ENVIRONMENTAL PROTECTION AGENCY

[FRL-9680-3]

Ambient Air Monitoring Reference and Equivalent Methods: Designation of Three New Equivalent Methods

AGENCY: Environmental Protection Agency.

ACTION: Notice

SUMMARY: Notice is hereby given that the Environmental Protection Agency (EPA) has designated, in accordance with 40 CFR Part 53, three new equivalent methods: one for measuring concentrations of nitrogen dioxide (NO_2) and two for measuring concentrations of lead (Pb) in the ambient air.

FOR FURTHER INFORMATION CONTACT: Robert Vanderpool, Human Exposure and Atmospheric Sciences Division (MD-D205-03), National Exposure Research Laboratory, U.S. EPA, Research Triangle Park, North Carolina 27711. E-mail: Vanderpool.Robert@epa.gov. Phone: 919-541-7877. Written inquiries are strongly preferred.

SUPPLEMENTARY INFORMATION: In accordance with regulations at 40 CFR Part 53, the EPA evaluates various methods for monitoring the concentrations of those ambient air pollutants for which EPA has established National Ambient Air Quality Standards (NAAQSs) as set forth in 40 CFR Part 50. Monitoring methods that are determined to meet specific requirements for adequacy are designated by the EPA as either reference methods or equivalent methods (as

applicable), thereby permitting their use under 40 CFR Part 58 by States and other agencies for determining compliance with the NAAQSs.

The EPA hereby announces the designation of three new equivalent methods for measuring pollutant concentrations in the ambient air: one for NO_2 and two for Pb. These designations are made under the provisions of 40 CFR Part 53, as amended on August 31, 2011 (76 FR 54326- 54341).

The new equivalent method for NO_2 is an automated method (analyzer) utilizing the measurement principle based on gas phase chemiluminescence reaction of nitric oxide (NO) with ozone, using a photolytic NO_2 to NO converter and the calibration procedure specified in the operation manual. (Note that this NO_2 equivalent method differs from the automated NO_2 reference method by its use of a photolytic NO_2 to NO converter. This is the first NO_2 equivalent method designated with this type of converter). This newly designated equivalent method is identified as follows:

EQNA-0512-200, "Teledyne - Advanced Pollution Instrumentation, Inc. Model 200EUP or T200UP Chemiluminescence Nitrogen Oxides Analyzer", operated on any full scale range between 0-50 ppb and 0-1000 ppb, with any range mode (Single, Independent, or AutoRange), at any ambient temperature in the range of 20°C to 30°C, with software Temperature and Pressure compensation ON, in accordance with the associated instrument manual; and with or without any of the following options: Zero/Span Valves, standard serial port (RS232/RS485) or Multi-drop RS-232, Ethernet port, USB COM port, analog inputs, digital status outputs, analog outputs: 100 mV, 1V, 5V, 10V, 4-20 mA current loop outputs.

The application for equivalent method determination for the NO_2 method was received by the Office of Research and Development on October 4, 2011. These analyzer models are commercially available from the applicant, Teledyne-API, 9480 Carroll Park Drive, San Diego, CA 92121-5201.

One of the new equivalent methods for Pb is a manual method that uses the sampling procedure specified in the Reference Method for the Determination of Lead in Suspended Particulate Matter Collected From Ambient Air (High-Volume Sampler), 40 CFR Part 50, Appendix G, with a different extraction and analytical procedure. The method is identified as follows:

EQL-0512-201, "*Determination of Lead in TSP by Inductively Coupled Plasma Mass Spectrometry (ICP-MS) with Hot Block Dilute Acid and Hydrogen Peroxide Filter Extraction*"

In this method, total suspended particulate matter (TSP) is collected on glass fiber filters according to 40 CFR Appendix G to part 50, *EPA Reference Method for the Determination of Lead in Suspended Particulate Matter Collected From Ambient Air.* The filter samples are extracted in a hot block at 95°C with a solution of dilute hydrochloric acid and nitric acid and two aliquots of hydrogen peroxide, for a total of two and a half hours extraction time. The samples are brought to a final volume of 50 mL and the lead content of the sample extract is analyzed by Inductively Coupled Plasma-Mass Spectrometry (ICP-MS) based on EPA Compendium Method IO-3.5 and SW-846 Method 6020A.

The other new equivalent method for Pb is a manual method that uses the

sampling procedure specified in the Reference Method (FRM) for the Determination of Lead in Particulate Matter as PM_{10} Collected From Ambient Air, 40 CFR Part 50, Appendix Q, with a different extraction and analytical procedure. The method is identified as follows:

EQL-0512-202, "*Determination of Lead in PM_{10} by Inductively Coupled Plasma Mass Spectrometry (ICP-MS) with Hot Block Dilute Acid and Hydrogen Peroxide Filter Extraction*"

In this method, PM_{10} particulate matter is collected on Teflon® membrane filters according to 40 CFR Appendix Q to part 50, *EPA Reference Method for the Determination of Lead in Particulate Matter as PM_{10} Collected From Ambient Air.* The filter samples are extracted in a hot block at 95°C with a solution of hydrochloric acid, nitric acid, and hydrofluoric acid and an aliquot of hydrogen peroxide for a total of two and a half hours extraction time. Samples are brought to a final volume of 50 mL and analyzed by Inductively Coupled Plasma-Mass Spectrometry (ICP-MS) based on EPA Compendium Method IO-3.5 and SW-846 Method 6020A.

The applications for equivalent method determinations for these Pb methods were submitted by Eastern Research Group, Inc., 601 Keystone Park Drive, Suite 700, Morrisville, NC 27560 and were received by the EPA's Office of Research and Development on October 4, 2011. The method descriptions will be available at http://www.epa.gov/ttnamti1/pb-monitoring.html.

A representative test analyzer for the NO_2 method and the analytical procedures for the Pb methods have been tested in accordance with the

applicable test procedures specified in 40 CFR Part 53, as amended on August 31, 2011. After reviewing the results of those tests and other information submitted in the applications, EPA has determined, in accordance with Part 53, that each of these methods should be designated as an equivalent method. The information in the applications will be kept on file, either at EPA's National Exposure Research Laboratory, Research Triangle Park, North Carolina 27711 or in an approved archive storage facility, and will be available for inspection (with advance notice) to the extent consistent with 40 CFR Part 2 (EPA's regulations implementing the Freedom of Information Act).

As designated equivalent methods, these methods are acceptable for use by states and other air monitoring agencies under the requirements of 40 CFR Part 58, Ambient Air Quality Surveillance. For such purposes, the methods must be used in strict accordance with the operation manual (NO2 method) or the standard operating procedures associated with each of the Pb methods and are subject to any specifications and limitations specified in the applicable designated method description (see the identifications of the methods above).

Use of the methods also should be in general accordance with the guidance and recommendations of applicable sections of the "Quality Assurance Handbook for Air Pollution Measurement Systems, Volume I," EPA/600/R-94/038a and "Quality Assurance Handbook for Air Pollution Measurement Systems, Volume II, Ambient Air Quality Monitoring Program" EPA-454/B-08-003, December, 2008. Provisions concerning modification of such methods by users are specified under Section 2.8 (Modifications of Methods by Users) of Appendix C to 40 CFR Part 58.

Consistent or repeated noncompliance should be reported to: Director, Human Exposure and Atmospheric Sciences Division (MD-E205-01), National Exposure Research Laboratory, U.S. Environmental Protection Agency, Research Triangle Park, North Carolina 27711.

Designation of these new equivalent methods is intended to assist the States in establishing and operating their air quality surveillance systems under 40 CFR Part 58. Questions concerning the commercial availability or technical aspects of the methods should be directed to the applicants.

Signed:
Jennifer Orme-Zavaleta
Director
National Exposure Research Laboratory

Dated: May 23, 2012

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