



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Office of Air Quality Planning and Standards
Research Triangle Park, North Carolina 27711

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MEMORANDUM

SUBJECT: Guidelines for Granting Exemptions for Daily PM_{2.5} Monitoring

FROM: William F. Hunt, Jr., (*original signed by William F. Hunt, Jr.*)
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and Analysis Division (MD-14)

TO: Director, Office of Environmental Measurement and Evaluation, Region I
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The purpose of this memorandum is to provide initial guidance on PM_{2.5} sampling frequency, as contemplated in the preamble to the revised monitoring regulations that accompany the EPA's recently-promulgated particulate matter PM NAAQS, ¹ 62 FR 38764, 38770 (July 18, 1997).

Everyday sampling is an important component of early PM_{2.5} data collection and is critically needed to help understand PM_{2.5} temporal patterns and associated population exposure, and to provide more precise estimates of the 98th percentile of daily PM_{2.5} concentrations. According to the new PM monitoring regulations (40 CFR section 58.13 and part 58, Appendix D), daily sampling is required with an FRM or FEM for at least two core PM_{2.5} SLAMS sites in each MSA with populations greater than 500,000 and for one core PM_{2.5} SLAMS collocated in each PAMS area. For all other PM_{2.5} SLAMS, a 24-hour sample must be taken a minimum of every third day.

¹This document contains EPA guidance and, therefore, does not of itself establish or affect legal rights or obligations. It does not establish a binding norm and it is not finally determinative of the issues addressed. The preliminary interpretations contained herein will not become binding until the Agency takes final action through rulemaking applying this guidance in particular cases.

Only the minimum number of required core sites will be expected to sample everyday.² This will facilitate the deployment of the PM_{2.5} network by December 31, 1999, and will permit cost effective use of available resources. Less than everyday sampling frequency is also authorized by section 58.13, which allows: (1) a waiver of the everyday sampling schedule for core SLAMS to be granted by the Regional Administrator for 1 calendar year from the time a PM_{2.5} sequential sampler has been approved by EPA, and (2) core SLAMS in certain MSA's to operate with a reference or equivalent method on a 1 in 3-day schedule, provided that each is collocated with an acceptable continuous particulate matter analyzer that is correlated with the reference or equivalent method. Therefore, daily sampling with a PM_{2.5} FRM/FEM at core SLAMS will be expected through calendar year 1999 for the following monitoring sites and situations:

- * At one or more core SLAMS in each area with population greater than 1 million.
- * At one or more core SLAMS in each area with populations between 500,000 and 1 million, provided that one or more core SLAMS are not collocated with a correlated acceptable continuous PM_{2.5} analyzer (i.e., continuous analyzer collocated with an FRM operating once in 3 days).
- * In PAMS areas, at least one or more core sites collocated with a PAMS site during the PAMS monitoring season (June-August).

In addition, to ensure sufficient data for comparison to the 24-hour NAAQS, everyday sampling will also be expected from:

- * At one or more FRM/FEM sites in monitoring areas where violations of a controlling 24-hour PM_{2.5} NAAQS are anticipated, but only during seasons of the highest PM_{2.5} concentration.

All other requirements for daily sampling may be temporarily waived through December 31, 1999. However, to support future data collection needs and to provide the States and local agencies with the capability to collect daily data on an intermittent or seasonal basis, the deployment and use of sequential samplers is highly recommended.

²Section 58.23 says within 1 year after September 16, 1997, at least one required core PM_{2.5} SLAMS site in each MSA with population greater than 500,000, plus one site in each PAMS area must be in operation. Within 2 years after September 16, 1997 all other required SLAMS, including all required core SLAMS must be in operation. Consistent with data- collection requirements for PM NAAQS purposes, EPA interprets the term "year" to encompass a full calendar year.

During this waiver period of reduced 1999 sampling frequency, data produced at all core SLAMS satisfying requirements of part 58, Appendices A, C, and E may be used for making comparisons to the annual and 24-hr $PM_{2.5}$ NAAQS.

With these temporary waivers, all areas with populations greater than 500,000 will have at least one community-oriented sampler operating everyday, and PAMS areas may have an extra site sampling everyday during the PAMS season. Priority 1 monitoring areas (with populations greater than 1 million, or those anticipated to violate the 24-hr NAAQS) will measure daily $PM_{2.5}$ mass at community-oriented locations with an FRM/FEM. The other areas will either measure daily mass with an FRM/FEM or operate with at least one continuous analyzer collocated and quality assured with an FRM/FEM. The latter will complement the regulatory requirement for a continuous analyzer in all areas with populations greater than 1 million.

Although data from continuous analyzers, which are not designated as an FEM, cannot be used for making direct comparisons to the NAAQS, their data can provide useful information in a monitoring network to supplement daily mass from an FRM. This information may include characterization of short-term $PM_{2.5}$ concentrations and population exposure, and identification of potential emission sources or source regions. Furthermore, it will guide the need to increase sampling frequency in areas experiencing exceedances of the 24-hour NAAQS and will assist with future PSI reporting requirements. For all of these applications, direct measurements from continuous analyzers should be calibrated to the measurements from a $PM_{2.5}$ FRM, especially when used for public reporting.

When selecting sites for daily sampling, the States should consider research monitoring platforms in support of ongoing or planned health studies and coordinate with the responsible organizations. Current EPA study locations include: Baltimore, MD; Fresno, CA; Phoenix, AZ; and Chapel Hill, NC. Inter-agency health studies will be conducted in Boston, MA; Manhattan, and Bronx, NY; Chicago, IL; Dallas, TX; Tucson, AZ, and Seattle, WA.

The temporary waivers for everyday FRM/FEM sampling frequency will greatly reduce the filter handling and analytical burden, while still providing the data needed to evaluate short-term population exposure and to provide more precise data for making comparisons to the NAAQS. Retaining the requirement for everyday sampling at some sites will also ensure that the States will be familiar with the operation of sequential FRM/FEM samplers and filter handling issues associated with daily sampling.

In summary, a minimum number of monitoring sites, as described in this memo, are expected to sample everyday with an FRM/FEM at core SLAMS through calendar year 1999. Consistent with EPA's revised regulations, starting in January 1, 2000, the temporary waivers, as described above, would be rescinded. At that time, all $PM_{2.5}$ monitors would be expected to sample according to the operating schedule detailed in 40 CFR part 58, section 58.13. However, sites may be eligible for new or continued waivers which could be issued in accordance with future guidance (to be

developed during the coming year). The application and development of the future guidance will be based on an evaluation of actual PM_{2.5} sampling data and will be transmitted to the Regional Offices in the form of a revised sampling frequency policy memorandum.

For additional information, you may contact Neil Frank at (919) 541-5560.

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