

**Louisville Metro Air Pollution Control District
Preliminary Regulatory Impact Assessment**

Regulation 5.22

***Procedures for Determining the Maximum Ambient Concentration of
a Toxic Air Contaminant***

Purpose of the Draft Proposed Action:

The draft proposed amendments to Regulation 5.22 are designed to accomplish several purposes. First, the amendment to section 1.2 clarifies the average emission rate that may be used to determine the maximum ambient concentration of intermittent emissions. Second, the amendment to section 5.1.1 establishes AERMOD as the District's preferred dispersion model while limiting the use of ISC3 on a case-by-case basis with prior approval of the District. Third, the amendment to section 5.5 clarifies that AERMOD shall be run in the "regulatory default mode" as described in the User's Guide for the AMS/EPA REGULATORY MODEL – AERMOD, EPA-454/B-03-00, but still allows the use of non-regulatory modeling options with prior approval by the District. The remaining draft proposed changes are conforming number changes from other proposed regulatory changes.

Estimated Costs and Savings:

There are no costs or savings associated with the proposed action.

Feasibility of All Alternatives:

The current version of Regulation 5.20 requires the use of an average emission rate for intermittent emissions or 10% of the maximum hourly rate, whichever is more, to determine the maximum ambient concentration of the TAC. Because intermittent emissions are "those emissions that are not allowed to be emitted continuously for the entire length of time specified in Regulation 5.20," the requirement to use 10% of the maximum hourly rate, rather than the actual, lower average emission rate, overestimates the maximum ambient concentration of these TACs. For this reason, the District proposes in section 1.2 of Regulation 5.22 that the actual average emission rate be used for all intermittent emissions.

The District proposes that in section 5.1.1 that AERMOD be used as the primary model in Tier 4 modeling upon adoption of the proposed amendments since it is the most advanced EPA dispersion model. AERMOD is a best state-of-the-practice Gaussian plume dispersion model whose formulation is based on planetary boundary layer principles. See *Revision to the Guideline on Air Quality Models: Adoption of a Preferred General Purpose (Flat and Complex Terrain) Dispersion Model and Other Revisions*, 70 Fed. Reg. 68218 (Final Rule). EPA has determined

that AERMOD provides better characterization of plume dispersion than does ISC3 and therefore replaces the ISC3 model, applies to complex terrain, and incorporates a new downwash algorithm—PRIME. *Id.* Because AERMOD is the preferred air quality models for assessing criteria pollutants under the Clean Air Act, the District will still allow the use of ISC3 on a case-by-case basis with prior approval by the District. Additionally, a model included on the EPA list of Alternative Models (Case-by-Case) may also be used, provided that the use of the alternative model meets one of the three conditions for approval specified in 40 CFR Part 51 Appendix W 3.2.2(b) and prior approval is given by the District. Section 5.5, which specifies that AERMOD shall be run in “regulatory default mode,” provides necessary directions for AERMOD and includes the use of non-regulatory modeling options with prior approval by the District.

Comparison with Any Minimum or Uniform Standards:

There are no federal standards governing the District’s STAR program.

Report on Public Outreach Efforts:

This draft proposal to amend Regulation 5.22 is part of a package of proposed amendments to the STAR regulations that was released for informal external review on March 17, 2010, and sent to: all members of the 2009 STAR Advisory Group; all persons who have requested to be informed of proposed changes to STAR regulations; all persons who have requested to be notified of proposed changes to any District regulations; EPA Region 4; and the Kentucky Division for Air Quality. The District received written informal comments on this draft proposal and is responding to those in a separate Comment/Response document. The public will have an opportunity to comment at a meeting of the appropriate committee of the Air Pollution Control Board, during the formal public comment period, and at a public hearing prior to consideration by the full Board.