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Energy and Environment Cabinet
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Leonard K. Peters
Secretary

February 8, 2010

Docket No. EPA-HQ-OAR-2007-0352
Environmental Protection Agency
Mail Code 6102T
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Dear Sir/Madam:

The Kentucky Division for Air Quality respectfully submits comments on U.S. EPA's proposed rule to revise the Sulfur Dioxide National Ambient Air Quality Standard, as published in the Federal Register on December 8, 2009.

Thank you for this opportunity to comment on the proposed regulation. If you have any questions or concerns regarding our comments, please contact me at (502)-564-3999.

Sincerely,

John S. Lyons
Director

JSL/sbm/bss
Enclosure

National Ambient Air Quality Standards for Sulfur Dioxide
December 8, 2009 Federal Register
74 FR 64810

On behalf of the Commonwealth of Kentucky, the Division for Air Quality respectfully submits the following comments in response to the December 8, 2009, Federal Register that proposes to revise the national ambient air quality standards (NAAQS) for sulfur dioxide (SO_2). In addition to the proposed revision to the SO_2 NAAQS, ambient air monitoring regulations are modified to require the development and operation of a two-tiered, source-oriented SO_2 monitoring network.

Network Design and Economic Burden

At present, 40 CFR 58, Appendix D, contains no minimum monitoring requirements for SO_2, other than the following: SO_2 must be monitored at NCore stations; the EPA Regional Administrator must approve removal of any existing monitors; and any ongoing monitoring must have at least one monitor sited to measure the maximum concentration of SO_2 in that area. Currently, the Division for Air Quality operates a network of nine SO_2 monitors statewide, each representing neighborhood or urban scales. Only one monitor out of nine in Kentucky's network is sited for maximum concentration. The data from these sites has historically been used to assess trends and population exposure. Moreover, the Division's current SO_2 network design also enhances our mercury deposition network. Five of the Division's SO_2 monitors are also collocated with continuous mercury analyzers and mercury wet deposition samplers for this purpose.

In the new SO_2 NAAQS proposal, Section III.B.2. *Network Design, Proposed Changes*, the EPA proposes a two-tier network designed to monitor SO_2 concentrations. As stated on page 64851, "The network would be wholly comprised of monitors sited at locations of expected maximum hourly concentrations." The first tier of the proposed network would include monitoring by means of a "population weighted emissions index", and the second tier would include monitoring based on the state-level contribution to the national SO_2 emissions inventory. In essence, this means the SO_2 network would be comprised of source-oriented monitors.

These changes to the network design requirements would significantly impact Kentucky's current monitoring network. Foremost, in order to meet the requirement for the entire SO_2 network to be sited in the area of maximum concentration, eight of the nine SO_2 monitors in the Division's network would most likely have to be relocated. Additionally, the "CBSA PWEI Calculation, 2009" document posted in the docket for this rule shows the Division would be required to operate seven SO_2 monitors based upon population exposure. Table Five in Section III.B.2.b. shows the state-level emissions triggered monitoring for each state; Kentucky would be required to operate 4 monitors for this purpose. Thus, as currently proposed, this would increase the size of the Division's SO_2 network in order to meet the minimum requirements, as well as completely change the monitoring objectives of Kentucky's network. The Division would be unable to add 11 additional SO_2 monitors to its network for source-oriented monitoring, while maintaining its SO_2 network currently designed to assess trends in

area-wide air quality, background concentrations as part of studies of population responses to exposures of SO_2, and correlation with mercury deposition.

Additionally, these changes to the network design criteria would actually impose substantial economic burden to the Division. To begin with, in order to achieve a source-oriented SO_2 network siting for maximum concentrations, the Division would most likely have to relocate approximately 90% of its existing network. In general, relocating air monitoring stations is an expensive venture, and requires an extensive amount of physical work, legal work (such as conducting land surveys and developing lease/rental agreements for land use), and employee time. However, to compound this issue, all of the Division's SO_2 monitors are currently located in air monitoring stations that also contain instruments sampling for other pollutants, primarily ozone, nitrogen dioxide, and particulates. In light of recent changes to siting requirements for other criteria pollutants, the Division would most likely have to break apart these air monitoring stations in order to have "stand alone" SO_2 sites. The siting criteria for a source-oriented SO_2 network does not readily agree with the monitoring objectives and siting criteria for ozone, nitrogen dioxide, and particulates. With that in mind, not only would the Division have to purchase additional SO_2 analyzers, but the Division would also have to purchase equipment to build new stations. Hence, the Division would have to purchase temperature-controlled shelters to house the instruments. The shelters alone incur ongoing utility costs, as well as costs for security and potential land-use rental fees. Plus, to properly operate the SO_2 monitors, as well as obtain the required hourly and 5-minute data, the following additional purchases would have to be made: data acquisition systems including computers & dataloggers, calibrators and zero-air sources, and gas cylinders. Altogether, the Division conservatively estimates a cost of $100,000 to merely establish one new site.

Unless the EPA offers substantial grant monies to operate the source-oriented network (preferably 103 dollars that require no match from the states), the Division will not be able to afford its successful implementation without measures that will negatively impact the remainder of the monitoring network. We will not sacrifice quality for quantity. Thus, we will reduce the number of monitors for other parameters to the fullest extent possible in order to offset the cost of the SO_2 network. Foremost, we will look at reducing the number of $PM_{2.5}$ samplers in the field, since the Division currently exceeds the minimum EPA requirements for that parameter. Second, the Division will most likely have to trim or completely discontinue its mercury network. Developing the Division's mercury network required many man-hours and physical labor by Division staff. However, the data obtained has been – and continues to be – valuable. But, the mercury monitors are the most sensitive instruments the Division operates in the field, as well as the most expensive, and they require a great amount of maintenance. Repair parts and consumables used in the mercury network are costly, and require a significant percentage of the Division's maintenance budget each year. Unfortunately, the dollars needed to support the mercury network's upkeep would have to be transferred to the SO_2 network. Third, the Division would closely scrutinize its ozone and nitrogen dioxide network, in comparison to the design criteria for those instruments, to see if any of those

monitors could be shutdown, in order to transfer the air monitoring shelter to an area needed for SO_2 monitoring.

In Section III.B.2.c., *Monitor placement and siting*, the proposal states the following: "Due to the variability of how, when, where, and to what degrees a source or group of sources can contribute to peak, ground-level SO_2 concentrations, EPA expects that State and local monitoring agencies will need to analyze all relevant information, including available ambient emissions data, and potentially use air quality modeling or saturation studies to select appropriate monitoring site locations." The proposal also mirrors this statement in Section III.B.2.a, in regard to determining the sites for the PWEI: "EPA believes that states will likely need to use some form of quantitative analysis, such as modeling, data analysis, or saturation studies to aid in determining when ground-level SO_2 maxima may occur in a given CBSA." The Division's Technical Services Branch is responsible for the design, implementation, and maintenance of the state's ambient air monitoring network. However, the Technical Services Branch has no employees who are experienced in air quality modeling. Asking Division Technical Services staff to model the state's emissions inventory to determine siting locations is beyond the scope of what the Branch is currently able to do. Additional employees with a knowledge of and experience in air quality modeling would have to be hired. Unfortunately, in light of Kentucky's current economic climate, a budget expansion to hire additional employees for this purpose is not feasible. Therefore, should the States be required to model emissions data to determine monitoring locations, the Division poses these questions: Can EPA provide assistance to the States in this capacity? Can EPA's expert modelers work with the States on this project, or perhaps do the modeling in totality? Can the EPA provide direct funding to the states specific to the hiring of individuals for this purpose?

In Section III.B.2.d, the EPA solicits comments on the resource implications for state and local agencies to determine the number and location of required monitors solely through modeling. As stated above, this would cause a huge burden to the Division, as the Technical Services Branch has no one in its employ experienced in modeling. The Division's Permit Review Branch does have one section – the Air Toxics Section – compromised of 4 employees who do modeling and risk assessment for the Division. However, that Section is completely saturated and cannot take on the additional workload of the Technical Services Branch.

Data Reporting and Quality Assurance

Section III.A. *Monitoring Methods* proposes to promulgate an FRM for SO_2 that would be an automated method based on ultraviolent fluorescence. The existing SO_2 FRM, based on the wet-chemical, manual method, is time consuming and involves the use of dangerous reagents, such as tetrachloromercurate, thus posing safety issues to operators. The Division concurs with this proposal.

Section III.C., *Data reporting*, proposes to retain the requirement for state and local agencies to report hourly SO_2 data to AQS within 90 days of the end of each calendar quarter. The Division concurs with this proposal.

EPA also proposes that state and local agencies report to AQS the maximum 5-minute block average of the twelve 5-minute block averages of SO_2 for each hour, in addition to the existing requirement to report the 1-hour average. The Division adamantly disagrees with this proposal. The data acquisition system used by the Kentucky Division for Air Quality does not have the capability to automatically report the maximum 5-minute block of data from an hourly concentration. Division personnel would have to manually determine that value and then manually enter that data into AQS. This would be a huge burden to the Division, and require an excessive amount of time for an employee(s). Similarly, the EPA's proposal to submit the maximum 5-minute value from a moving 5-minute average would also be something that our data acquisition cannot do. An employee would have to manually calculate the values and then manually submit the data to AQS. The only feasible option for the Division to submit 5-minute data to AQS would be to submit all twelve 5-minute blocks of data for each hour to AQS.

In regards to data validation, the 5-minute data would also have to be reviewed and quality assured prior to each AQS submittal. Validating hourly data is a time consuming process. For this SO_2 proposal, the Division would be increasing the size of its network, which means there would be more hourly data to validate each month. Then, having to validate 5-minute SO_2 data as well would double the workload of the Quality Assurance Section. The Division's Quality Assurance Section is currently short-staffed, so this would make for a tremendous burden for those employees. And, as stated earlier, it is highly unlikely that the Division will be able to request a budget expansion in order to hire any additional employees.

The Division concurs with the proposed changes to 40 CFR 58 Appendix A, Section 2.3.1.6.