



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

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OFFICE OF
AIR AND RADIATION

MEMORANDUM

SUBJECT: Policy Guidance on the Use of the November 1, 2006, Update to AP-42 for Re-entrained Road Dust for SIP Development and Transportation Conformity

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TO EPA Regional Air Directors, Regions I – X

On November 1, 2006, EPA's Office of Air Quality Planning and Standards (OAQPS) released changes to the AP-42 methods used for calculating PM_{2.5} re-entrained road dust emissions. These changes revise the approved version of AP-42 for PM_{2.5} and PM₁₀ road dust calculations, and will result in 40% less PM_{2.5} road dust from paved roads and 33% less PM_{2.5} road dust from unpaved roads. Please note, however, that the PM₁₀ estimates of re-entrained road dust remain unchanged.

The attached guidance provides additional details about the changes made to the AP-42 methods for road dust and how and when to use them in PM_{2.5} SIPs and transportation plan and transportation improvement program (TIP) conformity determinations. It also reaffirms that **PM₁₀ road dust estimates are unchanged** from the previous version. The attached guidance supersedes the AP-42 portions of EPA's February 24, 2004, guidance, which addressed both MOBILE6.2 and AP-42. The portions of the February 2004 guidance addressing MOBILE6.2 remain in effect.

We hope you will find this document helpful for conveying information to your states and transportation agencies that will be including road dust in their PM_{2.5} and PM₁₀ SIPs and transportation conformity determinations. For additional information:

- Today's policy guidance, the 2004 policy memo, and the *Federal Register* notice in which EPA approved MOBILE6.2 and the previous version of AP-42 can be found at: <http://www.epa.gov/otaq/stateresources/transconf/policy.htm>.
- The new AP-42 methods for calculating road dust can be found at: <http://www.epa.gov/ttn/chief/ap42/ch13/index.html>.
- General questions about this guidance can be directed to Laura Berry of EPA's Office of Transportation and Air Quality (OTAQ) at email address: berry.laura@epa.gov or phone number: (734) 214-4858, or Joe Pedelty of the same office at: pedelty.joe@epa.gov or phone number: (734) 214-4410.
- Specific questions regarding the new AP-42 methods should be directed to John Bosch of OAQPS at email address: bosch.john@epa.gov or phone number (919) 541-5583.

Attachment

Attachment

Using the November 2006 AP-42 Update in SIPs and Transportation Conformity Determinations in PM_{2.5} and PM₁₀ Nonattainment and Maintenance Areas

1. What is AP-42?

AP-42 is EPA's compilation of data and methods for estimating average emission rates from a variety of activities and sources from various sectors. This guidance is concerned only with the sections of AP-42 that address emissions of re-entrained road dust (also referred to as "road dust" in this document) from paved and unpaved roads: Section 13.2.1, Paved Roads and Section 13.2.2, Unpaved Roads. Refer to EPA's website <http://www.epa.gov/ttn/chief/ap42/index.html> for more information about AP-42 in general.

The AP-42 methods for road dust previously in effect were issued in December 2003. For the purposes of this guidance, the "November 2006 update" refers to the update to these two sections released on November 1, 2006. The "December 2003 version" refers to the AP-42 methods previously in effect for these two sections, issued in December 2003 and approved on May 19, 2004 (69 FR 28830) to replace PART 5 emissions factors and earlier AP-42 methods for road dust.

2. How is the November 2006 update different from the December 2003 version?

PM_{2.5}: The only changes to the AP-42 methods are the factors for calculating the portion of PM₁₀ road dust emissions that consist of PM_{2.5} from paved and unpaved roads, which are contained in Sections 13.2.1 and 13.2.2 of AP-42.¹ EPA's AP-42 methods estimate the amount of PM_{2.5} road dust as a percentage of PM₁₀ road dust. The November 2006 update changed the December 2003 version by decreasing the percentage of PM₁₀ road dust that is thought to be PM_{2.5} road dust. As a result of this change, calculated emissions for the PM_{2.5} fraction of re-entrained road dust from paved and unpaved roads will be reduced by approximately 40% and 33%, respectively. Nothing else in the methods has changed. For example, there are no changes to the basic algorithm used for the calculations or the data required to perform the calculations for road dust.

PM₁₀: The November 2006 update does not change the calculations of PM₁₀ road dust emissions, since the November 2006 update incorporates the previous version's PM₁₀ road dust methods.

¹ These changes apply for all purposes. For example, if other sections of AP-42 reference Sections 13.2.1 and 13.2.2, the November 2006 update applies.

3. Why did EPA make these changes?

EPA updated the PM_{2.5} fractions of road dust from paved and unpaved roads in AP-42 because a number of fugitive dust studies indicated that the December 2003 version overestimated PM_{2.5}. Specifically, studies found the amount of PM₁₀ consisting of PM_{2.5} measured by EPA Federal Reference Method (FRM) samplers was significantly lower than predicted by the December 2003 version. A February 2006 study confirmed that the method used to develop the December 2003 version results in more PM_{2.5} than FRM samplers measure.² Based on this information, EPA corrected the emission factors in the November 2006 update.

4. When do PM_{2.5} nonattainment or maintenance areas have to use the November 2006 update for SIPs that are currently under development or will be in the future?

In general, EPA believes that areas should begin to use the November 2006 update for their PM_{2.5} state implementation plans (SIPs) as soon as possible, unless EPA has approved a locally-developed road dust methodology. The Clean Air Act requires that SIP inventories and control measures be based on the most current information and applicable models that are available when the SIP is developed.³ If you have questions about which model should be used in your SIP, please consult your EPA Regional Office.

5. When do PM_{2.5} areas have to use the November 2006 update for including re-entrained road dust in transportation conformity determinations?

First, note that transportation conformity applies with respect to re-entrained road dust in a PM_{2.5} area only if emissions from re-entrained road dust are determined to be a significant contributor to the PM_{2.5} nonattainment problem (40 CFR 93.102(b)(3)):

- Prior to a PM_{2.5} area having adequate or approved PM_{2.5} SIP budgets, re-entrained road dust would only be included in regional emissions analyses and hot-spot analyses if the EPA Regional Administrator or state air quality agency determines that re-entrained road dust is a significant contributor to the PM_{2.5} nonattainment problem and has so notified the MPO and DOT (40 CFR 93.102(b)(3) and 93.119(f)(8)). In other words, PM_{2.5} areas can presume that re-entrained road dust is not a significant contributor and therefore not include road dust in PM_{2.5} transportation conformity analyses before SIP budgets are adequate or approved, unless EPA or the state finds road dust significant.

² “Proposed Revisions to Fine Fraction Ratios Used for AP-42 Fugitive Dust Emission Factors”, Midwest Research Institute Project 110397, February 1, 2006. This study can be found on EPA’s website at: <http://www.epa.gov/ttn/chief/ap42/ch13/bgdocs/b13s02.pdf>.

³ See Clean Air Act section 172(c)(3) and 40 CFR 51.112(a)(1).

- After a PM_{2.5} area has adequate or approved PM_{2.5} budgets, the area will need to include re-entrained road dust in regional emissions analyses and hot-spot analyses only if the PM_{2.5} SIP budgets include re-entrained road dust (40 CFR 93.102(b)(3)).

When a PM_{2.5} area must consider re-entrained road dust in transportation conformity and does not have an EPA-approved local method, the November 2006 update should be used for any new transportation plan or TIP conformity analyses begun after the release of today's guidance.⁴ The transportation conformity rule requires that the conformity determinations be based on the latest emission factor models that are approved by EPA for SIP purposes (40 CFR 93.111(a)). While the transportation conformity rule provides for a grace period of three to 24 months before a new model is required to be used for transportation conformity determinations (40 CFR 93.111(b)), the changes to the PM_{2.5} fractions in the November 2006 update do not constitute a new model and therefore no grace period applies for its release.

6. When do PM₁₀ areas have to use the November 2006 update for including re-entrained road dust in new SIPs and transportation conformity determinations?

PM₁₀ areas that are in the middle of developing a SIP or transportation plan or TIP conformity determination using the December 2003 version of AP-42 can continue using that version because there is no change in the PM₁₀ road dust emissions calculated by the November 2006 update. Because the November 2006 update supersedes the December 2003 version, PM₁₀ areas should use the November 2006 update of AP-42 for any new SIPs or transportation plan or TIP conformity analyses begun after the date of this memo simply for clarity and consistency. The November 2006 update is now found on EPA's AP-42 website instead of the December 2003 version at <http://www.epa.gov/ttn/chief/ap42/ch13/index.html>.

⁴ The release of the November 2006 AP-42 update does not trigger the need for quantitative PM_{2.5} or PM₁₀ hot-spot modeling at this time. Qualitative analyses are currently required for certain projects in PM_{2.5} and PM₁₀ areas (40 CFR 93.123(b)).

7. Can PM_{2.5} and PM₁₀ areas use alternative approaches to the November 2006 update to determine re-entrained road dust emissions for SIPs and transportation conformity determinations?

Yes, with EPA's approval. Some nonattainment or maintenance areas have historically used alternative methods for estimating re-entrained road dust emissions that may be more appropriate than the AP-42 methods given specific local conditions. Other nonattainment or maintenance areas may develop alternatives to the AP-42 methods in the future. EPA will evaluate such alternative approaches in the context of their planned use to determine if they can be used instead of AP-42, and will approve alternative approaches where appropriate for use in particular areas. Once EPA approves an alternative approach, that approach would be the latest emissions model for road dust in the area for which we approved it, based on 40 CFR 93.111(a). State and local agencies should consult with EPA Regional Offices about the technical validity of proposed alternative approaches and about how today's guidance would apply to those approaches prior to using an alternative method to develop a SIP or conformity determination for re-entrained road dust. EPA Regional Offices will evaluate alternatives to AP-42 in consultation with EPA's Office of Air Quality Planning and Standards (OAQPS) and Office of Transportation and Air Quality (OTAQ).

EPA also notes that the November 2006 update is the approved method only for situations for which silt loading, mean vehicle weight, and mean vehicle speed on paved roads fall within ranges given in AP-42, section 13.2.1.3 and with reasonably free flowing traffic. For other conditions, areas may use an appropriate method approved by EPA on a case-by-case basis, as described above.

8. Does this document supersede EPA's February 24, 2004, memo covering the use of MOBILE6.2 and the December 2003 AP-42 version?

This document supersedes only the AP-42 portions of the February 24, 2004, EPA memo entitled, "Policy Guidance on the Use of MOBILE6.2 and the December 2003 AP-42 Method for Re-Entrained Road Dust for SIP Development and Transportation Conformity."⁵ The portions of the February 2004 guidance addressing MOBILE6.2 remain in effect.

9. Does this document create any new requirements?

The discussion in this document is intended solely as guidance. The statutory provisions and EPA regulations described in this document contain legally binding requirements. This document is not a regulation itself, nor does it change or substitute for those provisions and regulations. It merely explains how to apply the change

⁵ A copy of the February 24, 2004, memo can be downloaded from EPA's website at http://www.epa.gov/otaq/models/mobile6/mobil6.2_letter.pdf

contained in the November 2006 update to AP-42 for calculating re-entrained road dust. EPA retains the discretion to adopt approaches on a case-by-case basis that may differ from this document, but still comply with the statute and regulations. Any decisions regarding a particular SIP or transportation conformity determination will be made based on the statute and regulations. This document may be revised periodically without public notice.