

## **Treatment of Data Influenced by Exceptional Events Flagging of PM<sub>2.5</sub> data collected in 2004-2006**

On October 17, 2006, the United States Environmental Protection Agency (EPA) revised the National Ambient Air Quality Standards for Fine Particulates (PM<sub>2.5</sub>). Part of the revision lowered the daily standard from 65µg/m<sup>3</sup> to 35µg/m<sup>3</sup>. It is EPA's intent to use 2004-2006 data to make preliminary designations for the new standard and to use 2005-2007 data for final designations.

As part of the data review and certification process, states and agencies typically perform a thorough review of all data that exceeds an ambient air quality standard. This review is conducted to insure the data are correct and that they were not influenced by an exceptional event. Because this review was conducted for 2004-2006 data using the 65 µg/m<sup>3</sup> standard, EPA allowed for a new review of the data using the more stringent 35µg/m<sup>3</sup> standard. In this new review, the Louisville Metro Air Pollution Control District identified 9 events for which there were sufficient evidence to warrant flagging. These reviews are being posted for public comment. They are:

- |    |                      |                     |
|----|----------------------|---------------------|
| 1) | July 4, 2004         | Fireworks           |
| 2) | July 21, 2004        | Wildland fire smoke |
| 3) | August 3-4, 2004     | Wildland fire smoke |
| 4) | July 3-4, 2005       | Fireworks           |
| 5) | September 8-13, 2005 | Wildland fire smoke |
| 6) | November 11-13, 2005 | Fire at Fort Knox   |
| 7) | July 3-4, 2006       | Fireworks           |
| 8) | July 18-20, 2006     | Wildland fire smoke |
| 9) | August 25-26, 2006   | Wildland fire smoke |

### ***What are fine particulates (PM<sub>2.5</sub>)?***

Fine particulates such as those found in smoke and haze, are 2.5 micrometers in diameter and smaller. These particles can be directly emitted from sources such as forest fires, or they can form when gases emitted from power plants, industries, and automobiles react in the air.

### ***What is an exceptional event?***

For ambient air quality measurements, an exceptional event is defined as an event that:

- 1) Affects air quality.
- 2) Is not reasonably controllable or preventable.
- 3) Is an event caused by human activity that is unlikely to recur at a particular location or is a natural event.

### ***What are some examples?***

- 1) Chemical Spills and Industrial Accidents
- 2) Structural Fires
- 3) Exceedances due to Transported Pollution
- 4) Terrorist Attack

- 5) Fireworks Displays
- 6) Natural Disasters and Associated Clean-Up Activities
- 7) Volcanic and Seismic Activities
- 8) High Wind Events
- 9) Wildland Fires
- 10) Prescribed Fires
- 11) Stratospheric Ozone Intrusions

***What is flagging of data?***

Ambient air quality data collected by the air monitors operated by the Louisville Metro Air Pollution District are submitted to EPA's Air Quality System, which is a database that contains data from all air monitoring programs in the United States. After the data are submitted into the database, the data may be flagged by adding a code to the end. Different codes represent different events. For example, the use of code E combined with NAT lets users know that the sample was influenced by wildland fire smoke.

***Why are the data flagged?***

Typically, exceptional events will cause ambient readings to be much higher than normal or expected for the area. The data let EPA and other users of the data know that the values reported are not the norm and they were influenced by an exceptional event.

***How does this affect the use of the data?***

Flagging helps scientists analyze the data and can help them better understand how exceptional events affect ambient air quality.

EPA also uses ambient air quality data to determine if an area is in attainment for a National Ambient Air Quality Standard. If an area is designated as non-attainment, restrictions are placed on the area and control measures will have to be put in place to bring the area back into attainment. The regulatory and planning process established by the Clean Air Act is not appropriate for dealing with natural and exceptional events. For example, natural events cannot be controlled by humans nor is it appropriate to attempt to develop regulations to control exceptional events. Therefore it would be inappropriate to place restrictions on an area were the attainment status was influenced by an exceptional event. If the data are flagged, EPA will review the documentation that contains the reason for the flag. If the EPA agrees with the documentation, it will add an additional flag, and the flagged data will not be used for regulatory purposes.

***How does this apply to me?***

By better understanding the data, scientists can make better decisions as to where the air pollution is coming from and what controls will have the best results in an area.

One of the primary uses of ambient air quality data is to notify the public as to the levels of pollution to which they are exposed. The Air Pollution Control District does this in a number of ways, such as the Air Quality Index obtained by calling (502) 574-3319, by the District's website at <http://services.louisvilleky.gov/MetroAirNet/AQI.aspx>, by providing the information to local news agencies, by posting the data on EPA and

National Weather Service websites, and by use of the TRIMARC signs. Flagged data are not excluded from the process, so measured pollutant levels regardless of their source will still be reported to the public. In addition, lowering of the daily standard from  $65\mu\text{g}/\text{m}^3$  to  $35\mu\text{g}/\text{m}^3$  will lower the level for which Air Quality Alerts are issued.