 2017

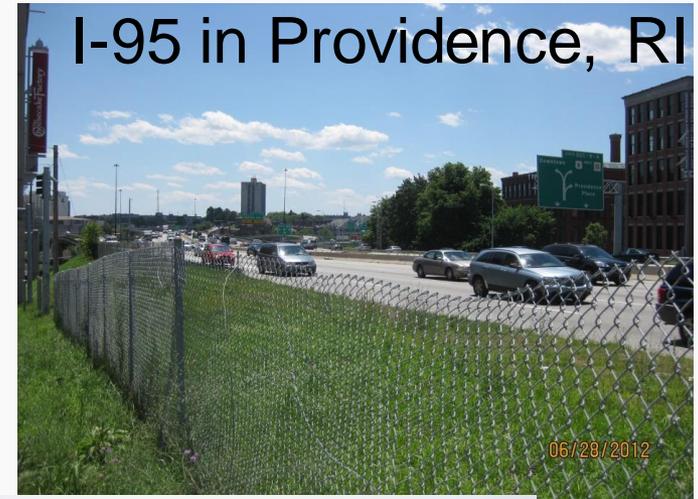
Near-road monitoring in New England

- Near road locations...

I-84 in Hartford, CT



I-95 in Providence, RI



I-93 in Boston, MA





Deering Oaks, State Street, Portland, ME

- Page 9 on Annual Network Plan, Nitrogen Oxides Network (and Page 39, relative to the Deering Oaks site) –

Maine DEP briefly discusses near roadway monitoring that is required under the NO₂ NAAQS rule promulgated on January 22, 2010 and revised March 14, 2013. At this time, EPA is working toward ensuring the near road sites with the highest probability for high NO₂ concentrations begin monitoring as soon as possible with smaller areas, such as Portland, operational by January 1, 2017. If Maine envisions that this existing Deering Oaks site will serve as the State's near road air monitoring location, it must demonstrate that it is located at the site of maximum expected nitrogen dioxide concentrations. In other areas throughout the country, these near road sites will be located much closer to major highways. *This site does not appear to meet the criteria to be a required near road monitor under our rule.*



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Clarifications to 40 CFR Part 58 and Appendix A

- For some time, States, Regions, and HQ have seen opportunities to clarify and streamline these portions of the CFR.
- Concept was formally vetted during presentations at Denver Air Monitoring Conference in May of 2012.
- EPA Headquarters and EPA Regions are now actively engaged in discussions...



CFR Structure

- Part 50 (NATIONAL PRIMARY AND SECONDARY AMBIENT AIR QUALITY STANDARDS)
- Part 53 (AMBIENT AIR MONITORING REFERENCE AND EQUIVALENT METHODS)
- Part 58 (AMBIENT AIR QUALITY SURVEILLANCE)
 - Annual Monitoring Network Plans, sampling frequency, network modification, data submittal, special purpose monitoring
 - Appendix A, Quality Assurance
 - Appendix C, Methods
 - Appendix D, Network Design
 - Appendix E, Probe Siting
 - Appendix G, AQI reporting

Example--Precision checks *should* be routine concentrations...



-We want your feedback to improve 40 CFR Part 58, and Appendix A.



**WE NEED
YOU!**

- We will invite your input!



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NAAQS: ANTICIPATED SCHEDULES

Current Schedule for Ongoing NAAQS Reviews

(as of September 2013)

MILESTONE	POLLUTANT						
	Ozone	Lead	NO ₂ Primary	SO ₂ Primary	NO ₂ /SO ₂ Secondary	CO	PM
NPR	Jan, 2015*	2014	Feb 2016	Feb 2017	May 2017	Summer 2017	TBD
NFR	Nov., 2015*	TBD	Nov 2016	Nov 2017	Feb 2018	Spring 2018	TBD

2010 SO₂ NAAQS Implementation



- Revised primary SO₂ standard in June 2010 (75 ppb/1-hr)
- Information on EPA's SO₂ area designations and implementation strategy
 - <http://www.epa.gov/airquality/sulfurdioxide/implement.html>
- EPA issued PSD permit modeling guidance documents applicable to the 1-hr SO₂ NAAQS on August 23, 2010 and March 1, 2011
 - http://www.epa.gov/scram001/so2_modeling_guidance.htm
- Technical assistance documents available at <http://www.epa.gov/airquality/sulfurdioxide/implement.html>
 - Source-Oriented Sulfur Dioxide (SO₂) Monitoring Technical Assistance Document
 - Sulfur Dioxide (SO₂) National Ambient Air Quality Standards Designations Modeling Technical Assistance Document

Sulfur Dioxide monitoring in Maine?

Sulfur Dioxide Network – Maine is not specifically obligated to site any additional SO₂ monitors under the final SO₂ NAAQS rule. On May 21, 2013, EPA released Technical Assistance Documents (TADs) describing in more detail modeling and monitoring guidance refining the agency's approach for implementing the SO₂ standard. One outcome of that process may be a greater reliance on SO₂ monitoring in some circumstances. As such, we have initiated a dialogue with you regarding whether there are any areas in Maine where additional SO₂ monitoring may have some merit.



Airport Monitoring and the Pb NAAQS

Airports to be Monitored for Pb under special Airport Study
(40 CFR Part 58, Appendix D, 4.5)

*Scheduled to begin sampling January, 2012

- Merrill Field, Anchorage, AK
- Pryor Field Regional, Limestone, AL
- Palo Alto Airport of Santa Clara County, Santa Clara CA
- McClellan-Palomar, San Diego, CA
- Reid-Hillview, Santa Clara, CA
- Gillespie Field, San Diego, CA
- San Carlos, San Mateo, CA
- **Nantucket Memorial, Nantucket, MA**
- Oakland County International, Oakland, MI
- Republic, Suffolk, NY
- Brookhaven, Suffolk, NY
- Stinson Municipal, Bexar, TX
- Northwest Regional, Denton, TX
- Harvey Field, Snohomish, WA
- Auburn Municipal, King, WA





Nantucket Airport (ACK)



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION I
NEW ENGLAND REGIONAL LABORATORY
OFFICE OF ENVIRONMENTAL MEASUREMENT & EVALUATION
11 TECHNOLOGY DRIVE
NORTH CHELMSFORD, MASSACHUSETTS 01863-2431

June 7, 2013

Christine Kirby, Director
Division of Air and Climate Programs, BWP
Massachusetts Department of Environmental Protection
One Winter Street
Boston, MA 02108

Dear Ms. Kirby:

I am writing this letter to thank you and your staff for a job well done performing the special lead monitoring study at Nantucket Airport (ACK). As you know, under 40 CFR Part 58, Appendix D, 4.5(iii), a one year ambient air monitoring study was required at 15 airports across the country.

Over the past 2 years, EPA worked closely with Massachusetts Department of Environmental Protection (DEP) to establish and operate the monitoring location to measure lead at ACK. I would like to specifically recognize Tom McGrath, Tony Pikul, Brad Webber and Kevin DuFour for their effort in making this special monitoring project a success. The first air monitoring sample from ACK was collected on February 3, 2012 and the last air sample was collected exactly one year later on February 3, 2013. On April 29, 2013, you wrote to EPA and certified that the ambient air lead data for the entire 12 month duration of this project has been submitted to EPA's Air Quality System (AQS) and is "...accurate to the best of your knowledge, taking into consideration the quality assurance findings" in accordance with 40 CFR 58.15.

We are happy to report that we have determined that, as a result of the data your staff collected and reported, this special study is now complete. The result from the one year study show that the levels of lead in the ambient air at ACK are well below the national ambient air quality standard for lead and less than the level where continued monitoring would be required under 40 CFR 58, Appendix D, 4.5(iii). As a result, this monitoring location can be terminated.





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Revised PAMS target list released

-Allows PAMS areas more flexibility in reporting PAMS compound which are not on priority list.

-Previously 57 PAMS target compounds.

-Now 34 priority and 29 optional compounds.

-Can begin as early as 2014 PAMS season.

-Questions?

Kevin Cavender- 919-541-2364

3/20/2014

U.S. Environ

The image shows a screenshot of a web browser displaying a memorandum from the United States Environmental Protection Agency. The browser address bar shows the URL: <http://www.epa.gov/ttn/amtic/files/ambient/pams/targetlist.pdf>. The document header includes the EPA logo, the text "UNITED STATES ENVIRONMENTAL PROTECTION AGENCY", and "RESEARCH TRIANGLE PARK, NC 27711". The date "NOV 20 2013" is stamped in the center. On the right side, it says "OFFICE OF AIR QUALITY PLANNING AND STANDARDS". The main body of the document is a memorandum with the following details:

- SUBJECT:** Revisions to the Photochemical Assessment Monitoring Stations Compound Target List
- FROM:** Kevin A. Cavender, PAMS Program Manager, Ambient Air Monitoring Group (C304-06) [Signature]
- THRU:** Lewis Weinstock, Leader, Ambient Air Monitoring Group (C304-06) [Signature]
- TO:** State and Local Monitoring Agencies

The purpose of this memorandum is to summarize changes being made to the Photochemical Assessment Monitoring Stations (PAMS) compound target list. Prior to this change, the PAMS target list contained 57 compounds. This memorandum divides the previous list into two categories – priority compounds and optional compounds. In addition, seven new compounds are being added to the target list as priority compounds. Table 1 contains the revised target list. The list contains 34 priority compounds and 29 optional compounds.

The revisions to the target list are a product of a collaborative effort by EPA and state and local monitoring agencies. A workgroup was formed to evaluate the target list comprised of EPA representatives (EPA-OAQPS, EPA-ORD, and EPA-Regions 1, 2, 3, 6, 8, 9) and state and local monitoring agencies (including Arizona, City of Denver, Georgia, LADCO, Maine, Maryland,

The Windows taskbar at the bottom shows the system clock as 5:01 PM on 3/14/2014.



National Ambient Air Monitoring Conference

SAVE THE DATE

**Atlanta Marriott Marquis
Atlanta, Georgia
August 11-14, 2014**



- The EPA in conjunction with the National Association of Clean Air Agencies (NACAA) is pleased to announce the National Ambient Air Monitoring Conference.
- **GET ESSENTIAL TRAINING ON AIR MONITORING TOPICS!**
Whether your previous air monitoring experience spans months, years, or decades, this conference will provide you with the skills and information to help prepare for the future challenges of air monitoring.
- **WHO SHOULD ATTEND?**
State, local, Tribal and international air quality staff involved with operating, planning, or managing air monitoring networks and reporting data to AQS, AIRNOW, and other users. We also encourage other stakeholders including health researchers, dispersion modelers, data analysts, and air quality policy staff to attend to gain additional perspectives on how air monitoring data are collected and utilized.



Questions?

- **Bob Judge**
 - **Judge.robert@EPA.GOV**
- 617-918-8387**

