

# **Status of the National Ambient Air Quality Standards for PM<sub>2.5</sub>: An Industry Perspective**

Lucinda Minton Langworthy  
Hunton & Williams, 1900 K Street, N.W., Washington D.C. 20006  
E-mail: [clangworthy@hunton.com](mailto:clangworthy@hunton.com); Telephone (202) 955-1500; Fax (202) 778-2201

## **Summary**

When EPA established the National Ambient Air Quality Standards (NAAQS) for PM<sub>2.5</sub> in 1997, the Administration recognized that scientific uncertainties remained about the health and welfare effects purportedly associated with ambient particulate matter. The President therefore determined that those standards would not be implemented until EPA had completed a review of them and had decided “whether to revise or maintain the standards.” At the same time, the President recognized the importance of adequate monitoring data characterizing ambient air quality, including data on the chemical composition of ambient particulate matter in various locations. This talk will focus on where we stand in resolving the scientific uncertainties and addressing the need for ambient PM<sub>2.5</sub> data.

With regard to the ambient monitoring network, many of the basic PM<sub>2.5</sub> monitors have been in place for some time, with the monitoring network essentially completed by the end of 1999. That does not mean, however, that all of the monitors are performing adequately to be used for attainment decisions. EPA’s regulations specify a data completeness requirement of “at least 75 percent of the scheduled sampling days for each quarter.” In 1999, only 24 percent of the sites satisfied that requirement. That percentage had increased to 60 by 2000, but that still means that close to half of the sites failed to satisfy the data completeness requirement that year. While 2001 data is now becoming available, it is important to realize that attainment determinations for the PM<sub>2.5</sub> NAAQS require three years of data. Thus, for many sites, it may not be possible to determine attainment status until the 2003 data are available, at the earliest.

The monitors to characterize the chemical composition of the ambient PM<sub>2.5</sub> have also been delayed in their deployment. In fact, while most of these monitors were deployed by the end last year, some are not scheduled to be in place until 2003. Unfortunately, questions have recently been raised about the adequacy of this data to characterize variability of PM<sub>2.5</sub> composition as a function of time and space. While correct characterization of the composition of the PM<sub>2.5</sub> is not necessary when identifying nonattainment areas, it is important when planning effective control strategies for those areas that are nonattainment. It would also be helpful to have accurate information on PM<sub>2.5</sub> compositions taken into account as EPA reviews the standards.

Perhaps it is fortunate, given the relatively slow pace at which ambient PM<sub>2.5</sub> is being characterized, that the review of the standards is also proceeding slowly. That slow pace will permit more of the recent information about health and welfare effects – as well as about ambient PM<sub>2.5</sub> – to be taken into account as EPA considers whether to “revise or maintain the standards.” As far as the issues that EPA must address in reviewing that the standards, it is important that the Agency focus on the uncertainties that were recognized when the standards were promulgated in 1997. The National Research Council in 1998

identified many key uncertainties in its report of “Research Priorities for Airborne Particulate Matter.” Among the issues the Council identified were (1) the quantitative relationship between outdoor measurements of air pollutants and actual human exposure, (2) the effects of ambient particulate matter as opposed to those of gaseous co-pollutants, (3) the physical and chemical characteristics of particulate matter associated with health risk, and (4) the biological mechanisms for health effects from ambient particulate matter.

Research since 1997 has addressed many of these uncertainties and EPA’s review of the NAAQS should include an objective look at what this new research says in terms of appropriate regulation. However, as the National Research Council recently recognized, many of the key uncertainties are not yet resolved. And those uncertainties still have implications for identification of NAAQS that are requisite to protect the public health and welfare. As a result, in reviewing the NAAQS, EPA must use risk assessment to understand how these uncertainties affect the possible benefits of alternative NAAQS. Such a comprehensive evaluation of all the data, in light of the remaining uncertainties is necessary to assure that the NAAQS will, indeed, provide public health benefits.