



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

OFFICE OF THE
REGIONAL ADMINISTRATOR

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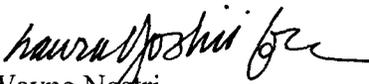
Mary D. Nichols, Chairman
California Environmental Protection Agency
Air Resources Board
P.O Box 2815
Sacramento, California 95812

Dear Ms Nichols:

We have received the Air Resources Board letter dated January 23, 2008 requesting that EPA flag under our Exceptional Events Rule a PM-10 exceedance which occurred on July 4, 2007 at the Bakersfield Golden State Highway monitoring site, located in the San Joaquin Valley (letter from Karen Magliano, Chief, Air Quality Data Branch, Planning and Technical Support Division, Air Resources Board to Sean Hogan, Manager, Technical Support Office, Air Division, US EPA Region 9). We have reviewed the documentation package and concur with flagging the July 4, 2007 measurement in Bakersfield as exceptional due to the presence of smoke from widespread celebration with fireworks. The Regional concurrence flag will be placed in EPA's AQS database.

Please feel free to have your staff contact Sean Hogan with any questions or comments regarding this information. His contact information is: hogan.sean@epa.gov and his phone number is (415) 972-3261.

Sincerely,


Wayne Nastri
Regional Administrator

cc: Linda Murchison, ARB, PTSD

ATTACHMENT

Review of the SJV flag request for PM-10 exceedance on July 4, 2007

On July 4, 2007, the Bakersfield Golden State Highway PM-10 monitoring station in the San Joaquin Valley recorded a 24-hour average PM-10 concentration of 172 $\mu\text{g}/\text{m}^3$. This concentration exceeds the level of the 24-hour PM-10 NAAQS, which is set at 150 $\mu\text{g}/\text{m}^3$. The State has requested that EPA flag this exceedance under the Agency's Exceptional Events Rule (EER) because the PM-10 concentration was affected by emissions from Independence Day fireworks displays in the Bakersfield area.

EPA's EER allows States to request the flagging of a concentration that exceeds the level of the NAAQS and to request its subsequent exclusion from regulatory consideration if the State can demonstrate that the concentration recorded was due primarily to emissions from firework displays, the fireworks display affected air quality, the emissions from the fireworks caused the exceedance, there would not have been an exceedance but for the fireworks, all procedural requirements of the EER are met and reasonable measures were taken to protect the public from the emissions. See 40 CFR 50.14(b)(2) and 51.930 and 72 FR 13560, 13577-78 (March 22, 2007).

The use of fireworks displays to celebrate the anniversary of the United States of America's adoption of the Declaration of Independence from Kingdom of Great Britain is a long held cultural tradition.

Public Notification

The San Joaquin Valley Unified Air Pollution Control District (District) prepared a demonstration that the 24-hour average PM-10 concentration of 172 $\mu\text{g}/\text{m}^3$ recorded at the Bakersfield Golden State Highway monitoring site was due to excessive PM emissions caused by a large scale fireworks display held at Bakersfield College as well emissions from numerous neighborhood scale fireworks displays. This documentation was posted on the District's website for review on December 6, 2007. On December 4, 2007, notices were placed in eight newspapers throughout the San Joaquin Valley Air Basin (SJVAB) informing the public of the availability of the District's demonstration and requesting that any comments on the demonstration be submitted to the District. Evidence of publication was included in the District's documentation package sent to EPA. The District did not receive any comments from public on its proposal to flag this data as exceptional. See EER section 50.14(c)(1).

Flagging of Data

The District has submitted the PM-10 data from this monitor to the EPA Air Quality System (AQS) Database and has placed the appropriate flags on the data indicating its belief that the data was affected by an exceptional event due to fireworks. The District informed EPA and the California Air Resources Board (ARB) of its intention to request that the data be flagged as exceptional on January 16, 2008. On

January 23, 2008 the ARB requested that EPA concur with the District flags. Letter from Karen Magliano, Chief, Air Quality Data Branch, Planning and Technical Support Division, California Air Resources Board to Sean Hogan, Chief, Technical Support Office, Air Division, US EPA Region 9. See EER section 50.14(c)(2).

Causal Connection

In order for EPA to concur with the State's request that the PM-10 concentration be flagged under the EER and subsequently excluded from regulatory consideration the District's documentation must show that there was a causal connection between the PM emissions from the firework displays and the increased PM-10 concentrations recorded at the monitor located at the Bakersfield Golden State Highway site. See EER section 50.14(a). PM-10 data is available from four monitoring locations that were operating in the San Joaquin Valley PM-10 nonattainment area (SJV) on July 4, 2007:¹ Tracy, Corcoran, Fresno First Street, and Bakersfield Golden State Highway. The data from the Fresno First Street automated PM-10 sampler cannot be compared with data from the other three monitors because the State invalidated data from hours 20 - 23 on July 4, 2007.

The monitors operating at Tracy, Corcoran and Bakersfield collected hourly data on July 4, 2007 and from this we can see a drastic increase in PM-10 concentrations at Corcoran and Bakersfield beginning between 8:00 and 9:00 pm Pacific Daylight Time (PDT) on July 4, 2007 and lasting until about 1:00 to 2:00 am PDT on July 5, 2007. The monitor at Tracy does not show a similar increase because there were no large public displays of fireworks due to the fact that the town of Tracy has a local ordinance that bans fireworks displays. From 12:00 pm PDT to about 8:00 pm PDT, hourly concentration data at all three sites were in the range of 25 to 50 $\mu\text{g}/\text{m}^3$. However, as stated above, at around 8:00 pm PDT there is a sharp increase in hourly PM-10 concentrations at Corcoran and Bakersfield which would coincide with the beginnings of the various fireworks displays in the SJV. Hourly concentrations at Bakersfield peaked between 10:00 pm and 12:00 am PDT with hourly concentrations greater than 900 $\mu\text{g}/\text{m}^3$. After midnight, hourly concentrations began to drop and by 6:00 am PDT on July 5, 2007 levels at Corcoran and Bakersfield were less than 100 $\mu\text{g}/\text{m}^3$ and were again comparable to those at Tracy. The 24-hour average PM-10 concentrations at Tracy, Corcoran and Bakersfield Golden State Highway for July 4, 2007 were 21 $\mu\text{g}/\text{m}^3$, 128 $\mu\text{g}/\text{m}^3$, and 172 $\mu\text{g}/\text{m}^3$ respectively.

Therefore, the timing of the increase in hourly PM-10 concentrations correlates well with the onset of fireworks usage on July 4, 2007. EPA believes that the District has

¹ There are two basic types of PM-10 samplers that State and Local air agencies use to collect PM-10 data, broadly known as manual and automated methods. Manual methods utilize filters which collect PM-10 from the atmosphere over a 24-hour period and which subsequently need to be weighed at a laboratory in order to calculate an average 24-hour concentration. Due to their labor intensive nature these manual samplers are generally operated less than everyday, on a schedule established by and according to guidance from EPA. Automated PM-10 methods produce continuous hourly data on a near real time basis, do not require the support of a laboratory, and can operate every day. July 4, 2007 was not a scheduled sampling day for manual PM-10 monitors.

shown the causal connection between the emissions from the fireworks displays and the increased PM-10 concentrations.

Concentration was in Excess of Normal Historical Fluctuations

The District's documentation includes a table that lists the 24-hour PM-10 concentrations at the four continuous PM-10 monitors operating in the SJV during the period July 2 through July 8, 2007.² This table shows 24-hour PM-10 concentrations at the Bakersfield-Golden State Highway monitoring site on July 2 and 3, 2007 at 46 and 53 $\mu\text{g}/\text{m}^3$ respectively, rising to 172 $\mu\text{g}/\text{m}^3$ on July 4, 2007 and then dropping to 87, 66, 47 and 31 $\mu\text{g}/\text{m}^3$ on July 5 through 8, 2007 respectively. As can be inferred from the "but for" discussion below, the 24-hour PM-10 concentration on July 4, 2007 would have been in this same range of concentrations if the PM-10 emissions from the various fireworks displays in the Bakersfield area had not taken place.

"But For" Test

In order for EPA to concur with the State's request to flag the PM-10 concentration and subsequently exclude it from regulatory consideration, the District's documentation must show that there would have been no exceedance "but for" the emissions from the fireworks display. See EER section 50.14(a). The State includes data from three sites that collect continuous PM-10 data and thus can show the temporal variation of PM-10 concentrations throughout the day on July 4, 2007. During the daytime, hourly concentrations at all three sites, Tracy, Corcoran, and Bakersfield Golden State Highway, are comparable, showing average hourly concentrations of 23 $\mu\text{g}/\text{m}^3$, 39 $\mu\text{g}/\text{m}^3$, and 43 $\mu\text{g}/\text{m}^3$ respectively. Between 8:00 and 9:00 pm PDT the hourly PM-10 concentration at Bakersfield went from 48 $\mu\text{g}/\text{m}^3$ to 471 $\mu\text{g}/\text{m}^3$ and between 9:00 and 10:00 pm PDT, the hourly concentration went from 471 $\mu\text{g}/\text{m}^3$ to 943 $\mu\text{g}/\text{m}^3$. Hourly concentrations below the level of the NAAQS (150 $\mu\text{g}/\text{m}^3$) were not again recorded until 2:00 am PDT July 5, 2007. In its documentation, the District identifies a large fireworks display at Bakersfield College (2 - 3 miles northeast of the monitoring site) and numerous local fireworks displays as the primary contributors to these increased levels. The fact that until 9:00 pm PDT, hourly concentrations were low and it was still daylight supports the District's claim that these firework emissions were the most likely cause.

In Tracy, which did not have any large scale firework displays and bans the use of fireworks by residents, the low hourly PM-10 concentrations recorded throughout the day continued into the nighttime hours. This would indicate that if there had been no fireworks used in Bakersfield the PM-10 hourly concentrations would not have increased in such a dramatic fashion at 9:00 pm PDT. Therefore the District has shown that the exceedance at Bakersfield Golden State Highway would not have occurred but for the emissions from the fireworks display.

² "Exceptional Event Documentation PM10 Fireworks Bakersfield, CA, July 4, 2007," Table 1. July 2 to 8, 2007 PM10 daily averages in $\mu\text{g}/\text{m}^3$ recorded by continuous samplers," San Joaquin Valley Unified Air Pollution Control District, January 16, 2008, page 9.

Reasonable Measures

Under 40 CFR 51.930, the District must show that it took reasonable measures to protect the public from the emissions created by the fireworks display. The District warned residents in the SJVAB of the possibly of adverse air quality impacts from fireworks in a news release dated July 3, 2007.

Conclusion

EPA believes that the fireworks displays in the Bakersfield area on July 4, 2007 were an exceptional event as defined in 40 CFR 50.1(j). EPA also believes that the State has provided sufficient documentation to demonstrate that the exceedance that occurred at the Bakersfield monitor on this day was caused by emissions from fireworks, that the concentration recorded on July 4, 2007 was outside the normal fluctuation of data recorded at this site and that but for the PM-10 emissions from the fireworks displays an exceedance of the PM-10 NAAQS would not have occurred. Furthermore, the District met all of the procedural requirements of the exceptional events rule including prompt public notification of the expected air quality impacts. Because EPA believes that the State has satisfied the provisions of the EER, EPA is concurring with the State's request to flag this exceedance as due to an exceptional event.