

The EPA Administrator, E. Scott Pruitt, signed the following notice on 12/11/2017, and EPA is submitting it for publication in the *Federal Register* (FR). While we have taken steps to ensure the accuracy of this Internet version of the rule, it is not the official version of the rule for purposes of compliance. Please refer to the official version in a forthcoming FR publication, which will appear on the Government Printing Office's FDSys website (<http://gpo.gov/fdsys/search/home.action>) and on Regulations.gov (<http://www.regulations.gov>) in Docket No. EPA-HQ-OAR-2016-0510. Once the official version of this document is published in the FR, this version will be removed from the Internet and replaced with a link to the official version.

6560-50-P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 51, 60, and 63

[EPA-HQ-OAR-2016-0510; FRL-XXXX-XX-OAR]

RIN 2060-AS95

Revisions to Testing Regulations for Air Emission Sources

AGENCY: Environmental Protection Agency (EPA).

ACTION: Proposed rule.

SUMMARY: This action proposes corrections and updates to regulations for source testing of emissions. The proposed rule includes corrections to testing provisions that contain inaccuracies, updates to outdated procedures, and approved alternative procedures that provides testers enhanced flexibility. The revisions will improve the quality of data but will not impose new substantive requirements on source owners or operators.

DATES: Comments. Written comments must be received by **[insert date 60 days after date of publication in the *Federal Register*]**.

Public Hearing. The EPA will hold a public hearing on this rule if requested. Requests for a hearing must be made by **[insert date 10 days after date of publication in the *Federal Register*]**. Requests for a hearing should be made to Mrs. Lula H. Melton via email at melton.lula@epa.gov or by phone at (919) 541-2910. If a hearing is requested, it will be held on **[insert date 30 days after date of publication in the *Federal Register*]** at EPA Headquarters, William Jefferson Clinton East Building, 1201 Constitution Avenue NW, Washington, DC 20004.

ADDRESSES: Submit your comments, identified by Docket ID No. EPA-HQ-OAR-2016-0510 at <http://www.regulations.gov>. Follow the online instructions for submitting comments. Once submitted, comments cannot be edited or removed from Regulations.gov. The EPA may publish any comment received to its public docket. Do not submit electronically any information you consider to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Multimedia submissions (audio, video, etc.) must be accompanied by a written comment. The written comment is considered the official comment and should include discussion of all points you wish to make. The EPA will generally not consider comments or comment contents located outside of the primary submission (i.e., on the Web, Cloud, or other file sharing system). For additional submission methods, the full EPA public comment policy, information about CBI or multimedia submissions, and general guidance on making effective comments, please visit <http://www.epa.gov/dockets/commenting-epa-dockets>.

All documents in the docket are listed on the <https://www.regulations.gov> Web site. Although listed on the Web site, some information is not publicly available, e.g., CBI or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, is not placed on the Internet and will be publicly available only in hard copy. Publicly available docket materials are available either electronically at <https://www.regulations.gov> or in hard copy at the EPA Docket Center, Room 3334, EPA WJC West Building, 1301 Constitution Avenue, NW, Washington, DC 20004. The Public Reading Room is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Public Reading Room is (202) 566-1744, and the telephone number for the EPA Docket Center is (202) 566-1742.

FOR FURTHER INFORMATION CONTACT: Mrs. Lula H. Melton, Office of Air Quality Planning and Standards, Air Quality Assessment Division (E143-02), Environmental Protection Agency,

Research Triangle Park, NC 27711; telephone number: (919) 541-2910; fax number: (919) 541-0516;
email address: *melton.lula@epa.gov*.

SUPPLEMENTARY INFORMATION:

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I. General Information

A. Does this action apply to me?

The proposed amendments apply to industries that are subject to the current provisions of parts 51, 60, and 63. We did not list all of the specific affected industries or their North American Industry Classification System (NAICS) codes herein since there are many affected sources in numerous NAICS categories. If you have any questions regarding the applicability of this action to a particular entity, consult either the air permitting authority for the entity or your EPA Regional representative as listed in 40 CFR 63.13.

B. What action is the agency taking?

This action makes corrections and revisions to source test methods, performance specifications (PS), quality assurance/quality control (QA/QC) procedures, and testing regulations. The corrections and

revisions consist primarily of typographical errors, updates to testing procedures, and the addition of alternative equipment and methods the Agency has deemed acceptable to use.

II. Background

The EPA catalogs errors and corrections, as well as necessary revisions to test methods, PS, QA/QC procedures, and associated regulations in 40 CFR parts 51, 60, and 63 and periodically updates and revises these provisions. The most recent updates and revisions were promulgated on August 30, 2016 (81 FR 59800). This proposed rule addresses necessary corrections and revisions identified subsequent to that final action, many of which were brought to our attention by regulated sources and end-users, such as environmental consultants and compliance professionals. These revisions will improve the quality of data obtained and give source testers the flexibility to use newly-approved alternative procedures.

III. Summary of Proposed Amendments

The following amendments are being proposed.

A. Method 201A of Appendix M of Part 51

In Method 201A, in section 12.5, the denominator of equation 24 would be corrected.

B. Method 204 of Appendix M of Part 51

In Method 204, in section 8.2, the statement regarding equation 204-2 would be corrected to “The NEAR must be ≤ 0.05 .”

C. Method 205 of Appendix M of Part 51

In Method 205, section 2.1.1 would be revised to allow the use of National Institute of Standards and Technology (NIST)-traceable transfer standards to calibrate the gas dilution system because these standards are widely available and provide the accuracy necessary to perform the calibration. Section

2.1.1 would also be revised to require testers to report the results of the calibration of the dilution system to enable the regulatory authority to review this information.

D. General Provisions (Subpart A) of Part 60

In the General Provisions of part 60, section 60.17(h) would be revised to add American Society for Testing and Materials (ASTM) D6216-12 to the list of incorporations by reference and to re-number the remaining consensus standards that are incorporated by reference in alpha-numeric order.

E. Glass Manufacturing Plants (Subpart CC) Part 60

In subpart CC, the allowed filter temperature in section 60.293(f) would be revised from 120 ± 14 °C to 120 ± 5 °C resulting in increased precision of the filterable particulate matter (PM) measurements. The allowed filter temperature in section 60.296(d)(2) would be revised from 177 ± 14 °C to 177 ± 5 °C resulting in increased precision of the filterable PM measurements.

F. Fossil-Fuel-Fired Steam Generators (Subpart D) Part 60

In subpart D, the allowed filter temperature in section 60.46(b)(2)(i) would be revised from 160 ± 14 °C to 160 ± 5 °C resulting in increased precision of the filterable PM measurements.

G. Electric Utility Steam Generating Units (Subpart Da) Part 60

In subpart Da, the allowed filter temperature in section 60.50Da (b)(1)(ii)(A) would be revised from 160 ± 14 °C to 160 ± 5 °C resulting in increased precision of the filterable PM measurements.

H. Industrial-Commercial-Institutional Steam Generating Units (Subpart Db) Part 60

In subpart Db, the allowed filter temperature in section 60.46b(d)(4) would be revised from 160 ± 14 °C to 160 ± 5 °C resulting in increased precision of the filterable PM measurements.

I. Small Industrial-Commercial-Institutional Steam Generating Units (Subpart Dc) Part 60

In subpart Dc, the allowed filter temperature in section 60.45c(a)(5) would be revised from 160 ± 14 °C to 160 ± 5 °C resulting in increased precision of the filterable PM measurements.

J. Municipal Waste Combustors for Which Construction is Commenced After December 20, 1989 and on or Before September 20, 1994 (Subpart Ea) Part 60

In subpart Ea, the allowed filter temperature in section 60.58a(b)(3) would be revised from 160 ± 14 °C to 160 ± 5 °C resulting in increased precision of the filterable PM measurements.

K. New Residential Wood Heaters, New Residential Hydronic Heaters and Forced-Air Furnaces

In subpart QQQQ, in Method 28WHH, in section 13.5.1, equation 8 would be corrected.

L. Method 2B of Appendix A-1 of Part 60

In Method 2B, in section 12.1, the definition of ambient carbon dioxide concentration would be revised because the global monthly mean CO₂ concentration varies over time. Also, a Web site link would be added to the definition.

M. Method 5 of Appendix A-3 of Part 60

The allowed filter temperature in Method 5, sections 2.0, 6.1.1.2, 6.1.1.6, 6.1.1.7, and 8.5 would be revised from 120 ± 14 °C to 120 ± 5 °C resulting in increased precision of the filterable PM measurements. Section 6.1.1.9 would be revised to allow the use of a single temperature sensor in lieu of two temperature sensors on the dry gas meter as allowed by Technical Information Document 19 (TID-19) and the approved broadly applicable alternative, ALT-117 (see <https://www.epa.gov/emc>).

N. Method 5B of Appendix A-3 of Part 60

The allowed filter temperature in Method 5B, sections 2.0, 6.1, and 8.2 would be revised from 160 ± 14 °C to 160 ± 5 °C resulting in increased precision of the filterable PM measurements. Section 11.0 would be revised to replace the reference to Method 5, section 11.0 with specific analytical procedures and to report the results using Figure 5B-1 for complete data review. Section 17.0 would be revised to delete the word “Reserved” from the title, and Figure 5B-1 (Analytical Data Sheet) would be added.

O. Method 5I of Appendix A-3 of Part 60

In Method 5I, sections 2.1 and 8.5.2.2 would be revised to tighten the allowed filter temperature from 120 ± 14 °C to 120 ± 5 °C resulting in increased precision of the filterable PM measurements.

P. Method 7 of Appendix A-4 of Part 60

In Method 7, sections 10.1.2 and 11.3 reference erroneous sections; the correct sections would be inserted.

Q. Method 8 of Appendix A-4 of Part 60

In Method 8, sections 6.1.1.1 through 6.1.1.4 would be renumbered to 6.1.1.2 through 6.1.1.5; a new section 6.1.1.1 would be added to clarify the requirements that apply to the probe nozzle; and Figure 8-1 (Sulfuric Acid Sampling Train) would be corrected.

R. Method 18 of Appendix A-6 of Part 60

In Method 18, in section 13.1, the erroneous paragraph (c) designation would be re-designated as (b).

S. Method 22 of Appendix A-7 of Part 60

In Method 22, sections 11.2.1 and 11.2.2 would be revised to allow digital photography to be used for a subset of the recordkeeping requirements. Section 11.2.3 would be added to allow digital photographic records. Note that ALT-109 (see <https://www.epa.gov/emc>) is the associated broadly applicable alternative that allows the use of digital photographs for specific recordkeeping requirements.

T. Method 26 of Appendix A-8 of Part 60

In Method 26, section 6.2.2 would be revised to allow the use of glass sample storage containers as an option to allow flexibility and to be consistent with Method 26A.

U. Method 26A of Appendix A-8 of Part 60

In Method 26A, section 6.2.1 would be revised to remove the language regarding sample storage containers. We have determined that high-density polyethylene is an acceptable material for sample

storage containers in addition to the currently allowed glass. Therefore, we would allow both high-density polyethylene and glass in a new section 6.2.4.

V. Performance Specification 1 of Appendix B of Part 60

In Performance Specification 1, references to ASTM D6216-98 (in sections 2.1, 3.1, 6.1, 8.1(1), 8.1(3)(ii), 8.2(1), 8.2(2), 8.2(3), 9.0, 12.1, 13.1, 13.2, and 16.0 reference 8. will be replaced with ASTM D6216-12. Note: If the initial certification of the continuous opacity monitoring system (COMS) has already occurred using D6216-98, D6216-03, or D6216-07, it will not be necessary to recertify using D6216-12.

W. Performance Specification 2 of Appendix B of Part 60

In Performance Specification 2, section 13.2 would be replaced with a table that indicates the relative accuracy performance specifications.

X. Performance Specification 3 of Appendix B of Part 60

In Performance Specification 3, the two sentences in section 12.0 that read, “Calculate the arithmetic difference between the RM and the CEMS output for each run. The average difference of the nine (or more) data sets constitute the RA.” would be deleted; these two sentences are no longer necessary since equations 3-1 and 3-2 would be moved from section 13.2 to section 12.0.

Y. Performance Specification 11 of Appendix B of Part 60

In Performance Specification 11, section 13.1, the word “average” erroneously exists in the second sentence and would be deleted.

Z. Performance Specification 15 of Appendix B of Part 60

In Performance Specification 15, section 13.0 would be added as “Method Performance (Reserved).”

AA. Performance Specification 18 of Appendix B of Part 60

In Performance Specification 18, in section 11.8.7, the last sentence would be revised to clarify the duration of the drift check. In Table 1, the erroneous acronym “NO₂” would be replaced with “NO.” In the appendix of Performance Specification 18, the inadvertently omitted reserved section 12.0 would be added.

BB. Procedure 1 of Appendix F of Part 60

In Procedure 1, in section 5.1.2 (1), the sentence immediately following the table that reads, “Challenge the CEMS three times at each audit point, and use the average of the three responses in determining accuracy.” would be replaced with, “Inject each of the audit gases, three times each for a total of six injections. Inject the gases in such a manner that the entire CEMS is challenged. Do not inject the same gas concentration twice in succession.” In section 5.1.2 (3), the reference to EPA’s traceability protocol for gaseous calibration standards would be updated, and the language regarding the use of EPA Method 205 for dilution of audit gases would be clarified.

CC. General Provisions (Subpart A) of Part 63

Sections 63.7(g)(2), 63.7(g)(2)(v), and 63.8(e)(5)(i) of the General Provisions (subpart A) of part 63 would be revised to require the reporting of specific test data for continuous monitoring system performance evaluation tests and ongoing QA tests. These data elements would be required regardless of the format of the report, i.e., electronic or paper. These modifications will ensure that performance evaluation and quality assurance test reporting include all data necessary for the compliance authority to assess and assure the quality of the reported data and that the reported information describes and identifies the specific unit covered by the evaluation test report.

DD. Wool Fiberglass Manufacturing (Subpart NNN) Part 63

In subpart NNN, the allowed filter temperature in §63.1385(a)(5) would be revised from 120 ±14 °C to 120 ±5 °C resulting in increased precision of the filterable PM measurements.

EE. Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters (Subpart DDDDD) Part 63

In Table 6 of subpart DDDDD, row 1.f. would be revised to allow the use of EPA SW-846-7471B (for liquid samples) in addition to EPA SW-846-7470A for measuring mercury to allow flexibility.

FF. Coal- and Oil-Fired Electric Utility Steam Generating Units (Subpart UUUUU) Part 63

In subpart UUUUU, the allowed filter temperature in §63.10010(h)(7)(i)(1) would be revised from 160 ± 14 °C to 160 ± 5 °C resulting in increased precision of the filterable PM measurements. In Table 5, Method 5I would be allowed as a test method option because Method 5I is designed for low PM application.

GG. Method 303 of Appendix A of Part 63

In Method 303, section 12.4, equation 303-3 would be corrected by inserting “where $y =$ ” in front of the equation.

HH. Method 308 of Appendix A of Part 63

In Method 308, deionized distilled water would replace the aqueous n-proponal solution; the affected sections are 2.0, 7.2.2, 7.2.3.3, and 11.3.2. Section 7.2.2, which defines the aqueous n-proponal solution, would be deleted, and section 7.2.3 would be renumbered and renamed as 7.2.2, “Methanol Stock Standard.” Section 8.1.2 would be revised to require a leak check prior to the sampling run (in addition to after the sampling run) for QA purposes; requiring a leak check prior to the sampling run would potentially save time and money. In section 9.1, methanol spike recovery check would be added as a QC measure in Table 9.1. In section 12.1, variables used in equations 308-4 and 308-5 would be added and section 12.5, which includes equations 308-4 and 308-5, would be added. In section 13.0, the title “Reserved” would be replaced with “Method Performance” and QA requirements would be added to be consistent with other methods.

II. Method 320 of Appendix A of Part 63

In Method 320, section 8.2.2.5 is erroneously included in section 8.2.2.4 and would be detached. Also in section 8.2.2.4, the denominator in equation 2 would be corrected from P_{SS} to P_s . In section 9.2.3, the word “where” in the statement “Calculate the dilution ratio using the tracer gas as follows: where:” would be deleted. Also in section 9.2.3, “dir” on the definition of spike is inadvertently superscripted and would be subscripted.

JJ. Method 323 of Appendix A of Part 63

In Method 323, section 12.9, the denominator in equation 323-8 would be corrected.

KK. Method 325A of Appendix A of Part 63

In Method 325A, section 8.2.1.3 would be revised to clarify that only one extra sampling site is required near known sources of volatile organic compounds (VOCs) when the source is within 50 meters of the boundary and the source is located between two monitors. The label under Figure 8.1 would be corrected from Refinery (20% angle) to Refinery (20° angle). Section 8.2.3.2 would be revised to include facilities with a monitoring perimeter length equal to 7,315 meters (24,000 feet). Section 8.2.3.3 would be added to provide clarification and an equivalent procedure in Option 2 (linear distance between sites) for site locations that parallel section 8.2.2.2.4 in Option 1 (radial distance between sites).

LL. Method 325B of Appendix A of Part 63

In Method 325B, section 9.3.2 would be revised to correct an error in the number of field blank samples required for a sampling period and to provide consistency with the sample analysis required in Method 325B. In sections 9.13 and 11.3.2.5, the erroneous reference to section 10.6.3 would be corrected to 10.0. Also in section 11.3.2.5, the erroneous reference to section 10.9.5 would be corrected to 9.13. Section 12.2.2 would be revised to correct the calculation of target compound concentrations at standard conditions. Sections 12.2.3 and 12.2.4 would be deleted because the equations for target concentrations are incorrect. Table 17-1 would be revised to add inadvertently omitted QC criteria from section 9.3.3.

IV. Statutory and Executive Order Reviews

Additional information about these statutes and Executive Orders can be found at <http://www2.epa.gov/laws-regulations/laws-and-executive-orders>.

A. Executive Order 12866: Regulatory Planning and Review and Executive Order 13563: Improving Regulation and Regulatory Review

This action is not a "significant regulatory action" under the terms of Executive Order (EO) 12866 (58 FR 51735, October 4, 1993) and is, therefore, not subject to review under Executive Orders 12866 and 13563 (76 FR 3821, January 21, 2011).

B. Executive Order 13771: Reducing Regulations and Controlling Regulatory Costs

This action is expected to be an Executive Order 13771 deregulatory action. This proposed rule is expected to provide meaningful burden reduction by improving data quality and providing source testers the flexibility to use newly-approved alternative procedures.

C. Paperwork Reduction Act (PRA)

This action does not impose an information collection burden under the PRA. The amendments being proposed in this action to the test methods, performance specifications, and testing regulations do not substantively revise the existing information collection requirements but rather only make corrections and minor updates to existing testing methodology. In addition, the proposed amendments clarify performance testing requirements.

D. Regulatory Flexibility Act (RFA)

I certify that this action will not have a significant economic impact on a substantial number of small entities under the RFA. In making this determination, the impact of concern is any significant adverse economic impact on small entities. An agency may certify that a rule will not have a significant economic impact on a substantial number of small entities if the rule relieves regulatory burden, has no net burden or otherwise has a positive economic effect on the small entities subject to the rule. This

proposed rule will not impose emission measurement requirements beyond those specified in the current regulations, nor does it change any emission standard. We have, therefore, concluded that this action will have no net regulatory burden for all directly regulated small entities.

E. Unfunded Mandates Reform Act (UMRA)

This action does not contain any unfunded mandate as described in UMRA, 2 U.S.C. 1531-1538, and does not significantly or uniquely affect small governments. The action imposes no enforceable duty on any state, local or tribal governments or the private sector.

F. Executive Order 13132: Federalism

This action does not have federalism implications. It will not have substantial direct effects on the states, on the relationship between the national government and the states, or on the distribution of power and responsibilities among the various levels of government.

G. Executive Order 13175: Consultation and Coordination with Indian Tribal Governments

This action does not have tribal implications, as specified in Executive Order 13175. This action would correct and update existing testing regulations. Thus, Executive Order 13175 does not apply to this action.

H. Executive Order 13045: Protection of Children from Environmental Health Risks and Safety Risks

The EPA interprets Executive Order 13045 as applying only to those regulatory actions that concern environmental health or safety risks that the EPA has reason to believe may disproportionately affect children, per the definition of “covered regulatory action” in section 2-202 of the Executive Order. This action is not subject to Executive Order 13045 because it does not concern an environmental health risk or safety risk.

I. Executive Order 13211: Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution or Use

This action is not subject to Executive Order 13211, because it is not a significant regulatory action under Executive Order 12866.

J. National Technology Transfer and Advancement Act and 1 CFR Part 51

This action involves technical standards. The EPA proposes to use ASTM D6216-12 for continuous opacity monitors in Performance Specification 1. The ASTM D6216-12 standard covers the procedure for certifying continuous opacity monitors and includes design and performance specifications, test procedures, and QA requirements to ensure that continuous opacity monitors meet minimum design and calibration requirements, necessary in part, for accurate opacity monitoring measurements in regulatory environmental opacity monitoring applications subject to 10 percent or higher opacity standards.

The ASTM D6216-12 standard was developed and adopted by the American Society for Testing and Materials. The standard may be obtained from <http://www.astm.org> or from the ASTM at 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA 19428-2959.

K. Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations

The EPA believes that this action is not subject to Executive Order 12898 (59 FR 7629, February 16, 1994) because it does not establish an environmental health or safety standard. This action would correct and update existing testing regulations.

List of Subjects

40 CFR Part 51

Environmental protection, Air pollution control, Performance specifications, Test methods and procedures.

40 CFR Part 60

Environmental protection, Air pollution control, Incorporation by reference, Performance specifications, Test methods and procedures.

40 CFR Part 63

Environmental protection, Air pollution control, Performance specifications, Test methods and procedures.

Dated:

E. Scott Pruitt,
Administrator.

For the reasons stated in the preamble, the Environmental Protection Agency proposes to amend title 40, chapter I of the Code of Federal Regulations as follows:

PART 51—REQUIREMENTS FOR PREPARATION, ADOPTION, AND SUBMITTAL OF IMPLEMENTATION PLANS

1. The authority citation for part 51 continues to read as follows:

Authority: 23 U.S.C. 101; 42 U.S.C. 7401-7671q.

2. Amend appendix M to part 51 as follows:

a. Revise section 12.5 in Method 201A.

b. Revise section 8.2 in Method 204.

c. Revise section 2.1.1 in Method 205.

The revisions read as follows:

Appendix M to Part 51-Recommended Test Methods for State Implementation Plans

* * * * *

Method 201A-Determination of PM₁₀ and PM_{2.5} Emissions From Stationary Sources (Constant Sampling Rate Procedure)

* * * * *

12.5 Equations. Use the following equations to complete the calculations required in this test method.

* * *

$$t_n = \left[\frac{c_p \sqrt{\Delta P_n}}{c'_p [(\Delta p)^{0.5}]_{avg}} \right] \left[\frac{t_r}{N_{tp}} \right]$$

(Eq. 24)

* * * * *

Method 204-Criteria for and Verification of a Permanent or Temporary Total Enclosure

* * * * *

8.2 * * *

The NEAR must be ≤ 0.05 .

* * * * *

Method 205-Verification of Gas Dilution Systems for Field Instrument Calibrations

* * * * *

2.1.1 The gas dilution system shall be recalibrated once per calendar year using NIST-traceable flow standards with an uncertainty ≤ 0.25 percent. You shall report the results of the calibration by the person or manufacturer who carried out the calibration whenever the dilution system is used, listing the date of the most recent calibration, the due date for the next calibration, calibration point, reference flow device (ID, S/N), and acceptance criteria. Follow the manufacturer's instructions for the operation and use of the gas dilution system. A copy of the manufacturer's instructions for the operation of the instrument, as well as the most recent calibration documentation shall be made available for inspection at the test site.

* * * * *

PART 60-STANDARDS OF PERFORMANCE FOR NEW STATIONARY SOURCES

3. The authority citation for part 60 continues to read as follows:

Authority: 42 U.S.C. 7401 *et seq.*

4. In §60.17:

a. Redesignate paragraphs (h)(177) through (h)(209) as (h)(178) through (h)(210).

b. Add new paragraph (h)(177).

The addition reads as follows:

§60.17 Incorporations by reference.

* * * * *

(h) * * *

(177) ASTM D6216-12, Standard Practice for Opacity Monitor Manufacturers to Certify Conformance with Design and Performance Specifications, IBR approved for appendix B to part 60: Performance Specification 1.

* * * * *

Subpart CC-Standards of Performance for Glass Manufacturing Plants

5. Revise §60.293(f) to read as follows:

§60.293 Standards for particulate matter from glass melting furnace with modified-processes.

* * * * *

(f) Test methods and procedures as specified in §60.296 shall be used to determine compliance with this section except that to determine compliance for any glass melting furnace using modified processes and fired with either a gaseous fuel or a liquid fuel containing less than 0.50 weight percent sulfur, Method 5 shall be used with the probe and filter holder heating system in the sampling train set to provide a gas temperature of 120 ± 5 °C (248 ± 9 °F).

* * * * *

6. Revise §60.296(d)(2) to read as follows:

§60.296 Test methods and procedures.

* * * * *

(d) * * *

(2) Method 5 shall be used to determine the particulate matter concentration (c_p) and volumetric flow rate (Q_{sd}) of the effluent gas. The sampling time and sample volume for each run shall be at least 60 minutes and 0.90 dscm (31.8 dscf). The probe and filter holder heating system may be set to provide a gas temperature no greater than 177 ± 5 °C (350 ± 9 °F), except under the conditions specified in §60.293(e).

* * * * *

Subpart D-Standards of Performance for Fossil-Fuel-Fired Steam Generators

7. Revise §60.46(b)(2)(i) to read as follows:

§60.46 Test methods and procedures.

* * * * *

(b) * * *

(2) * * *

(i) The sampling time and sample volume for each run shall be at least 60 minutes and 0.85 dscm (30 dscf). The probe and filter holder heating systems in the sampling train shall be set to provide an average gas temperature of 160 ± 5 °C (320 ± 9 °F).

* * * * *

Subpart Da-Standards of Performance for Electric Utility Steam Generating Units

8. Revise §60.50Da (b)(1)(ii)(A) to read as follows:

§60.50Da Compliance determination procedures and methods.

* * * * *

(b) * * *

(1) * * *

(ii) * * *

(A) The sampling time and sample volume for each run shall be at least 120 minutes and 1.70 dscm (60 dscf). The probe and filter holder heating system in the sampling train may be set to provide an average gas temperature of no greater than 160 ± 5 °C (320 ± 9 °F).

* * * * *

Subpart Db-Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units

9. Revise §60.46b(d)(4) to read as follows:

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§60.46b Compliance and performance test methods and procedures for particulate matter and nitrogen oxides.

* * * * *

(d) * * *

(4) For Method 5 of appendix A of this part, the temperature of the sample gas in the probe and filter holder is monitored and is maintained at 160 ± 5 °C (320 ± 9 °F).

* * * * *

Subpart Dc-Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units

10. Revise §60.45c(a)(5) to read as follows:

§60.45c Compliance and performance test methods and procedures for particulate matter.

(a) * * *

(5) For Method 5 or 5B of appendix A of this part, the temperature of the sample gas in the probe and filter holder shall be monitored and maintained at 160 ± 5 °C (320 ± 9 °F).

* * * * *

Subpart Ea-Standards of Performance for Municipal Waste Combustors for Which Construction is Commenced After December 20, 1989 and On or Before September 20, 1994

11. Revise §60.58a(b)(3) to read as follows:

§60.58a Compliance and performance testing.

* * * * *

(b) * * *

(3) Method 5 shall be used for determining compliance with the particulate matter emission limit. The minimum sample volume shall be 1.7 cubic meters (60 cubic feet). The probe and filter holder heating systems in the sample train shall be set to provide a gas temperature of $160^{\circ} \pm 5$ °Centigrade ($320^{\circ} \pm 9$ °Fahrenheit). An oxygen or carbon dioxide measurement shall be obtained simultaneously with each Method 5 run.

* * * * *

Subpart QQQQ-Standards of Performance for New Residential Wood Heaters, New Residential Hydronic Heaters and Forced Air Furnaces

12. Revise equation 8 in Method 28WHH to read as follows:

13.5.1 * * *

$$\sigma_i = (62.56 + (-.0003413 \times T_{3_i}) + (-.00006225 \times T_{3_i}^2)) 0.1337, \text{ lbs/gal} \quad \text{Eq. 8}$$

* * * * *

13. Revise section 12.1 in Method 2B of appendix A-1 to part 60 to read as follows:

Appendix A-1 to Part 60-Test Methods 1 through 2F

* * * * *

Method 2B-Determination of Exhaust Gas Volume Flow Rate From Gasoline Vapor Incinerators

* * * * *

12.1 Nomenclature.

* * *

(CO₂)_a = Ambient carbon dioxide concentration, ppm (if not measured during the test period, may be assumed to equal the global monthly mean CO₂ concentration posted at http://www.esrl.noaa.gov/gmd/ccgg/trends/global.html#global_data).

* * * * *

14. In appendix A-3 to part 60:

- a. Revise sections 2.0, 6.1.1.2, 6.1.1.6, 6.1.1.7, 6.1.1.9, and 8.5 in Method 5.
- b. Revise sections 2.0, 6.1, 8.2, 11.0 and 17.0 in Method 5B.
- c. Revise sections 2.1 and 8.5.2.2 in Method 5I.

The revisions read as follows:

Appendix A-3 to Part 60-Test Methods 4 through 5I

* * * * *

Method 5-Determination of Particulate Matter Emissions From Stationary Sources

* * * * *

2.0 Summary of Method. Particulate matter is withdrawn isokinetically from the source and collected on a glass fiber filter maintained at a temperature of 120 ±5 °C (248 ±9 °F) or such other temperature as specified by an applicable subpart of the standards or approved by the Administrator for a particular application. The PM mass, which includes any material that condenses at or above the filtration temperature, is determined gravimetrically after the removal of uncombined water.

* * * * *

6.1.1.2 Probe Liner. Borosilicate or quartz glass tubing with a heating system capable of maintaining a probe gas temperature during sampling of 120 ± 5 °C (248 ± 9 °F), or such other temperature as specified by an applicable subpart of the standards or as approved by the Administrator for a particular application. Since the actual temperature at the outlet of the probe is not usually monitored during sampling, probes constructed according to APTD-0581 and utilizing the calibration curves of APTD-0576 (or calibrated according to the procedure outlined in APTD-0576) will be considered acceptable. Either borosilicate or quartz glass probe liners may be used for stack temperatures up to about 480 °C (900 °F); quartz glass liners shall be used for temperatures between 480 and 900 °C (900 and 1,650 °F). Both types of liners may be used at higher temperatures than specified for short periods of time, subject to the approval of the Administrator. The softening temperature for borosilicate glass is 820 °C (1500 °F), and for quartz glass it is 1500 °C (2700 °F). Whenever practical, every effort should be made to use borosilicate or quartz glass probe liners. Alternatively, metal liners (e.g., 316 stainless steel, Incoloy 825 or other corrosion resistant metals) made of seamless tubing may be used, subject to the approval of the Administrator.

* * * * *

6.1.1.6 Filter Heating System. Any heating system capable of monitoring and maintaining temperature around the filter shall be used to ensure the sample gas temperature exiting the filter of 120 ± 5 °C (248 ± 9 °F) during sampling or such other temperature as specified by an applicable subpart of the standards or approved by the Administrator for a particular application. The monitoring and regulation of the temperature around the filter may be done with the filter temperature sensor or another temperature sensor.

6.1.1.7 Filter Temperature Sensor. A temperature sensor capable of measuring temperature to within ± 3 °C (5.4 °F) shall be installed so that the sensing tip of the temperature sensor is in direct contact with the

sample gas exiting the filter. The sensing tip of the sensor may be encased in glass, Teflon, or metal and must protrude at least $\frac{1}{2}$ in. into the sample gas exiting the filter. The filter temperature sensor must be monitored and recorded during sampling to ensure a sample gas temperature exiting the filter of 120 ± 5 °C (248 ± 9 °F), or such other temperature as specified by an applicable subpart of the standards or approved by the Administrator for a particular application.

* * * * *

6.1.1.9 Metering System. Vacuum gauge, leak-free pump, calibrated temperature sensors, dry gas meter (DGM) capable of measuring volume to within 2 percent, and related equipment, as shown in Figure 5-1. Other metering systems capable of maintaining sampling rates within 10 percent of isokinetic and of determining sample volumes to within 2 percent may be used, subject to the approval of the Administrator. When the metering system is used in conjunction with a pitot tube, the system shall allow periodic checks of isokinetic rates. The average DGM temperature for use in the calculations of Section 12.0 may be obtained by averaging the two temperature sensors located at the inlet and outlet of the DGM as shown in Figure 5-3 or alternatively from a single temperature sensor located at the immediate outlet of the DGM or the plenum of the DGM.

* * * * *

8.5 Sampling Train Operation. During the sampling run, maintain an isokinetic sampling rate (within 10 percent of true isokinetic unless otherwise specified by the Administrator) and a sample gas temperature through the filter of 120 ± 5 °C (248 ± 9 °F) or such other temperature as specified by an applicable subpart of the standards or approved by the Administrator. Note: After startup of the sampling system, it may take several minutes to equilibrate the system and temperature reading to within the required temperature threshold.

* * * * *

Method 5B-Determination of Nonsulfuric Acid Particulate Matter Emissions From Stationary Sources

* * * * *

2.0 Summary of Method

Particulate matter is withdrawn isokinetically from the source and collected on a glass fiber filter maintained at a temperature of 160 ± 5 °C (320 ± 9 °F). The collected sample is then heated in an oven at 160 °C (320 °F) for 6 hours to volatilize any condensed sulfuric acid that may have been collected, and the nonsulfuric acid particulate mass is determined gravimetrically.

* * * * *

6.1 Sample Collection.

The probe liner heating system and filter heating system must be capable of maintaining a sample gas temperature of 160 ± 5 °C (320 ± 9 °F).

* * * * *

8.2 Probe and Filter Temperatures.

Maintain the probe outlet and filter temperatures at 160 ± 5 °C (320 ± 9 °F). Note: After start-up of the sampling system, it may take several minutes to equilibrate the system and temperature reading to within the required temperature threshold.

* * * * *

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11.0 Analytical Procedure

11.1 Record and report the data required on a sheet such as the one shown in Figure 5B-1.

11.2 Handle each sample container as follows:

11.2.1 Container No. 1. Leave the contents in the shipping container or transfer the filter and any loose PM from the sample container to a tared glass weighing dish. Oven dry the filter sample at a temperature of 160 ± 5 °C (320 ± 9 °F) for 6 hours. Cool in a desiccator for 2 hours, and weigh to constant weight. Report the results to the nearest 0.1 mg. For the purposes of this section, the term “constant weight” means a difference of no more than 0.5 mg or 1 percent of total weight less tare weight, whichever is greater, between two consecutive weighings, with no less than 6 hours of desiccation time between weighings.

11.2.2 Container No. 2. Note the level of liquid in the container, and confirm on the analysis sheet whether leakage occurred during transport. If a noticeable amount of leakage has occurred, either void the sample or use methods, subject to the approval of the Administrator, to correct the final results. Measure the liquid in this container either volumetrically to ± 1 ml or gravimetrically to ± 0.5 g. Transfer the contents to a tared 250 ml beaker, and evaporate to dryness at ambient temperature and pressure. Then oven dry the probe sample at a temperature of 160 ± 5 °C (320 ± 9 °F) for 6 hours. Cool in a desiccator for 2 hours, and weigh to constant weight. Report the results to the nearest 0.1 mg.

11.2.3 Container No. 3. Weigh the spent silica gel (or silica gel plus impinger) to the nearest 0.5 g using a balance. This step may be conducted in the field.

11.2.4 Acetone Blank Container. Measure the acetone in this container either volumetrically or gravimetrically. Transfer the acetone to a tared 250 ml beaker, and evaporate to dryness at ambient

temperature and pressure. Desiccate for 24 hours, and weigh to a constant weight. Report the results to the nearest 0.1 mg.

NOTE: The contents of Container No. 2 as well as the acetone blank container may be evaporated at temperatures higher than ambient. If evaporation is done at an elevated temperature, the temperature must be below the boiling point of the solvent; also, to prevent “bumping,” the evaporation process must be closely supervised, and the contents of the beaker must be swirled occasionally to maintain an even temperature. Use extreme care, as acetone is highly flammable and has a low flash point.

* * * * *

17.0 Tables, Diagrams, Flowcharts, and Validation Data

Container number	Weight of particulate collected, mg		
	Final weight	Tare weight	Weight gain
1.			
2.			
Total:			
Less acetone blank			
Weight of particulate matter			
	Volume of liquid water collected		
	Impinger volume, ml	Silica gel weight, g	

Final		
Initial		
Liquid collected		
Total volume collected		g* ml

*Convert weight of water to volume by dividing total weight increase by density of water (1 g/ml).

Figure 5B-1. Analytical Data Sheet

* * * * *

Method 5I-Determination of Low Level Particulate Emissions from Stationary Sources

* * * * *

2.1. Description. The system setup and operation is essentially identical to Method 5. Particulate is withdrawn isokinetically from the source and collected on a 47 mm glass fiber filter maintained at a temperature of 120 ± 5 °C (248 ± 9 °F). The PM mass is determined by gravimetric analysis after the removal of uncombined water. Specific measures in this procedure designed to improve system performance at low particulate levels include:

1. Improved sample handling procedures
2. Light weight sample filter assembly
3. Use of low residue grade acetone

Accuracy is improved through the minimization of systemic errors associated with sample handling and weighing procedures. High purity reagents, all glass, grease free, sample train components, and light

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weight filter assemblies and beakers, each contribute to the overall objective of improved precision and accuracy at low particulate concentrations.

* * * * *

8.5.2.2 Care should be taken to maintain the filter box temperature of the paired trains as close as possible to the Method required temperature of 120 ± 5 °C (248 ± 9 °F). If separate ovens are being used for simultaneously operated trains, it is recommended that the oven temperature of each train be maintained within ± 5 °C (± 9 °F) of each other. Note: After startup of the sampling system, it may take several minutes to equilibrate the system and temperature reading to within the required temperature threshold.

* * * * *

15. In appendix A-4 to part 60:

- a. Revise sections 10.1.2 and 11.3 in Method 7.
- b. Renumber sections 6.1.1.1 through 6.1.1.4 to 6.1.1.2 through 6.1.1.5 in Method 8.
- c. Add a new section 6.1.1.1 in Method 8.
- d. Revise Figure 8-1 in Method 8.

Appendix A-4 to Part 60-Test Methods 6 Through 10B

* * * * *

Method 7-Determination of Nitrogen Oxide Emissions From Stationary Sources

* * * * *

10.1.2 Determination of Spectrophotometer Calibration Factor K_c . Add 0 ml, 2.0 ml, 4.0 ml, 6.0 ml, and 8.0 ml of the KNO_3 working standard solution (1 ml = 100 μg NO_2) to a series of five 50-ml volumetric flasks. To each flask, add 25 ml of absorbing solution and 10 ml water. Add 1 N NaOH to each flask until the pH is between 9 and 12 (about 25 to 35 drops). Dilute to the mark with water. Mix thoroughly, and pipette a 25-ml aliquot of each solution into a separate porcelain evaporating dish. Beginning with the evaporation step, follow the analysis procedure of section 11.2 until the solution has been transferred to the 100-ml volumetric flask and diluted to the mark. Measure the absorbance of each solution at the optimum wavelength as determined in section 10.1.1.2. This calibration procedure must be repeated on each day that samples are analyzed. Calculate the spectrophotometer calibration factor as shown in section 12.2.

* * * * *

11.3 Sample Analysis. Mix the contents of the flask thoroughly, and measure the absorbance at the optimum wavelength used for the standards (Section 10.1.1.2), using the blank solution as a zero reference. Dilute the sample and the blank with equal volumes of water if the absorbance exceeds A_4 , the absorbance of the 400- μg NO_2 standard (see section 10.1.3).

* * * * *

Method 8-Determination of Sulfuric Acid and Sulfur Dioxide Emissions From Stationary Sources

* * * * *

6.1.1.1 Probe Nozzle. Borosilicate or quartz glass with a sharp, tapered leading edge and coupled to the probe liner using a Teflon union. When the stack temperature exceeds 210 °C (410 °F), a leak-free ground glass fitting or other leak free, non-contaminating fitting must be used to couple the nozzle to the

probe liner. It is also acceptable to use a one-piece glass nozzle/liner assembly. The angle of the taper shall be $\leq 30^\circ$, and the taper shall be on the outside to preserve a constant internal diameter. The probe nozzle shall be of the button-hook or elbow design, unless otherwise specified by the Administrator. Other materials of construction may be used, subject to the approval of the Administrator. A range of nozzle sizes suitable for isokinetic sampling should be available. Typical nozzle sizes range from 0.32 to 1.27 cm ($\frac{1}{8}$ to $\frac{1}{2}$ in) inside diameter (ID) in increments of 0.16 cm ($\frac{1}{16}$ in). Larger nozzle sizes are also available if higher volume sampling trains are used.

6.1.1.2 Probe Liner. Borosilicate or quartz glass, with a heating system to prevent visible condensation during sampling. Do not use metal probe liners.

6.1.1.3 Filter Holder. Borosilicate glass, with a glass frit filter support and a silicone rubber gasket. Other gasket materials (*e.g.*, Teflon or Viton) may be used, subject to the approval of the Administrator. The holder design shall provide a positive seal against leakage from the outside or around the filter. The filter holder shall be placed between the first and second impingers. Do not heat the filter holder.

6.1.1.4 Impingers. Four, of the Greenburg-Smith design, as shown in Figure 8-1. The first and third impingers must have standard tips. The second and fourth impingers must be modified by replacing the insert with an approximately 13-mm ($\frac{1}{2}$ -in.) ID glass tube, having an unstricted tip located 13 mm ($\frac{1}{2}$ in.) from the bottom of the impinger. Similar collection systems, subject to the approval of the Administrator, may be used.

6.1.1.5 Temperature Sensor. Thermometer, or equivalent, to measure the temperature of the gas leaving the impinger train to within 1 °C (2 °F).

* * * * *

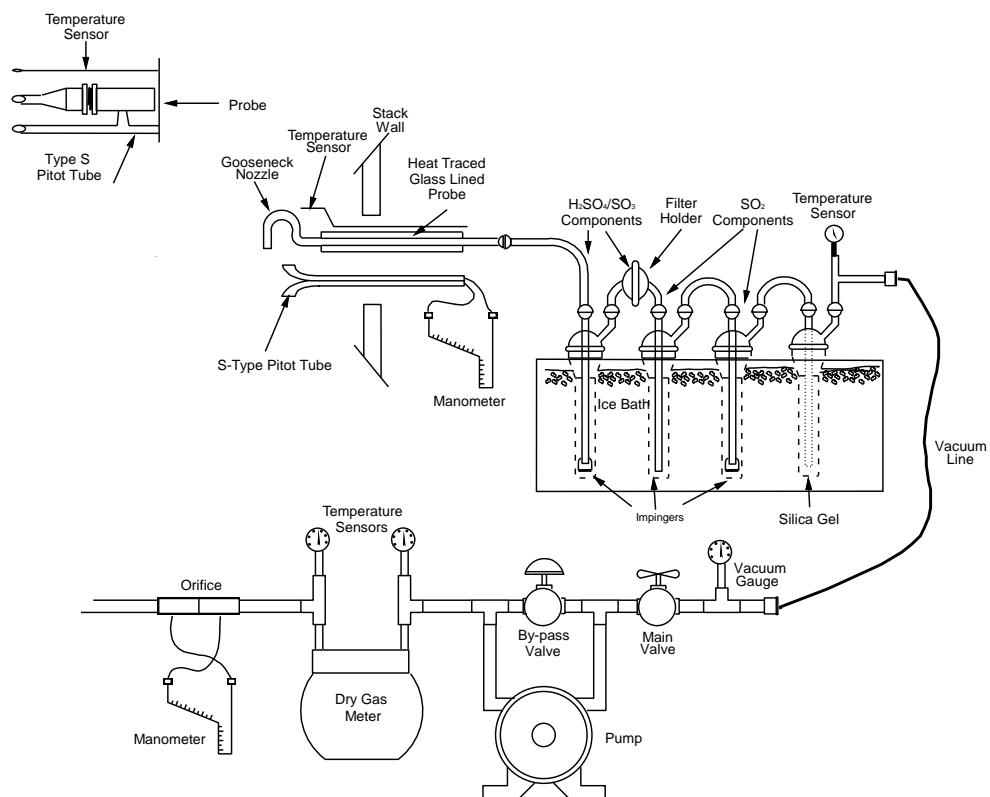


Figure 8-1. Sulfuric Acid Sampling Train

* * * * *

16. Redesignate paragraph (c) as paragraph (b) in section 13.1 in Method 18 of appendix A-6 to part 60 to read as follows:

Appendix A-6 to Part 60-Test Methods 16 Through 18

* * * * *

Method 18-Measurement of Gaseous Organic Compound Emissions By Gas Chromatography

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* * * * *

13.1 * * *

(b) Recovery. After developing an appropriate sampling and analytical system for the pollutants of interest, conduct the procedure in section 8.4. Conduct the appropriate recovery study in section 8.4 at each sampling point where the method is being applied. Submit the data and results of the recovery procedure with the reporting of results under section 8.3.

* * * * *

17. In appendix A-7 to part 60:

- a. Revise sections 11.2.1 and 11.2.2 in Method 22.
- b. Add section 11.2.3 in Method 22.

The revisions read as follows:

Appendix A-7 to Part 60-Test Methods 19 Through 25E

* * * * *

Method 22-Visual Determination of Fugitive Emissions From Material Sources and Smoke Emissions From Flames

* * * * *

11.2.1 Outdoor Location. Record the following information on the field data sheet (Figure 22–1):

Company name, industry, process unit, observer's name, observer's affiliation, and date. Record also the estimated wind speed, wind direction, and sky condition. Sketch the process unit being observed, and

note the observer location relative to the source and the sun. Indicate the potential and actual emission points on the sketch. Alternatively, digital photography as described in Section 11.2.3 may be used for a subset of the recordkeeping requirements of this section.

11.2.2 Indoor Location. Record the following information on the field data sheet (Figure 22–2):

Company name, industry, process unit, observer's name, observer's affiliation, and date. Record as appropriate the type, location, and intensity of lighting on the data sheet. Sketch the process unit being observed, and note the observer location relative to the source. Indicate the potential and actual fugitive emission points on the sketch. Alternatively, digital photography as described in Section 11.2.3 may be used for a subset of the recordkeeping requirements of this section.

11.2.3 Digital Photographic Records. Digital photographs, annotated or unaltered, may be used to record and report sky conditions, observer's location relative to the source, observer's location relative to the sun, process unit being observed, potential emission points and actual emission points for the requirements in Sections 11.2.1 and 11.2.2. The image must have the proper lighting, field of view and depth of field to properly distinguish the sky condition (if applicable), process unit, potential emission point and actual emission point. At least one digital photograph must be from the point of the view of the observer. The photograph(s) representing the environmental conditions must be taken within reasonable time of the observation (i.e., 15 mins). Any photographs altered or annotated must be retained in an unaltered format for recordkeeping purposes.

* * * * *

18. In appendix A-8 to part 60:

- a. Revise section 6.2.2 in Method 26.
- b. Revise section 6.2.1 in Method 26A.
- c. Add section 6.2.4 in Method 26A.

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The revisions read as follows:

Appendix A-8 to Part 60-Test Methods 26 Through 30B

* * * * *

Method 26-Determination of Hydrogen Halide Emissions From Stationary Sources Non-Isokinetic

Method

* * * * *

6.2.2 Storage Bottles. 100- or 250-ml, high-density polyethylene or glass sample storage containers with Teflon screw cap liners to store impinger samples.

* * * * *

Method 26A-Determination of Hydrogen Halide and Halogen Emissions From Stationary Sources

Isokinetic Method

* * * * *

6.2.1 Probe-Liner and Probe-Nozzle Brushes, Wash Bottles, Petri Dishes, Graduated Cylinder and/or Balance, and Rubber Policeman. Same as Method 5, sections 6.2.1, 6.2.2, 6.2.4, 6.2.5, and 6.2.7.

* * * * *

6.2.4 Sample Storage Containers. High-density polyethylene or glass sample storage containers with Teflon screw cap liners to store impinger samples.

* * * * *

19. In appendix B to part 60:

- a. Revise sections 2.1, 3.1, 6.1, 8.1(1), 8.1(3)(ii), 8.2(1), 8.2(2), 8.2(3), 9.0, 12.1, 13.1, 13.2, and 16.0 8. in Performance Specification 1.
- b. Revise section 13.2 in Performance Specification 2.
- c. Revise sections 12.0 and 13.2 in Performance Specification 3.
- d. Revise section 13.1 in Performance Specification 11.
- e. Add section 13.0 in Performance Specification 15.
- f. Revise section 11.8.7 and table 1 in Performance Specification 18.
- g. Add section 12.0 to Appendix A of Performance Specification 18.

The revisions read as follows:

Appendix B to Part 60-Performance Specifications

* * * * *

Performance Specification 1-Specifications and Test Procedures for Continuous Opacity

Monitoring Systems in Stationary Sources

* * * * *

2.1 ASTM D6216-12 is the reference for design specifications, manufacturer's performance specifications, and test procedures. The opacity monitor manufacturer must periodically select and test an opacity monitor, that is representative of a group of monitors produced during a specified period or lot, for conformance with the design specifications in ASTM D6216-12. The opacity monitor manufacturer must test each opacity monitor for conformance with the manufacturer's performance specifications in ASTM D6216-12. Note: If the initial certification of the opacity monitor occurred

before [insert date of publication in the *Federal Register*] using D6216-98, D6216-03, or D6216-07, it is not necessary to recertify using D6216-12.

* * * * *

3.1 All definitions and discussions from section 3 of ASTM D6216-12 are applicable to PS-1.

* * * * *

6.1 *Continuous Opacity Monitoring System*. You, as owner or operator, are responsible for purchasing an opacity monitor that meets the specifications of ASTM D6216-12, including a suitable data recorder or automated data acquisition handling system. Example data recorders include an analog strip chart recorder or more appropriately an electronic data acquisition and reporting system with an input signal range compatible with the analyzer output.

* * * * *

8.1 * * *

(1) You must purchase an opacity monitor that complies with ASTM D6216-12 and obtain a certificate of conformance from the opacity monitor manufacturer.

(2) * * *

(3) * * *

(ii) Calibration Error Check. Conduct a three-point calibration error test using three calibration attenuators that produce outlet pathlength corrected, single-pass opacity values shown in ASTM D6216-12, section 7.5. If your applicable limit is less than 10 percent opacity, use attenuators as described in

ASTM D6216-12, section 7.5 for applicable standards of 10 to 19 percent opacity. Confirm the external

audit device produces the proper zero value on the COMS data recorder. Separately, insert each calibration attenuators (low, mid, and high-level) into the external audit device. While inserting each attenuator, (1) ensure that the entire light beam passes through the attenuator, (2) minimize interference from reflected light, and (3) leave the attenuator in place for at least two times the shortest recording interval on the COMS data recorder. Make a total of five nonconsecutive readings for each attenuator. At the end of the test, correlate each attenuator insertion to the corresponding value from the data recorder. Subtract the single-pass calibration attenuator values corrected to the stack exit conditions from the COMS responses. Calculate the arithmetic mean difference, standard deviation, and confidence coefficient of the five measurements value using equations 1-3, 1-4, and 1-5. Calculate the calibration error as the sum of the absolute value of the mean difference and the 95 percent confidence coefficient for each of the three test attenuators using equation 1-6. Report the calibration error test results for each of the three attenuators.

* * * * *

8.2 * * *

- (1) Conduct the verification procedures for design specifications in section 6 of ASTM D6216-12.
- (2) Conduct the verification procedures for performance specifications in section 7 of ASTM D6216-12.
- (3) Provide to the owner or operator, a report of the opacity monitor's conformance to the design and performance specifications required in sections 6 and 7 of ASTM D6216-12 in accordance with the reporting requirements of section 9 in ASTM D6216-12.

* * * * *

9.0 *What quality control measures are required by PS-1?*

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Opacity monitor manufacturers must initiate a quality program following the requirements of ASTM D6216-12, section 8. The quality program must include (1) a quality system and (2) a corrective action program.

* * * * *

12.1 Desired Attenuator Values. Calculate the desired attenuator value corrected to the emission outlet pathlength as follows:

$$OP_2 = 1 - (1 - OP_1)^{\frac{L_2}{L_1}} \quad Eq. 11$$

Where:

OP_1 = Nominal opacity value of required low-, mid-, or high-range calibration attenuators.

OP_2 = Desired attenuator opacity value from ASTM D6216-12, section 7.5 at the opacity limit required by the applicable subpart.

L_1 = Monitoring pathlength.

L_2 = Emission outlet pathlength.

* * * * *

13.1 Design Specifications. The opacity monitoring equipment must comply with the design specifications of ASTM D6216-12.

13.2 Manufacturer's Performance Specifications. The opacity monitor must comply with the manufacturer's performance specifications of ASTM D6216-12.

* * * * *

16.0 * * *

8. ASTM D6216-12: Standard Practice for Opacity Monitor Manufacturers to Certify Conformance with Design and Performance Specifications. American Society for Testing and Materials (ASTM). April 1998.

* * * * *

Performance Specification 2-Specifications and Test Procedures for SO₂ and NO_x Continuous Emission Monitoring Systems in Stationary Sources

* * * * *

13.2 Relative Accuracy Performance Specification.

	Calculate...	RA Criteria
If average emissions during the RATA are $\geq 50\%$ of emission standard	Use Eq. 2-6, with RM in the denominator	$\leq 20.0\%$
If average emissions during the RATA are $< 50\%$ of emission standard	Use Eq. 2-6, emission standard in the denominator	$\leq 10.0\%$
For SO ₂ emission standards ≤ 130 but ≥ 86 ng/J (0.30 and 0.20 lb/million Btu)	Use Eq. 2-6, emission standard in the denominator	$\leq 15.0\%$
For SO ₂ emission standards < 86 ng/J (0.20 lb/million Btu)	Use Eq. 2-6, emission standard in the denominator	$\leq 20.0\%$

* * * * *

Performance Specification 3-Specifications and Test Procedures for O₂ and CO₂ Continuous Emission Monitoring Systems in Stationary Sources

* * * * *

12.0 Calculations and Data Analysis

Summarize the results on a data sheet similar to that shown in Figure 2.2 of PS2.

$$RA = \frac{[|\bar{d}| + |CC|]}{\overline{RM}} \times 100 \quad \text{Eq. 3-1}$$

Where:

$|\bar{d}|$ = Absolute value of the mean of the differences (from Equation 2-3 of Performance Specification 2).

$|CC|$ = Absolute value of the confidence coefficient (from Equation 2-5 of Performance Specification 2).

\overline{RM} = Average Reference Method Value

$$RA = |\overline{RM} - \overline{CEMS}| \quad \text{Eq. 3 - 2}$$

\overline{RM} = Average Reference Method Value

\overline{CEMS} = Average CEMS Value

* * * * *

13.2 CEMS Relative Accuracy Performance Specification. The RA of the CEMS must be no greater than 20.0 percent of the mean value of the reference method (RM) data when calculated using equation 3-1. The results are also acceptable if the result of Equation 3-2 is less than or equal to 1.0 percent O₂ (or CO₂).

* * * * *

**Performance Specification 11-Specifications and Test Procedures for Particulate Matter
Continuous Emission Monitoring Systems at Stationary Sources**

* * * * *

13.1 What is the 7-day drift check performance specification? Your daily PM CEMS internal drift checks must demonstrate that the daily drift of your PM CEMS does not deviate from the value of the reference light, optical filter, Beta attenuation signal, or other technology-suitable reference standard by more than 2 percent of the response range. If your CEMS includes diluent and/or auxiliary monitors (for temperature, pressure, and/or moisture) that are employed as a necessary part of this performance specification, you must determine the calibration drift separately for each ancillary monitor in terms of its respective output (see the appropriate performance specification for the diluent CEMS specification). None of the calibration drifts may exceed their individual specification.

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**Performance Specification 15-Performance Specification for Extractive FTIR Continuous
Emissions Monitor Systems in Stationary Sources**

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13.0 Method Performance [Reserved]

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**Performance Specification 18-Performance Specifications and Test Procedures for Gaseous
Hydrogen Chloride (HCl) Continuous Emission Monitoring Systems at Stationary Sources**

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11.8.7 The zero-level and mid-level CD for each day must be less than 5.0 percent of the span value as specified in section 13.2 of this PS. You must meet this criterion for 7 consecutive operating days.

* * * * *

TABLE 1—INTERFERENCE TEST GAS CONCENTRATIONS

Potential interferent gas ¹	Approximate concentration (balance N ₂)
CO ₂	15% ± 1% CO ₂ . ²
CO	100 ± 20 ppm.
CH ₂ O	20 ± 5 ppm.
CH ₄	100 ± 20 ppm.
NH ₃	10 ± 5 ppm (extractive CEMS only).
NO	250 ± 50 ppm.
SO ₂	200 ± 20 ppm.
O ₂	3% ± 1% O ₂ . ²
H ₂ O	10% ± 1% H ₂ O. ²
N ₂	Balance. ²

¹Any of these specific gases can be tested at a lower level if the manufacturer has provided reliable means for limiting or scrubbing that gas to a specified level in CEMS field installations.

²Gases for short path IP cell interference tests cannot be added above 100 percent stack equivalent concentration. Add these gases at the indicated percentages to make up the remaining cell volume.

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PS-18 Appendix A Standard Addition Procedures

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12.0 Reserved

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20. Revise sections 5.1.2(1) and 5.1.2(3) in Procedure 1 of appendix F to part 60 to read as follows:

Appendix F to Part 60-Quality Assurance Procedures

Procedure 1-Quality Assurance Requirements for Gas Continuous Emission Monitoring Systems Used For Compliance Determination

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5.1.2 Cylinder Gas Audit (CGA). If applicable, a CGA may be conducted in three of four calendar quarters, but in no more than three quarters in succession.

To conduct a CGA: (1) Challenge the CEMS (both pollutant and diluent portions of the CEMS, if applicable) with an audit gas of known concentration at two points within the following ranges:

Audit point	Pollutant monitors	Audit range	
		Diluent monitors for—	
		CO ₂	O ₂
1	20 to 30% of span value	5 to 8% by volume	4 to 6% by volume.
2	50 to 60% of span value	10 to 14% by volume	8 to 12% by volume.

Inject each of the audit gases, three times each for a total of six injections. Inject the gases in such a manner that the entire CEMS is challenged. Do not inject the same gas concentration twice in succession.

Use of separate audit gas cylinder for audit points 1 and 2. Do not dilute gas from audit cylinder when challenging the CEMS.

The monitor should be challenged at each audit point for a sufficient period of time to assure adsorption-desorption of the CEMS sample transport surfaces has stabilized.

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(2) Operate each monitor in its normal sampling mode, i.e., pass the audit gas through all filters, scrubbers, conditioners, and other monitor components used during normal sampling, and as much of the sampling probe as is practical. At a minimum, the audit gas should be introduced at the connection between the probe and the sample line.

(3) Use Certified Reference Materials (CRM's) (See Citation 1) audit gases that have been certified by comparison to National Institute of Standards and Technology (NIST) Standard Reference Materials (SRM's) or EPA Protocol Gases following the most recent edition of the EPA Traceability Protocol for Assay and Certification of Gaseous Calibration Standards (See Citation 2). Procedures for preparation of CRM's are described in Citation 1. Procedures for preparation of EPA Protocol Gases are described in Citation 2. In the case that a suitable audit gas level is not commercially available, Method 205 (See Citation 3) may be used to dilute CRM's or EPA Protocol Gases to the needed level. The difference between the actual concentration of the audit gas and the concentration indicated by the monitor is used to assess the accuracy of the CEMS.

* * * * *

PART 63-NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FOR SOURCE CATEGORIES

21. The authority citation for part 63 continues to read as follows:

Authority: 42 U.S.C. 7401 *et seq.*

22. In §63.7, revise paragraphs (g)(2) and (g)(2)(v) to read as follows:

§63.7(g)(2) Contents of a performance test, CMS performance evaluation, or CMS quality assurance test report (electronic or paper submitted copy). Unless otherwise specified in a relevant standard, test

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method, CMS performance specification, or quality assurance requirement for a CMS, or as otherwise approved by the Administrator in writing, the report shall include the elements identified in paragraphs (g)(2)(i) through (vi) of this section.

(i) General identification information for the facility including a mailing address, the physical address, the owner or operator or responsible official (where applicable) and his/her email address, and the appropriate Federal Registry System (FRS) number for the facility.

(ii) Purpose of the test including the applicable regulation requiring the test, the pollutant(s) and other parameters being measured, the applicable emission standard, and any process parameter component, and a brief process description.

(iii) Description of the emission unit tested including fuel burned, control devices, and vent characteristics; the appropriate source classification code (SCC); the permitted maximum process rate (where applicable); and the sampling location.

(iv) Description of sampling and analysis procedures used and any modifications to standard procedures, quality assurance procedures and results, record of process operating conditions that demonstrate the applicable test conditions are met, and values for any operating parameters for which limits were being set during the test.

(v) Where a test method, CMS performance specification, or on-going quality assurance requirement for a CMS requires you record or report, the following shall be included in your report: Record of preparation of standards, record of calibrations, raw data sheets for field sampling, raw data sheets for field and laboratory analyses, chain-of-custody documentation, and example calculations for reported results.

(vi) Identification of the company conducting the performance test including the primary office address, telephone number, and the contact for this test including his/her email address.

* * * * *

23. In §63.8, revise paragraph (e)(5) to read as follows:

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§63.8(e)(5) *Reporting performance evaluation results.* (i) The owner or operator shall furnish the Administrator a copy of a written report of the results of the performance evaluation containing the information specified in §63.7(g)(2)(i) through (vi) within 60 days of completion of the performance evaluation, unless otherwise specified in a relevant standard.

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Subpart NNN-National Emission Standards for Hazardous Air Pollutants for Wool Fiberglass Manufacturing

24. Revise §63.1385(a)(5) to read as follows:

§63.1385 Test methods and procedures.

(a) * * *

(5) Method 5 or Method 29 (40 CFR part 60, appendix A-3) for the concentration of total PM. When using Method 5, each run must consist of a minimum sample volume of 2 dry standard cubic meters (dscm). When using Method 29, each run must consist of a minimum sample volume of 3 dscm. When measuring PM concentration using either Method 5 or 29, the probe and filter holder heating system must be set to provide a gas temperature no greater than 120 ± 5 °C (248 ± 9 °F).

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Subpart DDDDD-National Emission Standards for Hazardous Air Pollutants for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters

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25. Revise Table 6 to Subpart DDDDD of part 63 to read as follows:

Table 6 to Subpart DDDDD of Part 63—Fuel Analysis Requirements

As stated in § 63.7521, you must comply with the following requirements for fuel analysis testing for existing, new or reconstructed affected sources. However, equivalent methods (as defined in § 63.7575) may be used in lieu of the prescribed methods at the discretion of the source owner or operator:

To conduct a fuel analysis for the following pollutant . . .	You must . . .	Using . . .
1. Mercury	a. Collect fuel samples	Procedure in § 63.7521(c) or ASTM D5192 ^a , or ASTM D7430 ^a , or ASTM D6883 ^a , or ASTM D2234/D2234M ^a (for coal) or EPA 1631 or EPA 1631E or ASTM D6323 ^a (for solid), or EPA 821-R-01-013 (for liquid or solid), or ASTM D4177 ^a (for liquid), or ASTM D4057 ^a (for liquid), or equivalent.
	b. Composite fuel samples	Procedure in § 63.7521(d) or equivalent.
	c. Prepare composited fuel samples	EPA SW-846-3050B ^a (for solid samples), ASTM D2013/D2013M ^a (for coal), ASTM D5198 ^a (for biomass), or EPA 3050 ^a (for solid fuel), or EPA 821-R-01-013 ^a (for liquid or solid), or equivalent.
	d. Determine heat content of the fuel type	ASTM D5865 ^a (for coal) or ASTM E711 ^a (for biomass), or ASTM D5864 ^a for liquids and other solids, or ASTM D240 ^a or equivalent.
	e. Determine moisture content of the fuel type	ASTM D3173 ^a , ASTM E871 ^a , or ASTM D5864 ^a , or ASTM D240, or ASTM D95 ^a (for liquid fuels), or ASTM D4006 ^a (for liquid fuels), or equivalent.
	f. Measure mercury concentration in fuel sample	ASTM D6722 ^a (for coal), EPA SW-846-7471B ^a or EPA 1631 or EPA 1631E (for solid samples), or EPA SW-846-7470A ^a or EPA SW-846-7471B ^a (for liquid samples), or EPA 821-R-01-013 (for liquid or solid), or equivalent.
	g. Convert concentration into units of pounds of mercury per MMBtu of heat content	For fuel mixtures use Equation 8 in § 63.7530.
2. HCl	a. Collect fuel samples	Procedure in § 63.7521(c) or ASTM D5192 ^a , or ASTM D7430 ^a , or ASTM D6883 ^a , or ASTM D2234/D2234M ^a (for coal) or ASTM D6323 ^a (for coal

		or biomass), ASTM D4177 ^a (for liquid fuels) or ASTM D4057 ^a (for liquid fuels), or equivalent.
	b. Composite fuel samples	Procedure in § 63.7521(d) or equivalent.
	c. Prepare composited fuel samples	EPA SW-846-3050B ^a (for solid samples), ASTM D2013/D2013M ^a (for coal), or ASTM D5198 ^a (for biomass), or EPA 3050 ^a or equivalent.
	d. Determine heat content of the fuel type	ASTM D5865 ^a (for coal) or ASTM E711 ^a (for biomass), ASTM D5864, ASTM D240 ^a or equivalent.
	e. Determine moisture content of the fuel type	ASTM D3173 ^a or ASTM E871 ^a , or D5864 ^a , or ASTM D240 ^a , or ASTM D95 ^a (for liquid fuels), or ASTM D4006 ^a (for liquid fuels), or equivalent.
	f. Measure chlorine concentration in fuel sample	EPA SW-846-9250 ^a , ASTM D6721 ^a , ASTM D4208 ^a (for coal), or EPA SW-846-5050 ^a or ASTM E776 ^a (for solid fuel), or EPA SW-846-9056 ^a or SW-846-9076 ^a (for solids or liquids) or equivalent.
	g. Convert concentrations into units of pounds of HCl per MMBtu of heat content	For fuel mixtures use Equation 7 in § 63.7530 and convert from chlorine to HCl by multiplying by 1.028.
3. Mercury Fuel Specification for other gas 1 fuels	a. Measure mercury concentration in the fuel sample and convert to units of micrograms per cubic meter, or	Method 30B (M30B) at 40 CFR part 60, appendix A-8 of this chapter or ASTM D5954 ^a , ASTM D6350 ^a , ISO 6978-1:2003(E) ^a , or ISO 6978-2:2003(E) ^a , or EPA-1631 ^a or equivalent.
	b. Measure mercury concentration in the exhaust gas when firing only the other gas 1 fuel is fired in the boiler or process heater	Method 29, 30A, or 30B (M29, M30A, or M30B) at 40 CFR part 60, appendix A-8 of this chapter or Method 101A or Method 102 at 40 CFR part 61, appendix B of this chapter, or ASTM Method D6784 ^a or equivalent.
4. TSM	a. Collect fuel samples	Procedure in § 63.7521(c) or ASTM D5192 ^a , or ASTM D7430 ^a , or ASTM D6883 ^a , or ASTM D2234/D2234M ^a (for coal) or ASTM D6323 ^a (for coal or biomass), or ASTM D4177 ^a ,(for liquid fuels)or ASTM D4057 ^a (for liquid fuels),or equivalent.
	b. Composite fuel samples	Procedure in § 63.7521(d) or equivalent.
	c. Prepare composited fuel samples	EPA SW-846-3050B ^a (for solid samples), ASTM D2013/D2013M ^a (for coal), ASTM D5198 ^a or TAPPI T266 ^a (for biomass), or EPA 3050 ^a or equivalent.
	d. Determine heat content of the fuel type	ASTM D5865 ^a (for coal) or ASTM E711 ^a (for biomass), or ASTM D5864 ^a for liquids and other solids, or ASTM D240 ^a or equivalent.

	e. Determine moisture content of the fuel type	ASTM D3173 ^a or ASTM E871 ^a , or D5864, or ASTM D240 ^a , or ASTM D95 ^a (for liquid fuels), or ASTM D4006 ^a (for liquid fuels), or ASTM D4177 ^a (for liquid fuels) or ASTM D4057 ^a (for liquid fuels), or equivalent.
	f. Measure TSM concentration in fuel sample	ASTM D3683 ^a , or ASTM D4606 ^a , or ASTM D6357 ^a or EPA 200.8 ^a or EPA SW-846-6020 ^a , or EPA SW-846-6020A ^a , or EPA SW-846-6010C ^a , EPA 7060 ^a or EPA 7060A ^a (for arsenic only), or EPA SW-846-7740 ^a (for selenium only).
	g. Convert concentrations into units of pounds of TSM per MMBtu of heat content	For fuel mixtures use Equation 9 in § 63.7530.

^a Incorporated by reference, see § 63.14.

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Subpart UUUUU-National Emission Standards for Hazardous Air Pollutants: Coal- and Oil-Fired Electric Utility Steam Generating Units

26. Revise §63.10010(h)(7)(i)(1) to read as follows:

§63.10010 What are my monitoring, installation, operation, and maintenance requirements?

* * * * *

(h) * * *

(7) * * *

(i) * * *

(1) Install and certify your PM CEMS according to the procedures and requirements in Performance Specification 11—Specifications and Test Procedures for Particulate Matter Continuous Emission Monitoring Systems at Stationary Sources in Appendix B to part 60 of this chapter, using Method 5 at Appendix A-3 to part 60 of this chapter and ensuring that the front half filter temperature shall be 160°

± 5 °C ($320^\circ \pm 9$ °F). The reportable measurement output from the PM CEMS must be expressed in units of the applicable emissions limit (e.g., lb/MMBtu, lb/MWh).

* * * * *

Table 5 to Subpart UUUUU of Part 63—Performance Testing Requirements

As stated in §63.10007, you must comply with the following requirements for performance testing for existing, new or reconstructed affected sources:¹

To conduct a performance test for the following pollutant . . .	Using . . .	You must perform the following activities, as applicable to your input- or output-based emission limit . . .	Using . . . ²
1. Filterable Particulate matter (PM)	Emissions Testing	a. Select sampling ports location and the number of traverse points	Method 1 at appendix A-1 to part 60 of this chapter.
		b. Determine velocity and volumetric flow-rate of the stack gas	Method 2, 2A, 2C, 2F, 2G or 2H at appendix A-1 or A-2 to part 60 of this chapter.
		c. Determine oxygen and carbon dioxide concentrations of the stack gas	Method 3A or 3B at appendix A-2 to part 60 of this chapter, or ANSI/ASME PTC 19.10-1981. ³
		d. Measure the moisture content of the stack gas	Method 4 at appendix A-3 to part 60 of this chapter.
		e. Measure the filterable PM concentration	Methods 5 and 5I at appendix A-3 to part 60 of this chapter. For positive pressure fabric filters, Method 5D at appendix A-3 to part 60 of this chapter for filterable PM emissions. Note that the Method 5 or 5I front half temperature shall be $160^\circ \pm 14$ °C ($320^\circ \pm 25$ °F).
		f. Convert emissions concentration to lb/MMBtu or lb/MWh emissions rates	Method 19 F-factor methodology at appendix A-7 to part 60 of this chapter, or calculate using mass emissions rate and gross output data (see §63.10007(e)).
	OR	OR	

	PM CEMS	a. Install, certify, operate, and maintain the PM CEMS	Performance Specification 11 at appendix B to part 60 of this chapter and Procedure 2 at appendix F to part 60 of this chapter.
		b. Install, certify, operate, and maintain the diluent gas, flow rate, and/or moisture monitoring systems	Part 75 of this chapter and §63.10010(a), (b), (c), and (d).
		c. Convert hourly emissions concentrations to 30 boiler operating day rolling average lb/MMBtu or lb/MWh emissions rates	Method 19 F-factor methodology at appendix A-7 to part 60 of this chapter, or calculate using mass emissions rate and gross output data (see §63.10007(e)).
2. Total or individual non-Hg HAP metals	Emissions Testing	a. Select sampling ports location and the number of traverse points.	Method 1 at appendix A-1 to part 60 of this chapter.
		b. Determine velocity and volumetric flow-rate of the stack gas	Method 2, 2A, 2C, 2F, 2G or 2H at appendix A-1 or A-2 to part 60 of this chapter.
		c. Determine oxygen and carbon dioxide concentrations of the stack gas	Method 3A or 3B at appendix A-2 to part 60 of this chapter, or ANSI/ASME PTC 19.10-1981. ³
		d. Measure the moisture content of the stack gas	Method 4 at appendix A-3 to part 60 of this chapter.
		e. Measure the HAP metals emissions concentrations and determine each individual HAP metals emissions concentration, as well as the total filterable HAP metals emissions concentration and total HAP metals emissions concentration	Method 29 at appendix A-8 to part 60 of this chapter. For liquid oil-fired units, Hg is included in HAP metals and you may use Method 29, Method 30B at appendix A-8 to part 60 of this chapter; for Method 29, you must report the front half and back half results separately. When using Method 29, report metals matrix spike and recovery levels.
		f. Convert emissions concentrations (individual HAP metals, total filterable HAP metals, and total HAP metals) to lb/MMBtu or lb/MWh emissions rates	Method 19 F-factor methodology at appendix A-7 to part 60 of this chapter, or calculate using mass emissions rate and gross output data (see §63.10007(e)).
3. Hydrogen chloride (HCl)	Emissions Testing	a. Select sampling ports location and the number of traverse points.	Method 1 at appendix A-1 to part 60 of this chapter.

and hydrogen fluoride (HF)			
		b. Determine velocity and volumetric flow-rate of the stack gas	Method 2, 2A, 2C, 2F, 2G or 2H at appendix A-1 or A-2 to part 60 of this chapter.
		c. Determine oxygen and carbon dioxide concentrations of the stack gas	Method 3A or 3B at appendix A-2 to part 60 of this chapter, or ANSI/ASME PTC 19.10-1981. ³
		d. Measure the moisture content of the stack gas	Method 4 at appendix A-3 to part 60 of this chapter.
		e. Measure the HCl and HF emissions concentrations	Method 26 or Method 26A at appendix A-8 to part 60 of this chapter or Method 320 at appendix A to part 63 of this chapter or ASTM 6348-03 ³ with (1) the following conditions when using ASTM D6348-03: (A) The test plan preparation and implementation in the Annexes to ASTM D6348-03, Sections A1 through A8 are mandatory;
			(B) For ASTM D6348-03 Annex A5 (Analyte Spiking Technique), the percent (%) R must be determined for each target analyte (see Equation A5.5);
			(C) For the ASTM D6348-03 test data to be acceptable for a target analyte, %R must be $70\% \geq R \leq 130\%$; and

3.e.1(D) The %R value for each compound must be reported in the test report and all field measurements corrected with the calculated %R value for that compound using the following equation:

$$\text{Reported Result} = \frac{(\text{Measured Concentration in Stack})}{\%R} \times 100$$

and

To conduct a performance test for the following pollutant . . . (cont'd)	Using . . . (cont'd)	You must perform the following activities, as applicable to your input- or output-based emission limit . . . (cont'd)	Using . . . ² (cont'd)
			(2) spiking levels nominally no greater than two times the level corresponding to the applicable emission limit.

			Method 26A must be used if there are entrained water droplets in the exhaust stream.
		f. Convert emissions concentration to lb/MMBtu or lb/MWh emissions rates	Method 19 F-factor methodology at appendix A-7 to part 60 of this chapter, or calculate using mass emissions rate and gross output data (see §63.10007(e)).
	OR	OR	
	HCl and/or HF CEMS	a. Install, certify, operate, and maintain the HCl or HF CEMS	Appendix B of this subpart.
		b. Install, certify, operate, and maintain the diluent gas, flow rate, and/or moisture monitoring systems	Part 75 of this chapter and §63.10010(a), (b), (c), and (d).
		c. Convert hourly emissions concentrations to 30 boiler operating day rolling average lb/MMBtu or lb/MWh emissions rates	Method 19 F-factor methodology at appendix A-7 to part 60 of this chapter, or calculate using mass emissions rate and gross output data (see §63.10007(e)).
4. Mercury (Hg)	Emissions Testing	a. Select sampling ports location and the number of traverse points	Method 1 at appendix A-1 to part 60 of this chapter or Method 30B at Appendix A-8 for Method 30B point selection.
		b. Determine velocity and volumetric flow-rate of the stack gas	Method 2, 2A, 2C, 2F, 2G or 2H at appendix A-1 or A-2 to part 60 of this chapter.
		c. Determine oxygen and carbon dioxide concentrations of the stack gas	Method 3A or 3B at appendix A-1 to part 60 of this chapter, or ANSI/ASME PTC 19.10-1981. ³
		d. Measure the moisture content of the stack gas	Method 4 at appendix A-3 to part 60 of this chapter.
		e. Measure the Hg emission concentration	Method 30B at appendix A-8 to part 60 of this chapter, ASTM D6784, ³ or Method 29 at appendix A-8 to part 60 of this chapter; for Method 29, you must report the front half and back half results separately.

		f. Convert emissions concentration to lb/TBtu or lb/GWh emission rates	Method 19 F-factor methodology at appendix A-7 to part 60 of this chapter, or calculate using mass emissions rate and gross output data (see §63.10007(e)).
	OR	OR	
	Hg CEMS	a. Install, certify, operate, and maintain the CEMS	Sections 3.2.1 and 5.1 of appendix A of this subpart.
		b. Install, certify, operate, and maintain the diluent gas, flow rate, and/or moisture monitoring systems	Part 75 of this chapter and §63.10010(a), (b), (c), and (d).
		c. Convert hourly emissions concentrations to 30 boiler operating day rolling average lb/TBtu or lb/GWh emissions rates	Section 6 of appendix A to this subpart.
	OR	OR	
	Sorbent trap monitoring system	a. Install, certify, operate, and maintain the sorbent trap monitoring system	Sections 3.2.2 and 5.2 of appendix A to this subpart.
		b. Install, operate, and maintain the diluent gas, flow rate, and/or moisture monitoring systems	Part 75 of this chapter and §63.10010(a), (b), (c), and (d).
		c. Convert emissions concentrations to 30 boiler operating day rolling average lb/TBtu or lb/GWh emissions rates	Section 6 of appendix A to this subpart.
	OR	OR	
	LEE testing	a. Select sampling ports location and the number of traverse points	Single point located at the 10% centroidal area of the duct at a port location per Method 1 at appendix A-1 to part 60 of this chapter or Method 30B at Appendix A-8 for Method 30B point selection.
		b. Determine velocity and volumetric flow-rate of the stack gas	Method 2, 2A, 2C, 2F, 2G, or 2H at appendix A-1 or A-2 to part 60 of this chapter or flow monitoring system certified per appendix A of this subpart.

		c. Determine oxygen and carbon dioxide concentrations of the stack gas	Method 3A or 3B at appendix A-1 to part 60 of this chapter, or ANSI/ASME PTC 19.10-1981, ³ or diluent gas monitoring systems certified according to part 75 of this chapter.
		d. Measure the moisture content of the stack gas	Method 4 at appendix A-3 to part 60 of this chapter, or moisture monitoring systems certified according to part 75 of this chapter.
		e. Measure the Hg emission concentration	Method 30B at appendix A-8 to part 60 of this chapter; perform a 30 operating day test, with a maximum of 10 operating days per run (<i>i.e.</i> , per pair of sorbent traps) or sorbent trap monitoring system or Hg CEMS certified per appendix A of this subpart.
		f. Convert emissions concentrations from the LEE test to lb/TBtu or lb/GWh emissions rates	Method 19 F-factor methodology at appendix A-7 to part 60 of this chapter, or calculate using mass emissions rate and gross output data (see §63.10007(e)).
		g. Convert average lb/TBtu or lb/GWh Hg emission rate to lb/year, if you are attempting to meet the 29.0 lb/year threshold	Potential maximum annual heat input in TBtu or potential maximum electricity generated in GWh.
5. Sulfur dioxide (SO ₂)	SO ₂ CEMS	a. Install, certify, operate, and maintain the CEMS	Part 75 of this chapter and §63.10010(a) and (f).
		b. Install, operate, and maintain the diluent gas, flow rate, and/or moisture monitoring systems	Part 75 of this chapter and §63.10010(a), (b), (c), and (d).
		c. Convert hourly emissions concentrations to 30 boiler operating day rolling average lb/MMBtu or lb/MWh emissions rates	Method 19 F-factor methodology at appendix A-7 to part 60 of this chapter, or calculate using mass emissions rate and gross output data (see §63.10007(e)).

¹Regarding emissions data collected during periods of startup or shutdown, see §§63.10020(b) and (c) and 63.10021(h).

²See Tables 1 and 2 to this subpart for required sample volumes and/or sampling run times.

³Incorporated by reference, see §63.14.

* * * * *

27. In appendix A to Part 63:

- a. Revise section 12.4 in Method 303.
- b. Revise sections 2.0, 7.2.3.3, 8.1.2, 9.1, 11.3.2, 12.1, and 13.0 in Method 308.
- c. Remove section 7.2.2 in Method 308.
- d. Rename section 7.2.3 as 7.2.2 in Method 308.
- e. Add section 12.5 in Method 308.
- f. Revise sections 8.2.2.4 and 9.2.3 in Method 320.
- g. Revise section 12.9 in Method 323.
- h. Revise sections 8.2.1.3 and 8.2.3.2 and the label under Figure 8.1 in Method 325A.
- i. Add section 8.2.3.3 in Method 325A.
- j. Revise sections 9.3.2, 9.13, 11.3.2.5, and 12.2.2 and table 17-1 in Method 325B.
- k. Remove sections 12.2.3 and 12.2.4 in Method 325B.

The revisions read as follows:

Appendix A to Part 63-Test Methods Pollutant Measurement Methods From Various Waste Media

* * * * *

Method 303-Determination of Visible Emissions From By-Product Coke Oven Batteries

* * * * *

12.4 Average Duration of VE from Charging Operations. Use Equation 303-3 to calculate the daily 30-day rolling log average of seconds of visible emissions from the charging operation for each battery using these current day's observations and the 29 previous valid daily sets of observations.

$$\text{logarithmic average} = e^y - 1 \quad (\text{Eq. 303-3})$$

$$\text{where } y = \frac{\ln(X_1 + 1) + \ln(X_2 + 1) + \dots + \ln(X_i + 1)}{A}$$

* * * * *

Method 308-Procedure for Determination of Methanol Emissions From Stationary Sources

* * * * *

2.0 Summary of Method

A gas sample is extracted from the sampling point in the stack. The methanol is collected in deionized distilled water and adsorbed on silica gel. The sample is returned to the laboratory where the methanol in the water fraction is separated from other organic compounds with a gas chromatograph (GC) and is then measured by a flame ionization detector (FID). The fraction adsorbed on silica gel is extracted with deionized distilled water and is then separated and measured by GC/FID.

* * * * *

7.2.2 Methanol Stock Standard. Prepare a methanol stock standard by weighing 1 gram of methanol into a 100-ml volumetric flask. Dilute to 100 ml with water.

* * * * *

7.2.3.3 Methanol Standards for Adsorbent Tube Samples. Prepare a series of methanol standards by first pipetting 10 ml of the methanol working standard into a 100-ml volumetric flask and diluting the contents to exactly 100 ml with deionized distilled water. This standard will contain 10 µg/ml of methanol. Pipette 5, 15, and 25 ml of this standard, respectively, into four 50-ml volumetric flasks. Dilute each solution to 50 ml with deionized distilled water. These standards will have 1, 3, and 5 µg/ml of methanol, respectively. Transfer all four standards into 40-ml glass vials capped with Teflon[®]-lined septa and store under refrigeration. Discard any excess solution.

* * * * *

8.1.2 Leak Check. A leak check before and after the sampling run is mandatory. The leak-check procedure is as follows:

Temporarily attach a suitable (e.g., 0- to 40-ml/min) rotameter to the outlet of the DGM, and place a vacuum gauge at or near the probe inlet. Plug the probe inlet, pull a vacuum of at least 250 mm (10 inch) Hg or the highest vacuum experienced during the sampling run, and note the flow rate as indicated by the rotameter. A leakage rate in excess of 2 percent of the average sampling rate is acceptable.

Note: Carefully release the probe inlet plug before turning off the pump.

* * * * *

9.1 Miscellaneous Quality Control Measures. The following quality control measures are required:

Section	Quality control measure	Effect
8.1.2, 8.1.3, 10.1	Sampling equipment leak check and calibration	Ensures accurate measurement of sample volume.
10.2	GC calibration	Ensures precision of GC analysis.
13.0	Methanol spike recovery check	Verifies all methanol in stack gas is being captured in impinge/adsorbent tube setup

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11.3.2 Desorption of Samples. Add 3 ml of deionized distilled water to each of the stoppered vials and shake or vibrate the vials for 30 minutes.

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12.1 Nomenclature.

C_{af} = Concentration of methanol in the front of the adsorbent tube, $\mu\text{g/ml}$.

C_{ab} = Concentration of methanol in the back of the adsorbent tube, $\mu\text{g/ml}$.

C_i = Concentration of methanol in the impinger portion of the sample train, $\mu\text{g/ml}$.

E = Mass emission rate of methanol, $\mu\text{g/hr}$ (lb/hr).

m_s = Total mass of compound measured in impinger and on adsorbent with spiked train (mg).

m_u = Total mass of compound measured in impinger and on adsorbent with unspiked train (mg).

m_v = Mass per volume of spiked compound measured (mg/L).

M_{tot} = Total mass of methanol collected in the sample train, μg .

P_{bar} = Barometric pressure at the exit orifice of the DGM, mm Hg (in. Hg).

P_{std} = Standard absolute pressure, 760 mm Hg (29.92 in. Hg).

Q_{std} = Dry volumetric stack gas flow rate corrected to standard conditions, dscm/hr (dscf/hr).

R = fraction of spiked compound recovered

s = theoretical concentration (ppm) of spiked target compound

T_m = Average DGM absolute temperature, degrees K (°R).

T_{std} = Standard absolute temperature, 293 degrees K (528 °R).

V_{af} = Volume of front half adsorbent sample, ml.

V_{ab} = Volume of back half adsorbent sample, ml.

V_i = Volume of impinger sample, ml.

V_m = Dry gas volume as measured by the DGM, dry cubic meters (dcm), dry cubic feet (dcf).

$V_{m(std)}$ = Dry gas volume measured by the DGM, corrected to standard conditions, dry standard cubic meters (dscm), dry standard cubic feet (dscf).

* * * * *

12.5 Recovery Fraction (R)

$$m_v = \frac{m_s}{V_s} - \frac{m_u}{V_u} \quad \text{Equation 308-4}$$

$$R = \frac{m_v \times v_s}{s} \quad \text{Equation 308-5}$$

13.0 Method Performance

Since a potential sample may contain a variety of compounds from various sources, a specific precision limit for the analysis of field samples is impractical. Precision in the range of 5 to 10 percent relative standard deviation (RSD) is typical for gas chromatographic techniques, but an experienced GC operator with a reliable instrument can readily achieve 5 percent RSD. For this method, the following combined GC/operator values are required.

to ensure the accuracy of this version, but it is not the official version.

(a) Precision. Triplicate analyses of calibration standards fall within 5 percent of their mean value.

(b) Recovery. After developing an appropriate sampling and analytical system for the pollutants of interest, conduct the following spike recovery procedure at each sampling point where the method is being applied.

i. Methanol Spike. Set up two identical sampling trains. Collocate the two sampling probes in the stack. The probes shall be placed in the same horizontal plane, where the first probe tip is 2.5 cm from the outside edge of the other. One of the sampling trains shall be designated the spiked train and the other the unspiked train. Spike methanol into the impinger, and onto the adsorbent tube in the spiked train prior to sampling. The total mass of methanol shall be 40 to 60 percent of the mass expected to be collected with the unspiked train. Sample the stack gas into the two trains simultaneously. Analyze the impingers and adsorbents from the two trains utilizing identical analytical procedures and instrumentation. Determine the fraction of spiked methanol recovered (R) by combining the amount recovered in the impinger and in the adsorbent tube, using the equations in section 12.5. Recovery values must fall in the range: $0.70 \leq R \leq 1.30$. Report the R value in the test report.

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Method 320-Measurement of Vapor Phase Organic and Inorganic Emissions By Extractive Fourier Transform Infrared (FTIR) Spectroscopy

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8.2.2.4 Determine the percent leak volume %V_L for the signal integration time t_{SS} and for ΔP_{max}, i.e., the larger of ΔP_v or ΔP_p, as follows:

$$\%V_L = 50t_{SS} \frac{\Delta P_{max}}{P_S} \quad \text{Equation 2}$$

where $50 = 100\%$ divided by the leak-check time of 2 minutes.

8.2.2.5 Leak volumes in excess of 4 percent of the FTIR system volume V_{SS} are unacceptable.

* * * * *

9.2.3 Calculate the dilution ratio using the tracer gas as follows:

$$DF = \frac{SF_{6(spik)}}{SF_{6(dir)}} \quad \text{Equation 3}$$

Where:

$$CS = DF * Spike_{dir} + Unspike (1 - DF) \quad \text{Equation 4}$$

DF = Dilution factor of the spike gas; this value shall be ≥ 10 .

$SF_{6(dir)}$ = SF_6 (or tracer gas) concentration measured directly in undiluted spike gas.

$SF_{6(spik)}$ = Diluted SF_6 (or tracer gas) concentration measured in a spiked sample.

$Spike_{dir}$ = Concentration of the analyte in the spike standard measured by filling the FTIR cell directly.

CS = Expected concentration of the spiked samples.

Unspike = Native concentration of analytes in unspiked samples.

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Method 323-Measurment of Formaldehyde Emissions From Natural Gas-Fired Stationary

Sources-Acetyl Acetone Derivitization Method

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12.9 Formaldehyde Concentration Corrected to 15% Oxygen

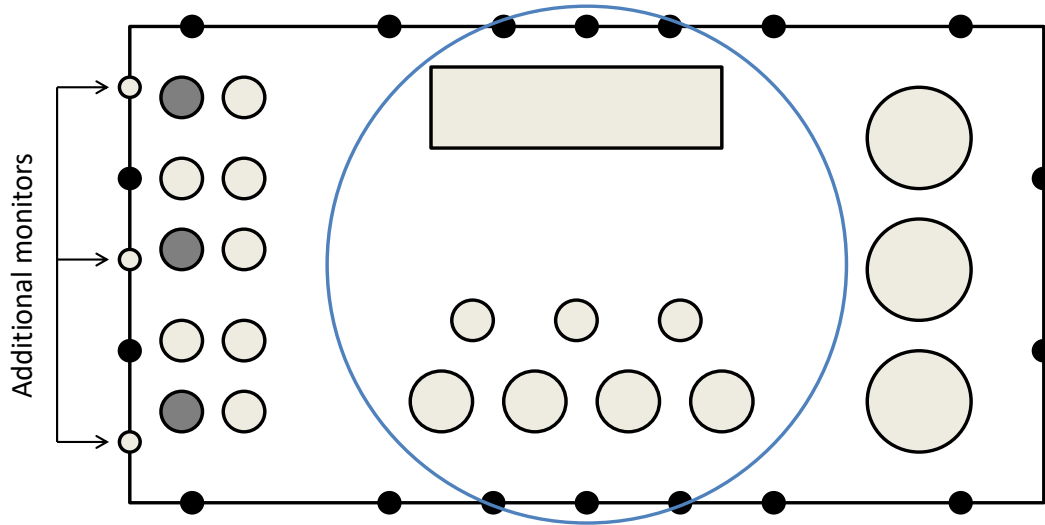
$$C_{form@15\%O_2} = C_{form} \frac{(20.9-15)}{(20.9-O_{2d})} \quad \text{Eq. 323-8}$$

* * * * *

Method 325A-Volatile Organic Compounds From Fugitive and Area Sources: Sampler Deployment and VOC Sample Collection

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8.2.1.3 Extra samplers must be placed near known sources of VOCs if the potential emission source is within 50 meters (162 feet) of the boundary and the source location is between two monitors. Measure the distance (x) between the two monitors and place another monitor approximately halfway between ($x/2 \pm 10$ percent) the two monitors. Only one extra sampler is required between two monitors to account for the known source of VOCs. For example, in Figure 8.1, the facility added three additional monitors (i.e., light shaded sampler locations) and in Figure 8.2, the facility added two additional monitors to provide sufficient coverage of all area sources.



Refinery (20° Angle)

Note: Shaded sources are within 50 meters of the property boundary and are located between two monitors. Additional coverage required by this method was accomplished by placing the monitors halfway between two existing monitors.

* *

Figure 8.1. Facility with a Regular Shape Between 750 and 1,500 Acres in Area

* * * * *

8.2.3.2 For facilities with a monitoring perimeter length greater than or equal to 7,315 meters (24,000 feet), sampling locations are spaced 610 ± 76 meters ($2,000 \pm 250$ feet) apart.

8.2.3.3 Unless otherwise specified in an applicable regulation, permit or other requirement, for small disconnected subareas with known sources within 50 meters (162 feet) of the monitoring perimeter, sampling points need not be placed closer than 152 meters (500 feet) apart as long as a minimum of 3 monitoring locations are used for each subarea.

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Method 325B-Volatile Organic Compounds From Fugitive and Area Sources: Sampler

Preparation and Analysis

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9.3.2 Field blanks must be shipped to the monitoring site with the sampling tubes and must be stored at the sampling location throughout the monitoring exercise. The field blanks must be installed under a protective hood/cover at the sampling location, but the long-term storage caps must remain in place throughout the monitoring period (see Method 325A). The field blanks are then shipped back to the laboratory in the same container as the sampled tubes. Collect at least two field blank samples per sampling period to ensure sample integrity associated with shipment, collection, and storage.

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9.13 ROUTINE CCV AT THE START OF A SEQUENCE. Run CCV before each sequence of analyses and after every tenth sample to ensure that the previous multi-level calibration (see Section 10.0) is still valid.

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11.3.2.5 Whenever the thermal desorption — GC/MS analytical method is changed or major equipment maintenance is performed, you must conduct a new five-level calibration (see Section 10.0). System calibration remains valid as long as results from subsequent CCV are within 30 percent of the most recent 5-point calibration (see Section 9.13). Include relevant CCV data in the supporting information in the data report for each set of samples.

* * * * *

12.2.2 Determine the equivalent concentrations of compounds in atmospheres as follows. Correct target compound concentrations determined at the sampling site temperature and atmospheric pressure to standard conditions (25 °C and 760 mm mercury) using Equation 12.5.

$$C_c = \frac{(m_{meas}) * 10^6}{U_{NTP} * \left[\frac{t_{ss}}{298.15} \right]^{\frac{1}{2}} * t} \quad \text{Eq. 12.5}$$

Where:

m_{meas} = The mass of the compound as measured in the sorbent tube (μg).

t = The exposure time (minutes).

t_{ss} = The average temperature during the collection period at the sampling site (K).

U_{NTP} = The method defined diffusive uptake rate (sampling rate) (mL/min).

NOTE: Diffusive uptake rates (U_{std}) for common VOCs, using carbon sorbents packed into sorbent tubes of the dimensions specified in Section 6.1, are listed in Table 12.1. Adjust analytical conditions to keep expected sampled masses within range (see Sections 11.3.1.3 to 11.3.1.5). Best possible method detection limits are typically in the order of 0.1 ppb for 1,3-butadiene and 0.05 ppb for volatile aromatics such as benzene for 14-day monitoring. However, actual detection limits will depend upon the analytical conditions selected.

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TABLE 17.1—SUMMARY OF GC/MS ANALYSIS QUALITY CONTROL PROCEDURES

Parameter	Frequency	Acceptance criteria	Corrective action
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Bromofluorobenzene Instrument Tune Performance Check	Daily ^a prior to sample analysis	Evaluation criteria presented in Section 9.5 and Table 9.2	(1) Retune and or (2) Perform Maintenance.
Five point calibration bracketing the expected sample concentration	Following any major change, repair or maintenance or if daily CCV does not meet method requirements. Recalibration not to exceed three months	(1) Percent Deviation (%DEV) of response factors $\pm 30\%$ (2) Relative Retention Times (RRTs) for target peaks ± 0.06 units from mean RRT	(1) Repeat calibration sample analysis. (2) Repeat linearity check. (3) Prepare new calibration standards as necessary and repeat analysis.
Calibration Verification (CCV Second source calibration verification check)	Following the calibration curve	The response factor $\pm 30\%$ DEV from calibration curve average response factor	(1) Repeat calibration check. (2) Repeat calibration curve.
Laboratory Blank Analysis	Daily ^a following bromofluorobenzene and calibration check; prior to sample analysis	(1) ≤ 0.2 ppbv per analyte or ≤ 3 times the LOD, whichever is greater (2) Internal Standard (IS) area response $\pm 40\%$ and IS Retention Time (RT) ± 0.33 min. of most recent calibration check	(1) Repeat analysis with new blank tube. (2) Check system for leaks, contamination. (3) Analyze additional blank.
Blank Sorbent Tube Certification	One tube analyzed for each batch of tubes cleaned or 10 percent of tubes whichever is greater	< 0.2 ppbv per VOC targeted compound or 3 times the LOD, whichever is greater	Re-clean all tubes in batch and reanalyze.
Samples—Internal Standards	All samples	IS area response $\pm 40\%$ and IS RT ± 0.33 min. of most recent calibration validation	Flag Data for possible invalidation.
Field Blanks	Two per sampling period	No greater than one-third of the measured target analyte or compliance limit.	Flag Data for possible invalidation due to high blank bias.

^aEvery 24 hours.

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