



pennsylvania

DEPARTMENT OF ENVIRONMENTAL PROTECTION

SECRETARY

December 2, 2011

U.S. Environmental Protection Agency
EPA Air and Radiation Docket and Information Center
Attention: Docket ID No. EPA-HQ-OAR-2010-1059
1301 Constitution Avenue, NW
Washington, DC 20460

Re: Guidance for 1-Hour SO₂ NAAQS SIP Submissions (Docket ID No. EPA-HQ-OAR-2010-1059)

To Whom It May Concern:

The Pennsylvania Department of Environmental Protection (DEP) appreciates the opportunity to submit comments on the U.S. Environmental Protection Agency's (EPA) draft *Guidance for 1-Hour SO₂ NAAQS SIP Submissions*, for which a notice of availability and comment period was published in the *Federal Register* on October 3, 2011 (76 *Fed. Reg.* 61,098). EPA extended the comment period on October 28, 2011, to December 2, 2011 (76 *Fed. Reg.* 66,925). In the draft guidance document, EPA provides guidance that would supplement existing regulations, guidance documents and the preamble of the 1-hour sulfur dioxide (SO₂) National Ambient Air Quality Standard (NAAQS) (75 *Fed. Reg.* 35,520, June 22, 2010). This nonbinding guidance document, which does not impose any binding or enforceable requirements, also addresses how EPA "expects states to demonstrate attainment, implementation, maintenance and enforcement" of the primary 1-hour SO₂ NAAQS. The draft document also provides guidance concerning State Implementation Plans (SIPs) including attainment demonstrations, infrastructure SIP revisions, redesignation requests, maintenance plans and modeling guidance.

EPA should not be requiring maintenance plans under Section 110(a) of the Clean Air Act (CAA) for unclassifiable areas. In this guidance and in the subsequent rulemaking, EPA should adopt a more measured approach to Section 110(a) SIP revisions that accounts for the large number of SO₂ sources in many states, a schedule that provides a reasonable timetable to ensure that resource-strapped states attain the 1-hour SO₂ standard by the required attainment date of 2017 and maintain it thereafter.

EPA Should Have Proposed and Finalized An Implementation Rule.

While the DEP is providing comments on this draft guidance for reasons of expediency, we believe that EPA should have proposed an implementation rule, preferably at the same time as it finalized the SO₂ NAAQS, rather than merely including issues of such great impact to states in the non-binding and unenforceable final preamble and a guidance document. On January 26, 2011, EPA denied petitions for reconsideration of the NAAQS rulemaking, in part, based on the fact that preamble language is not a final agency action, and therefore cannot be reconsidered (*Fed. Reg.* 4780, January 26, 2011). EPA has developed implementation rules in

the past for the 1997 ozone and fine particulate NAAQS, providing affected parties an opportunity to comment and EPA an opportunity to consider the effects of specific SIP issues. EPA has taken about 15 months from promulgation of the standard to publish this draft guidance. Whatever disclaimers about the nonbinding nature of guidance that EPA makes, the fact remains that it is EPA that approves SIP revisions, and guidance not only provides states with information on SIP development, but advises states what default criteria EPA will consider in approving SIP revisions. We appreciate that EPA now understands its procedural errors and is developing a rulemaking on these implementation issues, but regret the untimeliness of this process, as the rulemaking will most likely conclude within a year of when SIP revisions under Section 110(a) of the CAA for this NAAQS are required by statute to be submitted to EPA. Finalizing this guidance consistent with the CAA would be one small step in reducing uncertainty for states, industry and the general public.

EPA's Approach to Using Section 110(a) For Unclassified Areas is Untenable.

EPA has proposed an unprecedented hybrid dispersion modeling and ambient monitoring approach that would require states with "unclassifiable" areas to demonstrate compliance with the 1-hour SO₂ NAAQS. This novel approach would require SIP revisions for "unclassifiable" areas, just as for nonattainment areas, should include enforceable emissions limitations, timetables for compliance, appropriate testing/reporting to assure compliance, and include air quality modeling for SO₂ sources showing that the SIP-adopted emissions limits are consistent with attainment of the 1-hour NAAQS. EPA believes it is reasonable to expect states to demonstrate, at a minimum, that major SO₂ sources (≥ 100 tpy) are not causing or contributing to violations of the 1-hour SO₂ NAAQS. The DEP believes this hybrid approach for "unclassifiable" areas, which is an untenable position that is contrary to Section 110(a) of the CAA, should be abandoned. Moreover, this burdensome approach cannot be fully implemented in Pennsylvania prior to the statutorily prescribed June 2013 deadline for the submission of infrastructure SIP revisions. Failure to limit refined dispersion modeling to attainment demonstrations for 1-hour SO₂ nonattainment areas will result in numerous "unclassifiable" areas in Pennsylvania and other states across the country being designated as nonattainment areas based solely on conservative modeling results. In addition to requiring additional staff to implement the new 1-hour SO₂ primary standard, Commonwealth's SO₂ monitoring network would need to be expanded extensively. Furthermore, EPA has not fully considered the adverse economic impact of this hybrid modeling and monitoring approach that would result in nonattainment areas that would require SO₂ emission offsets for major new or modified stationary sources.

CAA Section 110(a)(1)-(2) SIP Submissions for Unclassifiable Areas.

One of the DEP's major concerns in this draft guidance (and in the preamble to the NAAQS) is EPA's interpretation of Section 110(a) to require maintenance plans for unclassifiable areas. Compounding our concern is that EPA completely changed its implementation strategy from the proposed to final NAAQS, switching from an emphasis on monitoring to an emphasis on dispersion modeling. While the use of modeling for SO₂ demonstrations is not unprecedented, a

requirement for modeled maintenance plans for unclassifiable areas certainly is. For past NAAQS promulgated by EPA, the agency has approved SIP revisions that document the authorities, capabilities and resources states have in place to meet each requirement of Section 110(a) and did not contain specific demonstrations of maintenance or attainment. Furthermore, nothing more than this general statewide SIP revision has ever been required for areas designated as attainment or unclassifiable areas. Maintenance plans, once an area attains the standard, are and should remain part of the voluntary redesignation process under Sections 107(d)(3) and 175A of the CAA. Section 192 (relating to attainment dates) clearly applies only to designated nonattainment areas.

Therefore, the DEP believes that a Section 110(a) SIP revision including a plan and timetable for attainment and maintenance of the SO₂ NAAQS in unclassifiable areas should suffice for an approvable Section 110(a) SIP revision, rather than inclusion of refined dispersion modeling results and enforceable source-specific emission limitations. The DEP's suggested approach would allow states to prioritize their SIP revision development efforts based on concerns such as impact on public health, and would avoid EPA turn the Section 110(a) SIP into a Section 192 SIP.

EPA Provides No Opportunity To Integrate Monitoring Into SIPs.

States should be given the time and opportunity to site monitors by which to demonstrate attainment in situations in which one large source is predominantly responsible for emissions in an area; for these areas, states could proceed to resolve an unclassifiable attainment status based on ambient air concentrations. Pennsylvania was concerned about costs of additional monitors based on the monitoring requirements in the proposed rule (December 8, 2009 at 74 *Fed. Reg.* 648100) and estimated that the cost of each monitoring site ranges from \$30,000 to \$40,000 with total capital costs to meet EPA's proposed requirements ranging between \$450,000 and \$600,000. However, targeted monitoring to resolve issues in certain areas may be necessary. EPA should also provide federal funding under CAA Section 103 for additional monitoring network expansion.

EPA Has Grossly Underestimated Time and Resources Needed for Modeling.

A specific area-by-area demonstration of maintenance for each unclassifiable area to include modeling and enforceable emission limitations is not only an incredible burden for state and local agencies, but is most likely impossible in the statutory time frame provided for Section 110(a) SIP revisions. If states do not complete their responsibilities, EPA will no doubt feel obligated to make a finding of failure to submit a SIP and then to promulgate a Federal Implementation Plan within two years, under Section 110(c) of the CAA. In such a case, is EPA prepared to conduct the same refined dispersion modeling and permit revisions it is asking of the states?

EPA has significantly underestimated the time that would be needed for submitting Section 110(a) SIPs as described in the draft guidance and the complexity of the challenges that

would face states, owners and operators of SO₂ sources. Should EPA make its designations consistent with Pennsylvania's June 2011 designation recommendations, DEP would need to submit maintenance plans for 63 counties by June 2013 because the counties would be designated as "unclassifiable" areas. Only a dozen of those counties had less than 500 tons per year of SO₂ according to the most recent inventory (2008); EPA's suggested non-modeling technical demonstration methodology for attainment could potentially be used in those areas. It is likely that the remaining 51 counties would have to be modeled for both base-case and attainment/maintenance. Pennsylvania has 74 sources with 2010 actual emissions greater than 100 tons per year, and, as EPA points out, would also have to consider smaller sources with characteristics such as short stacks, complex terrain or community impact as well.

EPA's timeline and approach will not allow quality SIPs to be developed.

- **States may not presently have accurate characterization of emissions and facility parameters.** Pennsylvania maintains a database for actual emissions and for many stack and facility parameters. We do not maintain a database that includes maximum allowable emissions and associated facility parameters or for property lines and building information, all parameters necessary to perform dispersion modeling. Therefore, determination of permitted or maximum allowable emissions would require an examination of each potentially affected source. Where 1-hour SO₂ emission limitations are not in permits, they would have to be calculated. EPA underestimates the resource burden this would place on states.
- **Complete and representative meteorological data is sparse.** While the draft EPA guidance and 40 CFR Part 51, Appendix W allows states to use five years of National Weather Service (NWS) data, in states like Pennsylvania with so much complex terrain, this data is likely to overestimate noncompliance significantly and thus require unnecessary controls and/or require revision of maximum allowable permit limits. NWS data, generally collected from a single level tower, does not include measurements of turbulence and multiple measurements of vertical temperature, wind direction, and wind speed, and so will be overly conservative in predicting NAAQS violations. Therefore, EPA should provide sufficient time and opportunity for owners and operators of large SO₂ sources to assess whether existing meteorological data is appropriate, and if they determine that it is not, they should have sufficient time to gather new site-specific meteorological data. The Section 110(a) timetable for SIP submittals does not provide time for the installation of new meteorological towers to collect the requisite data.
- **Implications of national and regional rulemakings are still uncertain.** Several new or proposed federal rules including the Transport Rule (Cross-State Air Pollution Rule), the boiler Maximum Achievable Technology Control (MACT) rule and the Mercury and Air Toxics Standard (MATS) rule will result in substantial reductions in SO₂ emissions. While the Transport Rule, as EPA points out, does not establish plant-specific emission limits, significant SO₂ emission reductions will be achieved in 2014 from the installation of controls including flue gas desulfurization systems. As promulgated, the boiler MACT

rule does not establish specific SO₂ emission limitations. However, the DEP agrees that these reductions should be creditable if the DEP establishes enforceable emission limits for affected sources.

States may not only have to provide enforceable limits for larger SO₂ sources if EPA finalizes its draft guidance as is, but may also have to come up with similar estimates of how previously mentioned rules affect sources of SO₂ to be modeled as background. Estimates of background SO₂ concentrations can make a significant difference in what source owners and operators may have to do to demonstrate attainment and maintenance of the standard. Importantly, if sources are modeled using the current background SO₂ concentrations, the site-specific SO₂ emission limitations necessary to demonstrate attainment and maintenance of the standard would be considerably lower than when modeled using background SO₂ concentrations that will be present after implementation of certain federal rules including the Transport Rule, Boiler MACT and MATS rules. Yet the owners and operators of potentially affected sources cannot make sound business decisions with all of the present uncertainties. To some extent, this is an issue of coordination and transparency (where possible) among states and regulated entities. A single regional background number, such as that developed by the Great Lakes states, may be problematic for Northeast areas with more complex terrain. The Section 110(a) timetable does not provide sufficient time for the state to determine the appropriate shared control responsibility among sources and implement enforceable measures.

- **Implementation of enforceable limitations takes time.** EPA's draft guidance envisions that states will have completed the modeling and permitting process or other mechanisms for any required control strategies (or revised permits to include lower emission limits) by the time of the Section 110(a) submittal deadline in June 2013. The permitting process alone for some sources can be extensive and may not be completed within the statutory timeframe for Section 110(a) SIP revisions.

Threshold for SO₂ Dispersion Modeling Creates Significant Modeling Burdens and Adds Little Environmental Benefit.

Currently in Pennsylvania, there are approximately 74 sources with actual 2010 SO₂ emissions over 100 tons. Four sources alone account for almost half of Pennsylvania's emissions. In fact, the 16 sources over 3,000 tons per year account for almost 90 percent of Pennsylvania's emissions. The DEP agrees with EPA that annual SO₂ emissions are not the only criteria for investigating which sources may cause or contribute to a violation of the 1-hour standard, and urges states to prioritize based on factors such as complex terrain and clustered facilities. Pennsylvania has both, particularly in western and northeastern Pennsylvania, so the modeling burden could be even greater than considering emissions quantities alone. Therefore, EPA should raise its suggested threshold for modeling from 100 to at least 500 tons per year of actual emissions. Doing so would not affect the ability of the Commonwealth to demonstrate attainment of the standard. For Pennsylvania, use of a 500 tpy SO₂ threshold would account for more than 98 percent of SO₂ emissions. States should also be given the opportunity to include an

explanation how emissions were considered. This consideration should include the amount of actual emissions that are projected to be emitted in the future once regional and national controls are implemented.

Whatever the threshold number, EPA has not yet adequately clarified how its proposed threshold for individual source modeling would be determined. On an October 12, 2011, call with the National Association of Clean Air Agencies, EPA staff advised that the threshold was intended to be based on actual emissions rather than allowable emissions, although the American Meteorological Society and EPA Regulatory Model (AERMOD) modeling itself would be conducted using maximum allowable emissions, as per Section 6.1 of Appendix A of the draft guidance. EPA confirmed this in a presentation for a webinar on October 19, 2011. The text of the final guidance should make this distinction absolutely clear.

Compounded Conservative Assumptions Can Produce False Indications of Nonattainment.

While the DEP does not disagree with the proposal that AERMOD is the preferred air quality model for determinations of attainment with the 1-hour SO₂ standard, the DEP has concerns about the compounding conservatism in the use of the model. Because EPA is relying on modeling in SIPs, the best possible data need to be used. Our concerns include:

1. AERMOD tends to perform best with more robust high quality meteorological data input, which most of Pennsylvania's larger sources lack. High quality source specific data would include at least one measurement of turbulence and multiple measurements of vertical temperature, wind direction, and wind speed. For many areas in Pennsylvania, AERMOD will significantly over-predict impacts using National Weather Service or even source-specific data without these measurements, prematurely committing sources to expensive control measures or inappropriately stringent permit limits. Allowing a Section 110(a) SIP revision to include plans and timetables rather than actual modeling would provide states the time to resolve these issues.
2. Using maximum allowable emissions for all sources when a multi-source analysis is being performed is overly conservative. Actual emissions should be allowed to be used for these sources because it's extremely unlikely that all sources will be operating at the same time at their maximum potential emissions. Importantly, regardless of the emission rates used for the modeling, the emission rate from each source will be adjusted accordingly, based upon the results of the dispersion modeling, to achieve and maintain the NAAQS.
3. Use of existing air quality monitoring to represent background concentrations can be overly conservative because most of these monitors have some impact from the facilities that are being explicitly modeled.
4. There is limited validation of AERMOD in areas of complex terrain. Only four of the 17 databases that EPA used for evaluation involve complex terrain. Additional studies

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would be helpful in ensuring that modeling and monitoring data that significantly differ can be avoided, particularly in cases involving well-controlled sources.

5. EPA needs to address the situation where modeled NAAQS violations remain after all facilities in a modeled area have applied the available control measures. EPA should consider an option of providing monitoring data in these circumstances, given the conservative requirements (using maximum allowable emissions) of the modeling.

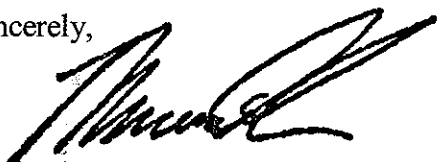
Dispersion modeling using guidelines developed for permitting may be appropriate for redesignating an unclassifiable area to attainment because of its conservative nature – that is, when an area is found to attain despite the conservative assumptions. However, when used in a nonattainment situation, compounding assumptions can result in inappropriate results.

Conclusion.

States have the primarily responsibility through State Implementation Plans to implement the NAAQS, but unless EPA revises its implementation strategy that shoehorns maintenance plans into Section 110(a), it could find itself with the unwelcome job of implementing the 1-hour SO₂ NAAQS without its state partners.

Thank you for the opportunity to comment on the draft guidance. Should you have questions or need additional information, please contact Vincent J. Brisini, Deputy Secretary for Waste, Air, Radiation and Remediation, by e-mail at vbrisini@pa.gov or by telephone at 717.772.2724, or Joyce E. Epps, Director of the Bureau of Air Quality, by e-mail at jeepps@pa.gov or by telephone at 717.787.9702.

Sincerely,



Michael L. Krancer
Secretary