DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL

DIVISION OF AIR AND WASTE MANAGEMENT

Statutory Authority: 7 Delaware Code, Section 6010, (7 **Del.C.** §6010)
7 **DE Admin. Code** 1138

FINAL

Secretary's Order No.: 2008-A-0014

1138 Emissions Standards For Hazardous Air Pollutants For Source Categories

Date of Issuance: April 14, 2008
Effective Date: July 28, 2008

Under the authority vested in the Secretary of the Department of Natural Resources and Environmental Control ("Department" or "DNREC") under *29* **Del.C.** *§§8001* et seq., 29 **Del.C.** *§§10111 et seq*. and 7 **Del.C.** *§6010(a)*, the following findings, reasons and conclusions are entered as an Order of the Secretary in the above-referenced rulemaking proceeding.

On March 8, 2007, the Department opened a proposed rulemaking proceeding in Start Action Notice ("SAN") 2007-03 to amend the current Regulation 38 in the *Delaware's Regulations Governing Control of Air Pollution.* ("*DRGCAP*"). The Department's experts within the Division of Air and Waste Management ("DAWM"), Air Quality Management Section, drafted the amendments to reflect changes in the federal regulation of perchloroethylene ("PCE"), which is also known as tetrachlororoethylene. In 1990, the federal Clean Air Act ("CAA") in Section 112 classified the air emissions from PCE as a hazardous air pollutant ("HAP"). In 1993, United States Environmental Protection Agency ("EPA") issued regulations to reduce the emissions of PCE from dry cleaning facilities based upon maximum achievable control technology ("MACT"). The Department promulgated Regulation 38 in *DRGCAP* and reflected the federal regulation under its authority as the Delaware administrator of the CAA and to allow independent state authority to enforce the standards under Title 7 of the **Delaware Code**. On July 27, 2006, EPA amended its regulation of PCE in *40 CFR Part 63* to impose more stringent standards after completing the required PCE risk assessments, which concluded that the MACT standard did not adequately reduce the public's health risk to an acceptable level, as defined in the *CAA*. Consequently, the Department's proposed amendments will reflect the federal changes and impose the more stringent emission standards on Delaware's approximately 80 permitted dry cleaning facilities that are authorized to release PCE under the limits established by the air pollution control permit issued under *DRGCAP Regulation 1102*. The proposed regulation also will provide a permanent exemption for all existing permitted dry cleaners as small area sources from obtaining a Title V permit requirement under *DRGCAP Regulation 30*. In addition, the Department proposed weekly testing for PCE leaks and repair requirements in order to better protect the environment and public health.

The health risks of PCE are still being studied by the EPA and others, but the record contains ample evidence that human health is adversely affected by air exposure to PCE, primarily through neurological disorders and it also poses a possible or probable risk to human health as a carcinogenic.

The Department held three public workshops on October 29, November 5, and November 6, 2007 in New Castle and Kent Counties, and published the proposed regulation on January 1, 2008 in the *Delaware Register of Regulations*, and held a public hearing on January 22, 2008 before the Department's hearing officer, Robert P. Haynes, who issued a report dated March 12, 2008, which is attached hereto as Appendix A. The Report recommends approval of the proposed regulation as a final regulation. I agree and adopt the Report and its reasoning.

The proposed regulation is supported by the considerable scientific evidence developed by the Department's experts, and in a collaborative manner with interested participants, which included many of the small business owners. The Department conducted outreach to the dry cleaning industry and has reviewed the concerns of small businesses for the regulatory burden imposed by this proposed regulation, which is based upon a federal regulation. The proposed regulation reflects the dry cleaning industry's acceptance of the regulation because no public comments were submitted.

I find that the record developed during the public hearing process provides ample support for the Department to adopt this final regulation. The justification is that it will result in cleaner air quality and improve the health of workers in the dry cleaning business, who often are the owners and who are the most at risk for the exposure to air emissions from PCE. The federal regulation reflects developments in reasonably available air pollution controls, and the Delaware's regulation will also reflect the standards enabled by the improvements in air pollution technology in the dry cleaning business. The regulation approved by this Order will result in lowering the release of HAPs and improve the working conditions of many Delawareans.

In conclusion, the following findings and conclusions are entered:

1. The Department, acting through this Order of the Secretary and *29* **Del.C.** *§10118(d)*, hereby approved the final regulation in Appendix A to the Report and reflects a nonsubstantive change due to the delayed effective date from the proposed regulation published in the January 1, 2008 *Delaware Register of Regulations*;

2. The Department shall have this Order published in the *Delaware Register of Regulations* and in newspapers in the same manner as the notice of the proposed regulation; and

3. The Department shall provide notice to the persons affected by the Order, as determined by the Department, including all those who submitted comments to the Department, who otherwise participated in the public hearing, and who requested to receive notice of all actions on proposed regulations.

John A. Hughes, Secretary

1138 Emissions Standards For Hazardous Air Pollutants For Source Categories

7/28/08 ~~10/11/00~~

5.0 ~~Subpart M~~ Perchloroethylene Air Emission Standards for Dry Cleaning Facilities

5.1 Applicability.

5.1.1 The provisions of Section 5.0 of this regulation apply to the owner or operator of each dry cleaning facility that uses perchloroethylene.

[5.1.2 ~~The compliance date for a new dry cleaning system depends on the date that construction or reconstruction commences.~~ Each dry cleaning system shall be in compliance with all of the applicable provisions of Section 5.0 of this regulation beginning on July 28, 2008 or immediately upon startup, whichever is later.

~~5.1.2.1 Each dry cleaning system that commences construction or reconstruction on or after December 9, 1991 and before December 21, 2005, shall be in compliance with the provisions of Section 5.0 of this regulation except 5.3.15 of this section beginning on June 30, 1999 or immediately upon startup, whichever is later, except for dry cleaning systems complying with section 112(i)(2) of the Clean Air Act; and shall be in compliance with the provisions of 5.3.15 beginning on July 28, 2008.~~

~~5.1.2.2 The compliance dates for a new dry cleaning systems that commence construction or reconstruction on or after December 21, 2005, but before July 13, 2006.~~

~~5.1.2.2.1 Each dry cleaning system that commences construction or reconstruction on or after December 21, 2005, but before July 13, 2006, and is not located in a building with a residence, shall be in compliance with the provisions of Section 5.0 of this regulation, except 5.3.15 of this section, immediately upon startup; and shall be in compliance with the provisions of 5.3.15 beginning on July 28, 2008 or immediately upon startup, whichever is later.~~

~~5.1.2.2.2 Each dry cleaning system that commences construction or reconstruction on or after December 21, 2005, but before July 13, 2006, and is located in a building with a residence, shall be in compliance with the provisions of Section 5.0 of this regulation, except 5.3.15 of this section, immediately upon startup; shall be in compliance with the provisions of 5.3.15.3 and 5.3.15.5 of this section beginning on July 28, 2008.~~

~~5.1.2.3 Each dry cleaning system that commences construction or reconstruction on or after July 13, 2006, shall be in compliance with the provisions of Section 5.0 of this regulation, including 5.3.15 of this section, immediately upon startup.~~]

5.1.3 **[[Reserved.]** **~~Each dry cleaning system that commenced construction or~~**

~~reconstruction before December 9, 1991, and each new transfer machine system and its ancillary equipment that commenced construction or reconstruction on or after December 9, 1991 and before September 22, 1993, shall be in compliance with the provisions of Section 5.0 of this regulation~~ except ~~5.3.15 of this section beginning on June 30, 1999 and shall be in compliance with 5.3.15 beginning on July 28, 2008.~~]

5.1.4 [Reserved]. ~~Each existing dry-to-dry machine and its ancillary equipment located in a dry cleaning facility that includes only dry-to-dry machines, and each existing transfer machine system and its ancillary equipment, and each new transfer machine system and its ancillary equipment installed between December 9, 1991 and September 22, 1993, as well as each existing dry-to-dry machine and its ancillary equipment, located in a dry cleaning facility that includes both transfer machine system(s) and dry-to-dry machine(s) is exempt from Sec. 63.322, Sec. 63.323, and Sec. 63.324, except paragraphs 63.322 (c), (d), (i), (j), (k), (l), (m), 63.323(d), and 63.324 (a), (b), (c), (d)(1), (d)(2), (d)(3), (d)(4), and (e) if the total perchloroethylene consumption of the dry cleaning facility is less than 530 liters (140 gallons) per year. Consumption is determined according to Sec. 63.323(d).~~

5.1.5 [Reserved]. ~~Each existing transfer machine system and its ancillary equipment, and each new transfer machine system and its ancillary equipment installed between December 9, 1991 and September 22, 1993, located in a dry cleaning facility that includes only transfer machine system(s) is exempt from Sec. 63.322, Sec. 63.323, and Sec. 63.324, except paragraphs 63.322 (c), (d), (i), (j), (k), (l), (m), 63.323(d), and 63.324 (a), (b), (c), (d)(1), (d)(2), (d)(3), (d)(4), and (e) if the perchloroethylene consumption of the dry cleaning facility is less than 760 liters (200 gallons) per year. Consumption is determined according to Sec. 63.323(d).~~

5.1.6 [Reserved].

~~(1) If the total yearly perchloroethylene consumption of a dry cleaning facility determined according to Sec. 63.323(d) is initially less than the amounts specified in paragraph (d) or (e) of this section, but later exceeds those amounts, the existing dry cleaning system(s) and new transfer machine system(s) and its (their) ancillary equipment installed between December 9, 1991 and September 22, 1993 in the dry cleaning facility must comply with Sec. 63.322, Sec. 63.323, and Sec. 63.324 by 180 calendar days from the date that the facility determines it has exceeded the amounts specified, or by June 30, 1999, whichever is later.~~

~~(2) Following review of notification submitted in accordance with 63.324(e)(1), the Department may determine that the dry cleaning facility shall not be subject to the additional requirements imposed under paragraph (f)(1), if there has been no exceedance during the prior 36 months and~~

~~(i) The total yearly perchloroethylene consumption falls below and remains below the amounts specified in paragraph (d) or (e) before and after the next purchase of perchloroethylene, or~~

~~(ii) The exceedance occurred due to the initial filling of a newly installed dry-to-dry machine and the total yearly perchloroethylene consumption, exclusive of the quantity of perchloroethylene purchased to initially fill the newly installed dry-to-dry machine, remains below the amounts specified in paragraph (d) or (e).~~

5.1.7 A dry cleaning facility is a major source if the facility emits or has the potential to emit more than 9.1 megagrams per year (10 tons per year) of perchloroethylene to the atmosphere. In lieu of measuring a facility's potential to emit perchloroethylene emissions or determining a facility's potential to emit perchloroethylene emissions, a dry cleaning facility is a major source if:

5.1.7.1 It includes only dry-to-dry machines and has a total yearly perchloroethylene consumption greater than 8,000 liters (2,100 gallons) as determined according to 5.4.4 of this section or

5.1.7.2 It includes only transfer machine systems or both dry-to-dry machines and transfer machine systems and has a total yearly perchloroethylene consumption greater than 6,800 liters (1,800 gallons) as determined according to 5.4.4 of this section.

5.1.8 A dry cleaning facility is an area source if it does not meet the conditions of 5.1.7 of this section.

5.1.9 Change in facility status to major source.

5.1.9.1 If the total yearly perchloroethylene consumption of a dry cleaning facility determined according to 5.4.4 of this section is initially less than the amounts specified in 5.1.7 of this section, but then exceeds those amounts, the dry cleaning facility becomes a major source and all dry cleaning systems located at that dry cleaning facility must comply with the appropriate requirements for major sources in 5.3, 5.4,

and 5.5 of this section by 180 calendar days from the date that the facility determines it has exceeded the amounts specified, or by June 30, 1999, whichever is later.

5.1.9.2 Following review of notification submitted in accordance with 5.5.3.1 of this section, the Department may determine that the dry cleaning facility shall not be subject to the additional requirements imposed in 5.1.9.1 of this section, if there has been no exceedance during the prior 36 months and

5.1.9.2.1 The total yearly perchloroethylene consumption falls below and remains below the amounts specified in 5.1.7 of this section before and after the next purchase of perchloroethylene or

5.1.9.2.2 The exceedance occurred due to the initial filling of a newly installed dry-to-dry machine and the total yearly perchloroethylene consumption, exclusive of the quantity of perchloroethylene purchased to initially fill the newly installed dry-to-dry machine, remains below the amounts specified in 5.1.7 of this section.

5.1.10 Coin-operated dry cleaning machines.

~~(1)~~ All coin-operated dry cleaning machines are subject to the provisions of Section 5.0 of this regulation ~~exempt from Sec. 63.320(f) 5.1.6, Sec. 63.322, Sec. 63.323, and Sec. 63.324, except paragraphs 63.322 (c), (d), (i), (j), (k), (l), and (m), 63.323(d), and 63.324 (a), (b), (c), (d)(1), (d)(2), (d)(3), (d)(4), and (e)~~.

~~(2) Facilities consisting of only coin-operated dry cleaning machines, unless otherwise subject to Regulation 30 permitting requirements, are exempt from paragraph 63.320(k).~~

5.1.11 ~~The owner or operator of any source subject to the provisions of this subpart M is subject to Regulation 30 permitting requirements. These affected sources, if not major or located at major sources as defined under Regulation 30, are deferred by the Department from Regulation 30 permitting requirements until December 9, 2004. All sources receiving deferrals shall submit Regulation 30 permit applications by December 9, 2005. All sources receiving deferrals still must meet the compliance schedule as stated in Sec. 63.320.~~ The owner or operator of an area source subject to Section 5.0 of this regulation is exempt from the obligation to obtain a Title V operating permit under Regulation 30 of State of Delaware "Regulations Governing the Control of Air Pollution", if the owner or operator is not required to obtain a Title V operating permit under 3.a. of Regulation 30 for a reason other than the owner or operator's status as an area source under Section 5.0. Notwithstanding the previous sentence, the owner or operator shall continue to comply with the provisions of Section 5.0 applicable to area sources.

2 DE Reg. 1390 (2/1/99)
4 DE Reg. 707 (10/1/00)

5.2 Definitions.

"Administrator" means the Administrator of the United States Environmental Protection Agency.

"Ancillary equipment" means the equipment used with a dry cleaning machine in a dry cleaning system including, but not limited to, emission control devices, pumps, filters, muck cookers, stills, solvent tanks, solvent containers, water separators, exhaust dampers, diverter valves, interconnecting piping, hoses, and ducts.

"Area source" means any perchloroethylene dry cleaning facility that meets the conditions in 5.1.8 of this section.

"Articles" mean clothing, garments, textiles, fabrics, leather goods, and the like, that are dry cleaned.

~~**"Biweekly"** means any 14-day period of time.~~

"Carbon adsorber" means a bed of activated carbon into which an air-perchloroethylene gas-vapor stream is routed and which adsorbs the perchloroethylene on the carbon.

"Coin-operated dry cleaning machine" means a dry cleaning machine that is operated by the customer (that is, the customer places articles into the machine, turns the machine on, and removes articles from the machine).

"Colorimetric detector tube" means a glass tube (sealed prior to use), containing material impregnated with a chemical that is sensitive to perchloroethylene and is designed to measure the concentration of perchloroethylene in air.

"Construction", for purposes of Section 5.0 of this regulation, means the fabrication (onsite), erection, or installation of a dry cleaning system subject to Section 5.0.

"Department" means the Department of Natural Resources and Environmental Control as defined in Title 29, **Delaware Code**, Chapter 80, as amended.

“Desorption” means regeneration of a carbon adsorber by removal of the perchloroethylene adsorbed on the carbon.

“Diverter valve” means a flow control device or flow control devices that prevents room air from passing through a refrigerated condenser when the door of the dry cleaning machine is open.

“Dry cleaning” means the process of cleaning articles using perchloroethylene.

“Dry cleaning cycle” means the washing and drying of articles in a dry-to-dry machine or transfer machine system.

“Dry cleaning facility” means an establishment with one or more dry cleaning systems.

“Dry cleaning machine” means a dry-to-dry machine or each machine of a transfer machine system.

“Dry cleaning machine drum” means the perforated container inside the dry cleaning machine that holds the articles during dry cleaning.

“Dry cleaning system” means a dry-to-dry machine and its ancillary equipment or a transfer machine system and its ancillary equipment.

“Dryer” means a machine used to remove perchloroethylene from articles by tumbling them in a heated air stream (see reclaimer).

“Dry-to-dry machine” means a one-machine dry cleaning operation in which washing and drying are performed in the same machine.

“Equivalent control device”, for purposes of Section 5.0 of this regulation, means an equivalent emission control technology approved under 5.6 of this section.

“Exhaust damper” means a flow control device that prevents the air-perchloroethylene gas-vapor stream from exiting the dry cleaning machine into a carbon adsorber before room air is drawn into the dry cleaning machine.

“Existing” means commenced construction or reconstruction before December 9, 1991.

“Filter” means a porous device through which perchloroethylene is passed to remove contaminants in suspension. Examples include, but are not limited to, lint filter, button trap, cartridge filter, tubular filter, regenerative filter, prefilter, polishing filter, and spin disc filter.

“Halogenated hydrocarbon detector” means a portable device capable of detecting vapor concentrations of perchloroethylene of 25 parts per million by volume and indicating a concentration of 25 parts per million by volume or greater by emitting an audible or visual signal that varies as the concentration changes.

“Heating coil” means the device used to heat the air stream circulated from the dry cleaning machine drum, after perchloroethylene has been condensed from the air stream and before the stream reenters the dry cleaning machine drum.

“Major source” means any dry cleaning facility that meets the conditions in 5.1.7 of this section.

“Muck cooker” means a device for heating perchloroethylene-laden waste material to volatilize and recover perchloroethylene.

“New” means commenced construction or reconstruction on or after December 9, 1991.

~~**“Perceptible leaks”** mean any perchloroethylene vapor or liquid leaks that are obvious from:~~

~~(1)The odor of perchloroethylene;~~

~~(2)Visual observation, such as pools or droplets of liquid; or~~

~~(3)The detection of gas flow by passing the fingers over the surface of equipment.~~

“Perchloroethylene consumption” means the total volume of perchloroethylene purchased based upon purchase receipts or other reliable measures.

“Perchloroethylene gas analyzer” means a flame ionization detector, photoionization detector, or infrared analyzer capable of detecting vapor concentrations of perchloroethylene of 25 parts per million by volume.

“Reclaimer” means a machine used to remove perchloroethylene from articles by tumbling them in a heated air stream (see dryer).

“Reconstruction”, for purposes of Section 5.0 of this regulation, means replacement of a washer, dryer, or reclaimer; or replacement of any components of a dry cleaning system to such an extent that the fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable new source.

“Refrigerated condenser” means a vapor recovery system into which an air-perchloroethylene gas-vapor stream is routed and the perchloroethylene is condensed by cooling the gas-vapor stream.

"Refrigerated condenser coil" means the coil containing the chilled liquid used to cool and condense the perchloroethylene.

"Residence" means any dwelling or housing in which people reside excluding short-term housing that is occupied by the same person for a period of less than 180 days (such as a hotel room).

"Responsible official" means one of the following:

- For a corporation: A president, secretary, treasurer, or vice president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more dry cleaning facilities;
- For a partnership: A general partner;
- For a sole proprietorship: The owner; or
- For a municipality, State, Federal, or other public agency: Either a principal executive officer or ranking official.

"Room enclosure" means a stationary structure that encloses a transfer machine system, and is vented to a carbon adsorber or an equivalent control device during operation of the transfer machine system.

"Source", for purposes of Section 5.0 of this regulation, means each dry cleaning system.

"Still" means any device used to volatilize and recover perchloroethylene from contaminated perchloroethylene.

"Temperature sensor" means a thermometer or thermocouple used to measure temperature.

"Transfer machine system" means a multiple-machine dry cleaning operation in which washing and drying are performed in different machines. Examples include, but are not limited to:

- A washer and dryer or dryers;
- A washer and reclaimer or reclaimers; or
- A dry-to-dry machine and reclaimer or reclaimers.

"Vapor barrier enclosure" means a room that encloses a dry cleaning system and is constructed of vapor barrier material that is impermeable to perchloroethylene. The enclosure shall be equipped with a ventilation system that exhausts outside the building and is completely separate from the ventilation system for any other area of the building. The exhaust system shall be designed and operated to maintain negative pressure and a ventilation rate of at least one air change per five minutes. The vapor barrier enclosure shall be constructed of glass, plexiglass, polyvinyl chloride, PVC sheet 22 mil thick (0.022 in.), sheet metal, metal foil face composite board, or other materials that are impermeable to perchloroethylene vapor. The enclosure shall be constructed so that all joints and seams are sealed except for inlet make-up air and exhaust openings and the entry door.

"Vapor leak" means a perchloroethylene vapor concentration exceeding 25 parts per million by volume (50 parts per million by volume as methane) as indicated by a halogenated hydrocarbon detector or perchloroethylene gas analyzer.

"Washer" means a machine used to clean articles by immersing them in perchloroethylene. This includes a dry-to-dry machine when used with a reclaimer.

"Water separator" means any device used to recover perchloroethylene from a water-perchloroethylene mixture.

"Year or Yearly" means any consecutive 12-month period of time.

2 DE Reg. 1390 (2/1/99)

5.3 Standards.

5.3.1 The owner or operator of each existing dry cleaning system and of each new transfer machine system and its ancillary equipment installed between December 9, 1991 and September 22, 1993 shall comply with either 5.3.1.1 or 5.3.1.2 of this section and shall comply with 5.3.1.3 of this section if applicable.

5.3.1.1 Route the air-perchloroethylene gas-vapor stream contained within each dry cleaning machine through a refrigerated condenser, a refrigerated condenser and carbon adsorber, or an equivalent control device.

5.3.1.2 Route the air-perchloroethylene gas-vapor stream contained within each dry cleaning machine through a carbon adsorber installed on the dry cleaning machine prior to September 22, 1993.

5.3.1.3 Contain the dry cleaning machine inside a room enclosure if the dry cleaning machine is a transfer machine system located at a major source. Each room enclosure shall be:

5.3.1.3.1 Constructed of materials impermeable to perchloroethylene and

5.3.1.3.2 Designed and operated to maintain a negative pressure at each opening at all times that the transfer machine system is operating.

5.3.2 The owner or operator of each new dry-to-dry machine and its ancillary equipment and of each new transfer machine system and its ancillary equipment installed on or after September 22, 1993 and before December 22, 2005:

5.3.2.1 Shall route the air-perchloroethylene gas-vapor stream contained within each dry cleaning machine through a refrigerated condenser, a refrigerated condenser and carbon adsorber, or an equivalent control device;

5.3.2.2 Shall eliminate any emission of perchloroethylene during the transfer of articles between the washer and the dryer or dryers; and

5.3.2.3 Shall pass the air-perchloroethylene gas-vapor stream from inside the dry cleaning machine drum through a carbon adsorber or equivalent control device immediately before or as the door of the dry cleaning machine is opened if the dry cleaning machine is located at a major source.

5.3.3 The owner or operator shall close the door of each dry cleaning machine immediately after transferring articles to or from the machine, and shall keep the door closed at all other times.

5.3.4 The owner or operator of each dry cleaning system shall operate and maintain the system according to the manufacturers' specifications and recommendations.

5.3.5 Each refrigerated condenser used for the purposes of complying with 5.3.1, ~~or~~ 5.3.2, 5.3.15.2, or 5.3.15.5.2.2 of this section and installed on a dry-to-dry machine, dryer, or reclaimer:

5.3.5.1 Shall be operated to not vent or release the air-perchloroethylene gas-vapor stream contained within the dry cleaning machine to the atmosphere while the dry cleaning machine drum is rotating;

5.3.5.2 Shall be monitored according to 5.4.1.1 of this section; and

5.3.5.3 Shall ~~be operated with a diverter valve, which~~ prevent~~s~~ air drawn into the dry cleaning machine when the door of the machine is open from passing through the refrigerated condenser.

5.3.6 Each refrigerated condenser used for the purpose of complying with 5.3.1 of this section and installed on a washer:

5.3.6.1 Shall be operated to not vent or release the air-perchloroethylene gas-vapor stream contained within the washer to the atmosphere until the washer door is opened;

5.3.6.2 Shall be monitored according to 5.4.1.2 of this section; and

5.3.6.3 Shall not use the same refrigerated condenser coil for the washer that is used by a dry-to-dry machine, dryer, or reclaimer.

5.3.7 Each carbon adsorber used for the purposes of complying with 5.3.1, ~~or~~ 5.3.2, 5.3.15.2 or 5.3.15.5.2.2 of this section:

5.3.7.1 Shall not be bypassed to vent or release any air-perchloroethylene gas-vapor stream to the atmosphere at any time and

5.3.7.2 Shall be monitored according to the applicable requirements in 5.4.2 or 5.4.3 of this section.

5.3.8 Each room enclosure used for the purposes of complying with 5.3.1.3 of this section:

5.3.8.1 Shall be operated to vent all air from the room enclosure through a carbon adsorber or an equivalent control device and

5.3.8.2 Shall be equipped with a carbon adsorber that is not the same carbon adsorber used to comply with 5.3.1.2 or.3.2.3 of this section.

5.3.9 The owner or operator of an affected facility shall drain all cartridge filters in their housing, or other sealed container, for a minimum of 24 hours, or shall treat such filters in an equivalent manner, before removal from the dry cleaning facility.

5.3.10 The owner or operator of an affected facility shall store all perchloroethylene and wastes that contain perchloroethylene in solvent tanks or solvent containers with no ~~perceptible~~ vapor leaks. The exception to this requirement is that containers for separator water may be uncovered, as necessary, for proper operation of the machine and still.

5.3.11 [Reserved]. ~~The owner or operator of a dry cleaning system shall inspect the following components weekly for perceptible leaks while the dry cleaning system is operating:~~

~~(1) Hose and pipe connections, fittings, couplings, and valves;~~
~~(2) Door gaskets and seatings;~~
~~(3) Filter gaskets and seatings;~~
~~(4) Pumps;~~
~~(5) Solvent tanks and containers;~~
~~(6) Water separators;~~
~~(7) Muck cookers;~~
~~(8) Stills;~~
~~(9) Exhaust dampers;~~
~~(10) Diverter valves; and~~
~~(11) Cartridge filter housings.~~

5.3.12 [Reserved]. ~~The owner or operator of a dry cleaning facility with a total facility consumption below the applicable consumption levels of Sec. 63.320(d) or (e) shall inspect the components listed in paragraph (k) of this section biweekly for perceptible leaks while the dry cleaning system is operating.~~

5.3.13 The owner or operator of a dry cleaning system shall repair all ~~perceptible~~ vapor leaks detected in 5.3.15.1 of this section within 24 hours. If repair parts must be ordered, either a written or verbal order for those parts shall be initiated within 2 working days of detecting such a leak. Such repair parts shall be installed within 5 working days after receipt.

5.3.14 If parameter values monitored under 5.3.5, 5.3.6, or 5.3.7 of this section do not meet the values specified in 5.4.1, 5.4.2, or 5.4.3 of this section, adjustments or repairs shall be made to the dry cleaning system or control device to meet those values. If repair parts must be ordered, either a written or verbal order for such parts shall be initiated within 2 working days of detecting such a parameter value. Such repair parts shall be installed within 5 working days after receipt.

5.3.15 Additional requirements.

5.3.15.1 The owner or operator of a dry cleaning system shall inspect the components listed in 5.3.15.1.4 of this section for vapor leaks weekly while the component is in operation.

5.3.15.1.1 Area sources shall conduct the inspections using a halogenated hydrocarbon detector or perchloroethylene gas analyzer that is operated according to the manufacturer's instructions. The operator shall place the probe inlet at the surface of each component interface where leakage could occur and move it slowly along the interface periphery.

5.3.15.1.2 Major sources shall conduct the inspections using a perchloroethylene gas analyzer operated according to Method 21 in Appendix A of 40 CFR Part 60.

5.3.15.1.3 [Reserved].

5.3.15.1.4 System components to be inspected weekly for vapor leaks.

5.3.15.1.4.1 Hose and pipe connections, fittings, couplings, and valves;
5.3.15.1.4.2 Door gaskets and seatings;
5.3.15.1.4.3 Filter gaskets and seatings;
5.3.15.1.4.4 Pumps;
5.3.15.1.4.5 Solvent tanks and containers;
5.3.15.1.4.6 Water separators;
5.3.15.1.4.7 Muck cookers;
5.3.15.1.4.8 Stills;
5.3.15.1.4.9 Exhaust dampers;
5.3.15.1.4.10 Diverter valves; and

5.3.15.1.4.11 All filter housings.

5.3.15.2 The owner or operator of each dry cleaning system installed after December 21, 2005, at an area source shall route the air-perchloroethylene gas-vapor stream contained within each dry cleaning machine through a refrigerated condenser and pass the air-perchloroethylene gas-vapor stream from inside the dry cleaning machine drum through a non-vented carbon adsorber or equivalent control device immediately before the door of the dry cleaning machine is opened. The carbon adsorber must be desorbed in accordance with manufacturer's instructions.

5.3.15.3 The owner or operator of any dry cleaning system shall eliminate any emission of perchloroethylene during the transfer of articles between the washer and the dryers or reclaimers.

5.3.15.4 Beginning on July 28, 2008, the owner or operator shall eliminate any emission of perchloroethylene from any dry cleaning system that is installed (including relocation of a used machine) on or after July 13, 2006, and that is located in a building with a residence.

5.3.15.5 Additional requirements for dry cleaning systems located in a building with a residence.

5.3.15.5.1 After December 21, 2020, the owner or operator shall eliminate any emission of perchloroethylene from any dry cleaning system that is located in a building with a residence.

5.3.15.5.2 Each owner or operator of a dry cleaning system installed on or after December 21, 2005, but before July 13, 2006, in a building with a residence, shall be in compliance with 5.3.15.5.2.1 through 5.3.15.5.2.2 of this section, in addition to the other applicable requirements in Section 5.0 of this regulation.

5.3.15.5.2.1 Operate the dry cleaning system inside a vapor barrier enclosure. The exhaust system for the enclosure shall be operated at all times that the dry cleaning system is in operation and during maintenance. The entry door to the enclosure may be open only when a person is entering or exiting the enclosure.

5.3.15.5.2.2 Route the air-perchloroethylene gas-vapor stream contained within each dry cleaning machine through a refrigerated condenser and pass the air-perchloroethylene gas-vapor stream from inside the dry cleaning drum through a non-vented carbon adsorber or equivalent control device immediately before the door of the dry cleaning machine is opened. The carbon adsorber must be desorbed in accordance with manufacturer's instructions.

5.3.15.5.2.3 [Reserved].

2 DE Reg. 1390 (2/1/99)

5.4 Test methods and monitoring.

5.4.1 When a refrigerated condenser is used to comply with 5.3.1.1, ~~or~~ 5.3.2.1, 5.3.15.2, or 5.3.15.5.2.2 of this section:

5.4.1.1 The owner or operator shall ~~measure~~ monitor the following parameters, as applicable, on a weekly basis:

5.4.1.1.1 The refrigeration system high pressure and low pressure during the drying phase to determine if the pressures are in the range specified in the manufacturer's operating instructions.

5.4.1.1.2 If the dry cleaning machine is not equipped with refrigeration system pressure gauges, the temperature of the air-perchloroethylene gas-vapor stream on the outlet side of the refrigerated condenser on a dry-to-dry machine, dryer, or reclaimer with a temperature sensor to determine if it is equal to or less than of 7.2^{o}C (45^{o}F) before the end of the cool-down or drying cycle while the air-perchloroethylene gas-vapor stream is flowing through the condenser. The temperature sensor shall be used according to the manufacturer's instructions and shall be designed to measure a temperature of 7.2^{o}C (45^{o}F) to an accuracy of ±1.1^{o}C (±2^{o}F).

5.4.1.2 The owner or operator shall calculate the difference between the temperature of the air-perchloroethylene gas-vapor stream entering the refrigerated condenser on a washer and the temperature of the air-perchloroethylene gas-vapor stream exiting the refrigerated condenser on the washer weekly to determine that the difference is greater than or equal to 11.1^{o}C (20^{o}F).

5.4.1.2.1 Measurements of the inlet and outlet streams shall be made with

a temperature sensor. Each temperature sensor shall be used according to the manufacturer's instructions, and designed to measure at least a temperature range from 0^{o}C (32^{o}F) to 48.9^{o}C (120^{o}F) to an accuracy of $\pm 1.1^{o}$C ($\pm 2^{o}$F).

5.4.1.2.2 The difference between the inlet and outlet temperatures shall be calculated weekly from the measured values.

5.4.2 When a carbon adsorber is used to comply with 5.3.1.2 of this section, 5.3.8 of this section, or exhaust is passed through a carbon adsorber immediately upon the machine door opening to comply with 5.3.1.1, 5.3.2.1, 5.3.2.3, 5.3.15.2, or 5.3.15.5.2.2 of this section, the owner or operator shall measure the concentration of perchloroethylene in the exhaust of the carbon adsorber weekly with a colorimetric detector tube or perchloroethylene gas analyzer. The measurement shall be taken while the dry cleaning machine is venting to that carbon adsorber at the end of the last dry cleaning cycle prior to desorption of that carbon adsorber or removal of the activated carbon to determine that the perchloroethylene concentration in the exhaust is equal to or less than 100 parts per million by volume. The owner or operator shall:

5.4.2.1 Use a colorimetric detector tube or perchloroethylene gas analyzer designed to measure a concentration of 100 parts per million by volume of perchloroethylene in air to an accuracy of ±25 parts per million by volume;

5.4.2.2 Use the colorimetric detector tube or perchloroethylene gas analyzer according to the manufacturer's instructions; and

5.4.2.3 Provide a sampling port for monitoring within the exhaust outlet of the carbon adsorber that is easily accessible and located at least 8 stack or duct diameters downstream from any flow disturbance such as a bend, expansion, contraction, or outlet; downstream from no other inlet; and 2 stack or duct diameters upstream from any flow disturbance such as a bend, expansion, contraction, inlet, or outlet.

5.4.3 If the air-perchloroethylene gas-vapor stream is passed through a carbon adsorber immediately prior to machine door opening to comply with 5.3.1.1, 5.3.2.1, 5.3.2.3, 5.3.15.2, or 5.3.15.5.2.2 of this section, the owner or operator of an affected facility shall measure the concentration of perchloroethylene in the dry cleaning machine drum at the end of the dry cleaning cycle weekly with a colorimetric detector tube or perchloroethylene gas analyzer to determine that the perchloroethylene concentration is equal to or less than 300 parts per million by volume. The owner or operator shall:

5.4.3.1 Use a colorimetric detector tube or perchloroethylene gas analyzer designed to measure a concentration of 300 parts per million by volume of perchloroethylene in air to an accuracy ±75 parts per million by volume; ~~and~~

5.4.3.2 Use the colorimetric detector tube or perchloroethylene gas analyzer according to the manufacturer's instructions; and

5.4.3.3 Conduct the weekly monitoring by inserting the colorimetric detector tube or perchloroethylene gas analyzer into the open space above the articles at the rear of the dry cleaning machine drum immediately upon opening the dry cleaning machine door.

5.4.4 When calculating yearly perchloroethylene consumption for the purpose of demonstrating applicability according to 5.1 of this section, the owner or operator shall perform the following calculation on the first day of every month:

5.4.4.1 Sum the volume of all perchloroethylene purchases made in each of the previous 12 months, as recorded in the log described in 5.5.4.1 of this section.

5.4.4.2 If no perchloroethylene purchases were made in a given month, then the perchloroethylene consumption for that month is zero gallons.

5.4.4.3 The total sum calculated in 5.4.4 of this section is the yearly perchloroethylene consumption at the facility.

2 DE Reg. 1390 (2/1/99)

5.5 Reporting and recordkeeping requirements.

5.5.1 Each owner or operator of a dry cleaning facility shall notify the Department in writing by June 30, 1999 or upon startup, whichever is later, and provide the following information:

5.5.1.1 The name and address of the owner or operator;

5.5.1.2 The address (that is, physical location) of the dry cleaning facility;

5.5.1.3 A brief description of the type of each dry cleaning machine at the dry cleaning facility;

5.5.1.4 Documentation as described in 5.4.4 of this section of the yearly perchloroethylene consumption at the dry cleaning facility for the previous year to demonstrate applicability according to 5.1 of this section; or an estimation of perchloroethylene consumption for the previous year to estimate applicability with 5.1; ~~and~~

5.5.1.5 A description of the type of control device or devices that will be used to achieve compliance with 5.3.1 or 5.3.2 of this section and whether the control device or devices are currently in use or will be purchased;

5.5.1.6 Documentation to demonstrate to the Department's satisfaction that each room enclosure used to meet the requirements in 5.3.1.3 of this section meets the requirements in 5.3.1.3.1 and 5.3.1.3.2 of this section;

5.5.1.7 Documentation to demonstrate to the Department's satisfaction that each vapor barrier enclosure used to meet the requirements in 5.3.15.5.2.1 of this section meets the requirements in 5.2 of this section;

5.5.1.8 Whether or not the dry cleaning facility is located in a building with a residence, even if the residence is vacant at the time of this notification;

5.5.1.9 Whether or not the dry cleaning facility is located in a building with no other tenants, leased space, or owner occupants;

5.5.1.10 Whether or not the refrigeration system on each dry cleaning system located at the dry cleaning facility is equipped with high and low pressure gauges; and

5.5.1.11 Whether or not a dry cleaning system has been newly installed, constructed or added at the dry cleaning facility since December 21, 2005.

5.5.2 [Reserved]. ~~Each owner or operator of a dry cleaning facility shall submit to the Department on or before the 30th day following start-up or June 30, 1999, whichever is later, a notification of compliance status providing the following information and signed by a responsible official who shall certify its accuracy:~~

~~(1) The yearly perchloroethylene solvent consumption limit based upon the yearly solvent consumption calculated according to Sec. 63.323(d);~~

~~(2) Whether or not they are in compliance with each applicable requirement of Sec. 63.322; and~~

~~(3) All information contained in the statement is accurate and true.~~

5.5.3 Exceedance of solvent consumption amounts.

5.5.3.1 Each owner or operator of an area source dry cleaning facility that exceeds the solvent consumption amounts specified in ~~paragraphs 63.320 (d), (e), or (g)~~ 5.1.7 of this section shall notify the Department not later than 30 days after the exceedance occurred. The notification shall provide the following information and shall be signed by a responsible official who shall certify its accuracy:

5.5.3.1.1 The name and address of the dry cleaning facility;

5.5.3.1.2 A copy of the yearly perchloroethylene consumption records that indicate that there was an exceedance of the applicable amount specified in ~~paragraphs 63.320 (d), (e), or (g)~~ 5.1.7 of this section;

5.5.3.1.3 The circumstances that led to the exceedance; and

5.5.3.1.4 A statement that all information contained in the notification is true and accurate.

5.5.3.2 Each owner or operator of an area source dry cleaning facility that becomes subject to additional requirements ~~under Sec. 63.320 (f)(1) or (i)(1)~~ in 5.1.9.1 of this section shall submit to the Department on or before the dates specified in ~~Sec. 63.320 (f)(1) or (i)(1)~~ 5.1.9.1, a notification of compliance status providing the ~~following~~ information in 5.5.6.1 through 5.5.6.11 of this section and signed by a responsible official who shall certify its accuracy~~:~~

~~(i) The new yearly perchloroethylene solvent consumption limit based upon the yearly solvent consumption calculated according to Sec. 63.323(d);~~

~~(ii) Whether or not they are is in compliance with each applicable requirement of Sec. 63.322; and~~

~~(iii) All information contained in the statement is accurate and true~~.

5.5.4 Each owner or operator of a dry cleaning facility shall keep receipts of perchloroethylene purchases and a log of the following information and maintain such information on site and show it upon request for a period of 5 years:

5.5.4.1 The volume of perchloroethylene purchased each month by the dry cleaning facility as recorded from perchloroethylene purchases; if no perchloroethylene is purchased during a given month then the owner or operator would enter zero gallons into the log;

5.5.4.2 The calculation and result of the yearly perchloroethylene consumption determined on the first day of each month as specified in 5.4.4 of this section;

5.5.4.3 The dates when the dry cleaning system components are inspected for ~~perceptible~~ vapor leaks, as specified in ~~Sec. 63.322(k) or (l)~~ 5.3.15.1 of this section, and the name or location of dry cleaning system components where ~~perceptible~~ vapor leaks are detected;

5.5.4.4 The dates of repair and records of written or verbal orders for repair parts to demonstrate compliance with 5.3.13 and 5.3.14 of this section;

5.5.4.5 The dates and high and low pressure gauge monitoring results, as specified in 5.4 of this section, if a refrigerated condenser is used to comply with 5.3.1, 5.3.2, or 5.3.15 of this section;

5.5.4.6 If the dry cleaning machine is not equipped with refrigeration system pressure gauges, the ~~The~~ dates and temperature sensor monitoring results, as specified in 5.4 of this section, if a refrigerated condenser is used to comply with 5.3.1, ~~or~~ 5.3.2, or 5.3.15 of this section; and

5.5.4.7 The dates and monitoring results for carbon adsorbers, as specified in 5.4 of this section, if a carbon adsorber is used to comply with 5.3.1.1, 5.3.1.2, 5.3.2.1, ~~or~~ 5.3.2.3, 5.3.8, or 5.3.15.5 of this section.

5.5.5 Each owner or operator of a dry cleaning facility shall retain onsite a copy of the design specifications and the operating manuals for each dry cleaning system and each emission control device located at the dry cleaning facility.

5.5.6 Each owner or operator of a dry cleaning facility shall submit to the Department by registered mail not later than July 28, 2008 or within 30 days of startup, whichever is later, a notification of compliance status providing the following information and signed by a responsible official who shall certify its accuracy:

5.5.6.1 The name and address of the owner or operator;

5.5.6.2 The address (that is, physical location) of the dry cleaning facility;

5.5.6.3 Whether or not the dry cleaning facility is located in a building with a residence, even if the residence is vacant at the time of this notification;

5.5.6.4 Whether or not the dry cleaning facility is located in a building with no other tenants, leased space, or owner occupants;

5.5.6.5 Whether or not the refrigeration system on each dry cleaning system located at the dry cleaning facility is equipped with high and low pressure gauges;

5.5.6.6 Whether or not a dry cleaning system has been newly installed, constructed or added at the dry cleaning facility since December 21, 2005;

5.5.6.7 All information necessary to demonstrate to the Department's satisfaction that each vapor barrier enclosure used to meet the requirements in 5.3.15.5.2.1 of this section meets the requirements in 5.2 of this section;

5.5.6.8 Whether the dry cleaning facility is a major or area source;

5.5.6.9 The yearly perchloroethylene solvent consumption based upon the yearly solvent consumption calculated according to 5.4.4 of this section;

5.5.6.10 Whether or not the dry cleaning facility is in compliance with each applicable requirement in 5.3 of this section; and

5.5.6.11 All information contained in the statement is accurate and true.

2 DE Reg. 1390 (2/1/99)

5.6 Determination of equivalent emission control technology.

5.6.1 Any person requesting that the use of certain equipment or procedures be considered equivalent to the requirements in 5.3 of this section shall collect, verify, and submit to the Administrator (with copy to the Department) the following information to show that the alternative achieves equivalent emission reductions:

5.6.1.1 Diagrams, as appropriate, illustrating the emission control technology, its

operation, and integration into or function with dry-to-dry machines or transfer machine systems and their ancillary equipment during each portion of the normal dry cleaning cycle;

5.6.1.2 Information quantifying vented perchloroethylene emissions from the dry-to-dry machines or transfer machine systems during each portion of the dry cleaning cycle with and without the use of the candidate emission control technology;

5.6.1.3 Information on solvent mileage achieved with and without the candidate emission control technology. Solvent mileage is the average weight of articles cleaned per volume of perchloroethylene used. Solvent mileage data must be of continuous duration for at least 1 year under the conditions of a typical dry cleaning operation. This information on solvent mileage must be accompanied by information on the design, configuration, operation, and maintenance of the specific dry cleaning system from which the solvent mileage information was obtained;

5.6.1.4 Identification of maintenance requirements and parameters to monitor to ensure proper operation and maintenance of the candidate emission control technology;

5.6.1.5 Explanation of why this information is considered accurate and representative of both the short-term and the long-term performance of the candidate emission control technology on the specific dry cleaning system examined;

5.6.1.6 Explanation of why this information can or cannot be extrapolated to dry cleaning systems other than the specific systems examined; and

5.6.1.7 Information on the cross-media impacts (to water and solid waste) of the candidate emission control technology and demonstration that the cross-media impacts are less than or equal to the cross-media impacts of a refrigerated condenser.

5.6.2 For the purpose of determining equivalency to control equipment required in 5.3 of this section, the Administrator will evaluate the petition to determine whether equivalent control of perchloroethylene emissions has been adequately demonstrated.

5.6.3 Where the Administrator determines that certain equipment and procedures may be equivalent, the Administrator will publish a notice in the Federal Register proposing to consider this equipment or these procedures as equivalent. After notice and opportunity for public hearing, the Administrator will publish the final determination of equivalency in the Federal Register.

2 DE Reg. 1390 (2/1/99)

5.7 [Reserved]**[.]**

11 DE Reg. 1489 (05/01/08) (Final)