



## WISCONSIN DEPARTMENT OF NATURAL RESOURCES NOTICE OF FINAL GUIDANCE & CERTIFICATION

Pursuant to ch. 227, Wis. Stats., the Wisconsin Department of Natural Resources has finalized and hereby certifies the following guidance document.

### DOCUMENT ID

AM-19-0019

### DOCUMENT TITLE

How to Apply Compliance Demonstration Testing Requirements

### PROGRAM/BUREAU

Air Management

### STATUTORY AUTHORITY OR LEGAL CITATION

Section 285.17, Wisconsin Statutes; Chapter NR 439, Wisconsin Administrative Code

### DATE SENT TO LEGISLATIVE REFERENCE BUREAU (FOR PUBLIC COMMENTS)

September 16, 2019

### DATE FINALIZED

October 21, 2019

No comments were received during the comment period 16SEP2019 to 07OCT2019

### DNR CERTIFICATION

*I have reviewed this guidance document or proposed guidance document and I certify that it complies with sections 227.10 and 227.11 of the Wisconsin Statutes. I further certify that the guidance document or proposed guidance document contains no standard, requirement, or threshold that is not explicitly required or explicitly permitted by a statute or a rule that has been lawfully promulgated. I further certify that the guidance document or proposed guidance document contains no standard, requirement, or threshold that is more restrictive than a standard, requirement, or threshold contained in the Wisconsin Statutes.*

A handwritten signature in blue ink that reads "Paul E. Hood".

October 16, 2019

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Signature

Date

## DNR GUIDANCE DISCLAIMER

This document is intended solely as guidance and does not contain any mandatory requirements except where requirements found in statute or administrative rule are referenced. Any regulatory decisions made by the Department of Natural Resources in any matter addressed by this guidance will be made by applying the governing statutes and administrative rules to the relevant facts.

DATE: October 30, 2017

TO: Permit Writers and Compliance Inspectors

FROM: Kristin Hart, Section Chief, Permits & Stationary Source Modeling Section  
Andy Seeber, Environmental Enforcement Specialist  
Maria Hill, Section Chief, Compliance, Enforcement & Emission Inventory Section

SUBJECT: How to Apply Compliance Demonstration Testing Requirements

### Purpose

The requirement for regulated facilities to perform compliance demonstration emission testing is codified under s. NR 439.075(2), Wis. Adm. Code. This code provision is part of the air program's EPA approved state implementation plan (SIP) and reflects Clean Air Act requirements. The purpose of this memo is to clarify how to apply the testing requirements and subsequently promote statewide consistency on implementing the existing administrative code. Three categories of affected facilities are specifically addressed:

- (1) owner or operator with an *emission point* that has *allowable emissions* of particulate matter, sulfur dioxide or volatile organic compounds of 100 tons or more per year or allowable emissions of total reduced sulfur compounds of 25 tons or more per year,
- (2) owner or operator subject to a lead, mercury, beryllium, or vinyl chloride emission limitation, and
- (3) owner or operator subject to a New Source Performance Standard (NSPS) emission limitation.

### s. NR 439.075(2), Wis. Adm. Code Applicability

An emission test is the combination of procedures utilized for sampling gaseous emissions from a stack or duct in a representative single sampling location at a stationary source. It is used to determine a pollutant emission rate, concentration, or parameter value while the process or pollution control equipment is operating at conditions that result in the measurement of the highest emission or parameter values, or at other operating conditions approved by the department in writing. A test typically comprises three (3) sampling runs for a specified sampling time span. The testing is performed using sampling and analytical procedures approved by the Environmental Protection Agency (EPA) or other approved alternatives for the specific pollutant or parameter. An emission test is also known as a "Compliance Emission Test", "Performance Test", "Source Test" or "Stack Test".

Owners or operators of a direct stationary source with a construction permit are required to perform compliance emission testing under s. NR 439.075(3)(a), Wis. Adm. Code, during the initial operating period.

Owners or operators of a direct stationary source with an operation permit or elective operation permit are required to perform biennial compliance emission testing under s. NR 439.075(3)(b) or (c), Wis. Adm.

Code. All biennial compliance emission tests shall be performed within 90 days of the anniversary date of the issuance of the permit or within 90 days of an alternative date specified by the department.

No periodic compliance emission testing is required under s. NR 439.075(4)(a)(2), Wis. Adm. Code, for an emission point equipped with a certified continuous emission monitor (CEM); an emission point at a fuel burning installation firing only natural gas, propane or distillate oil under s. NR 439.075(4)(a)(3), Wis. Adm. Code; or an emission point performing fuel sampling and analysis for SO<sub>2</sub> under s. NR 439.075(4)(a)(5), Wis. Adm. Code.

Exceptions to compliance emission testing requirements are defined under s. NR 439.075(4), Wis. Adm. Code. When making an exception determination under s. NR 439.075(4), Wis. Adm. Code, the owner or operator shall meet one of the following criteria:

- (a) The direct stationary source associated with the emission point subject to the testing requirement will be ceasing operation within one year of a scheduled test.
- (b) The most recently completed test results for the direct stationary source demonstrate that the emissions of the air contaminant for which compliance emission testing is required are 50 percent or less of the applicable emission limitation.
- (c) The direct stationary source associated with the emission point subject to the testing requirement has not operated more than 360 hours in the previous 12 month period prior to the scheduled test date.
- (d) The most recently completed test was conducted less than 12 months prior to the date that testing would be required.

Emission tests will be performed utilizing test methods established in 40 CFR part 60, Appendix A, 40 CFR part 61, Appendix B, and 40 CFR part 63, Appendix A, or according to other test methods approved in writing by the department. A table containing allowable test methods is attached for convenience. In addition, outlines for test plan submittal and test report submittal are included.

## **Definitions**

Emission point is defined under s. NR 400.02(59), Wis. Adm. Code, as “any individual opening at a fixed location through which air contaminants are emitted” and stack is defined under s. NR 439.02(147), Wis. Adm. Code, as, “any device or opening designed or used to emit air contaminants to the ambient air”.

Allowable emission is defined under s. 285.01(7) Wis. Stats. [400.02(21), Wis. Adm. Code], as “the emission rate calculated using the maximum rated capacity of the origin of, or the equipment emitting an air contaminant based on the most stringent applicable emission limitation and accounting for any enforceable permit conditions which limit operating rate, or hours of operation, or both”. The maximum theoretical emission (MTE) rate shall be utilized for any emission point (process) not permitted.

MTE is defined under s. NR 400.02(95), Wis. Adm. Code, as, “the quantity of air contaminants that theoretically could be emitted by a stationary source without control devices based on the design capacity or maximum production capacity of the source”.

Compliance emission test is defined under s. NR 439.02(3), Wis. Adm. Code, as “a performance test required by the department or conducted in cooperation with the department involving the quantitative measurement of air contaminants as they are emitted from a source to determine compliance with an emission limitation”. Performance test is defined under s. NR 400.02(121), Wis. Adm. Code, as “measurements of emissions or other procedures used for the purpose of determining compliance with a standard of performance”.

**WISCONSIN DEPARTMENT OF NATURAL RESOURCES BUREAU OF AIR MANAGEMENT  
ALLOWED TEST PROCEDURES**

\* - Preferred method

<i>Pollutant</i>	<i>Test Method</i>	<i>Analysis Method</i>
Total Particulates	EPA Method 5* or 17 (Front-Half Filterable PM) EPA Method 202* (Back-Half Condensable PM)	Gravimetric Gravimetric
PM <sub>10</sub>	EPA Method 201 or 201A* EPA Method 202* (Back-Half Condensable PM)	Gravimetric
PM <sub>2.5</sub>	EPA Method 201A* EPA Method 202* (Back-Half Condensable PM)	Gravimetric
Visible Emissions - Opacity	EPA Method 9*	Calibrated Eyeballs
Fugitive Emissions - Opacity	EPA Method 22* (fugitive emissions)	Eyeballs & Stopwatch
METALS: Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Copper, Iron, Lead, Manganese Mercury, Nickel, Phosphorus, Selenium, Silver, Thallium, Zinc	EPA Method 29* (multiple metals)  EPA Method 12 (Pb) EPA Method 306 (Cr) EPA Method 30A; 30B (Vapor Phase Hg)	GFASS, AAS, CVAAS or ICAP  AAS ICP or GFAAS Instrumental; UV, AAS, or UV AF
Hexavalent Chrome	EPA Method 306* or 306A EPA Method 0061	ICP, GFAAS or IC IC
Hydrogen Halide and Halogens (HCl, HBr, HF, Br <sub>2</sub> Cl <sub>2</sub> )	EPA Method 26A* (isokinetic) EPA Method 26 (constant rate)	IC IC
Ammonia	EPA CTM 027*	IC
Dioxins-Furans-PCBs (as equivalents)	EPA Method 23*	HRGC/HRMS
Oxygen and Carbon Dioxide	EPA Method 3A* EPA Method 3B* EPA Method 3	Analyzer Orsat Device Fyrite or Orsat Device
Carbon Monoxide	EPA Method 10*	NDIR
NOx	EPA Method 7E* EPA Method 7	Analyzer Colorimetric
SO <sub>2</sub>	EPA Method 6C* EPA Method 6, 8	Analyzer Titration

Sulfuric Acid	EPA Method 8* or 8A	Titration
Hydrogen Sulfide	EPA Method 11*	Titration
Total Reduced Sulfur	EPA Method 16A* EPA Method 16	Titration GC/FPD
Total Organic Compounds - VOC	EPA Method 25A* EPA Method 25 EPA Method 25B (Bulk Terminals) EPA Method 18* (For Speciation) EPA Method 320 (For Speciation)	FID GC/FID NDIR GC FTIR
VOC Capture Efficiency	EPA Method 204-204F DQO/LCL alternative	FID
Semivolatile Organics, PAHs, POMs	EPA Method 0010*	GC/MS
Toxic Organics (HAPS for landfills)	EPA Method TO-15	GC/MS
Benzene	EPA Method 18*	GC GC/MS
Formaldehyde	CIM: CI/WP-98.01 or CI/SG/PULP-94.02, EPA Method 0011* EPA 316 EPA Method 320 EPA Method 323	Colorimetric HPLC Colorimetric FTIR Colorimetric
Methanol	EPA Method 308*	GC
Acrylonitrile	EPA Method 18	GC GC/MS
Acrolein	EPA Method 0011	HPLC
Ethylene Oxide	EPA Method 18* EPA Method 0030 NIOSH 3702	GC GC/MS
Fuel Analysis	EPA Method 19*	Ultimate Fuel Analysis
Ink/Surface Coating Analysis	EPA Method 24*, 24A	Gravimetric
<b>AAS</b> – Atomic Absorption Spectroscopy <b>FID</b> – Flame Ionization Detector <b>GFAAS</b> – Graphite Furnace AAS <b>HRGC</b> – High Resolution GC <b>CARB</b> – California Air Resources Board <b>FPD</b> – Flame Photometric Detector <b>GC</b> – Gas Chromatograph <b>HRMC</b> – High Resolution Mass Spectroscopy <b>CVAAS</b> – Cold Vapor AAS <b>FTIR</b> – Fourier Transform Infrared <b>HPLC</b> – High Pressure Liquid Chromatography <b>IC</b> – Ion Chromatography		

**ICAP** – Inductively Coupled Argon Plasma Emission Spectrometry  
**MS** – Mass Spectroscopy  
**PAHs** – Polynuclear Aromatic Hydrocarbons  
**UV AF** – Ultraviolet Atomic Fluorescence

**ICP** – Inductively Coupled Plasma Emission Spectrometry  
**NDIR** – Non Dispersive Infrared  
**POMs** – Polycyclic organic Matter

**PM** – Particulate Matter  
**UV** – Ultraviolet

REFERENCES:

EPA Method 3, 3A, 3B, 5, 6, 6C, 7, 7E, 8, 9, 10, 11, 12, 16, 16A, 17, 18, 19, 22, 23, 24, 24A, 25, 25A, 25B, 26, 26A, 29, 30A, 30B and CTM 027. Code of Federal Regulations, Part 60, Appendix A.

EPA Methods 0010, 0011, 0030 and 0061. US EPA, Test Methods for Evaluating Solid Waste. 3rd Edition. November, 1986. Methods Manual for Compliance with BIF, (Burning Hazardous Waste in Boilers and Industrial Furnaces) Regulations, 1990

EPA Methods 201, 201A, 202 and 204-204F Code of Federal Regulations, Part 51, App. M.

EPA Methods 306, 306A, 308, 316 and 320 Code of Federal Regulations, Part 63, App. A.

NCASI(National Council of the Paper Industry for Air and Stream Improvement, Inc.) Technical Bulletin No. 531, August, 1987; Technical Bulletin No. 520, April, 1987; CI/WP-98.01 or CI/SG/PULP-94.02

SKC The Essential Reference for Air Sampling, 2001 (NIOSH and OSHA METHODS LISTED)