

Annex A
TITLE 25. ENVIRONMENTAL PROTECTION
PART I. DEPARTMENT OF ENVIRONMENTAL PROTECTION
Subpart C. PROTECTION OF NATURAL RESOURCES
ARTICLE III. AIR RESOURCES
CHAPTER 129. STANDARDS FOR SOURCES

Control of VOC Emissions from Conventional Oil and Natural Gas Sources

(*Editor's Note:* Sections 129.131—129.140 are proposed to be added and are printed in regular type to enhance readability.)

§ 129.131. General provisions and applicability.

(a) *Applicability.* Beginning _____ (*Editor's Note:* The blank refers to the effective date of this rulemaking.), this section and §§ 129.132—129.140 apply to an owner or operator of one or more of the following conventional oil and natural gas sources of VOC emissions installed at a conventional well site, a gathering and boosting station or a natural gas processing plant in this Commonwealth which were constructed on or before _____ (*Editor's Note:* The blank refers to the effective date of this rulemaking.):

- (1) Storage vessels at:
 - (i) A conventional well site.
 - (ii) A gathering and boosting station.
 - (iii) A natural gas processing plant.
 - (iv) The natural gas transmission and storage segment.
- (2) Natural gas-driven continuous bleed pneumatic controllers.
- (3) Natural gas-driven diaphragm pumps.
- (4) Reciprocating compressors and centrifugal compressors.
- (5) Fugitive emissions components.

(b) *Existing RACT permit.* Compliance with the requirements of this section and §§ 129.132—129.140 assures compliance with the requirements of a permit issued under §§ 129.91—129.95 (relating to stationary sources of NO_x and VOCs) or §§ 129.96—129.100 (relating to additional RACT requirements for major sources of NO_x and VOCs) to the owner or operator of a source subject to subsection (a) prior to _____ (*Editor's Note:* The blank refers to the effective date of this rulemaking.), to control, reduce or minimize VOC emissions from oil and natural gas

sources listed in subsection (a), except to the extent the operating permit contains more stringent requirements.

§ 129.132. Definitions, acronyms and EPA methods.

(a) *Definitions and acronyms.* The following words and terms, when used in this section, §§ 129.131 (relating to general provisions and applicability) and 129.133—129.140, have the following meanings, unless the context clearly indicates otherwise:

AVO—Audible, visual and olfactory.

Bleed rate—The rate in standard cubic feet per hour at which natural gas is continuously vented from a natural gas-driven continuous bleed pneumatic controller.

Centrifugal compressor—

(i) A machine for raising the pressure of natural gas by drawing in low-pressure natural gas and discharging significantly higher pressure natural gas by means of mechanical rotating vanes or impellers.

(ii) The term does not include a screw compressor, sliding vane compressor or liquid ring compressor.

Closed vent system—A system that is not open to the atmosphere and that is composed of hard-piping, ductwork, connections and, if necessary, flow-inducing devices that transport gas or vapor from a piece or pieces of equipment to a control device or back to a process.

Condensate—Hydrocarbon liquid separated from natural gas that condenses due to changes in the temperature, pressure, or both, and remains liquid at standard conditions.

Connector—

(i) A flanged fitting, screwed fitting or other joined fitting used to connect two pipes or a pipe and a piece of process equipment or that closes an opening in a pipe that could be connected to another pipe.

(ii) The term does not include a joined fitting welded completely around the circumference of the interface.

Control device—An enclosed combustion device, vapor recovery system or flare.

Conventional well—

(i) A bore hole drilled or being drilled for the purpose of or to be used for construction of a well regulated under 58 Pa.C.S. §§ 3201—3274 (relating to development) that is not an unconventional well, irrespective of technology or design.

(ii) The term includes, but is not limited to:

(A) Wells drilled to produce oil.

(B) Wells drilled to produce natural gas from formations other than shale formations.

(C) Wells drilled to produce natural gas from shale formations located above the base of the Elk Group or its stratigraphic equivalent.

(D) Wells drilled to produce natural gas from shale formations located below the base of the Elk Group where natural gas can be produced at economic flow rates or in economic volumes without the use of vertical or nonvertical well bores stimulated by hydraulic fracture treatments or multilateral well bores or other techniques to expose more of the formation to the well bore.

(E) Irrespective of formation, wells drilled for collateral purposes, such as monitoring, geologic logging, secondary and tertiary recovery or disposal injection.

Conventional Well Site—A location with exclusively one or more conventional wells. A location with both unconventional and conventional wells is considered to be an unconventional well site.

Custody transfer—The transfer of natural gas after processing or treatment, or both, in the producing operation or from a storage vessel or an automatic transfer facility or other equipment, including a product loading rack, to a pipeline or another form of transportation.

Deviation—An instance in which the owner or operator of a source subject to this section, §§ 129.131 and 129.133—129.140 fails to meet one or more of the following:

(i) A requirement or an obligation established in this section, § 129.131 or §§ 129.133—129.140, including an emission limit, operating limit or work practice standard.

(ii) A term or condition that is adopted to implement an applicable requirement in this section, § 129.131 or §§ 129.133—129.140 and which is included in the operating permit for the affected source.

(iii) An emission limit, operating limit or work practice standard in this section, § 129.131 or §§ 129.133—129.140 during startup, shutdown or malfunction, regardless of whether a failure is permitted by this section, § 129.131 or §§ 129.133—129.140.

FID—Flame ionization detector.

First attempt at repair—For purposes of § 129.137 (relating to fugitive emissions components):

(i) An action using best practices taken to stop or reduce fugitive emissions to the atmosphere.

(ii) The term includes:

- (A) Tightening bonnet bolts.
- (B) Replacing bonnet bolts.
- (C) Tightening packing gland nuts.
- (D) Injecting lubricant into lubricated packing.

Flare—

- (i) A thermal oxidation system using an open flame without an enclosure.
- (ii) The term does not include a horizontally or vertically installed ignition device or pit flare used to combust otherwise vented emissions from completions.

Flow line—A pipeline used to transport oil or gas, or both, to processing equipment, compression equipment, storage vessel or other collection system for further handling or to a mainline pipeline.

Fugitive emissions component—

- (i) A piece of equipment that has the potential to emit fugitive emissions of VOC at a well site, including the following:
 - (A) A valve.
 - (B) A connector.
 - (C) A pressure relief device.
 - (D) An open-ended line.
 - (E) A flange.
 - (F) A compressor.
 - (G) An instrument.
 - (H) A meter.
 - (I) A cover or closed vent system not subject to § 129.138 (relating to covers and closed vent systems).

(J) A thief hatch or other opening on a controlled storage vessel not subject to § 129.133 (relating to storage vessels).

(ii) The term does not include a device, such as a natural gas-driven continuous bleed pneumatic controller or a natural gas-driven diaphragm pump, that vents as part of normal operations if the gas is discharged from the device's vent.

GOR—Gas-to-oil ratio—The ratio of the volume of gas at standard temperature and pressure that is produced from a volume of oil when depressurized to standard temperature and pressure.

Gathering and boosting station—

(i) A permanent combination of one or more compressors that collects natural gas from one or more well sites and moves the natural gas at increased pressure into a gathering pipeline to the natural gas processing plant or into the pipeline.

(ii) The term does not include the combination of one or more compressors located at a well site or located at an onshore natural gas processing plant.

Hard-piping—Pipe or tubing that is manufactured and properly installed using good engineering judgment and standards.

Hydraulic fracturing—The process of directing pressurized fluids containing a combination of water, proppant and added chemicals to penetrate tight formations, such as shale or coal formations, that subsequently require high rate, extended flowback to expel fracture fluids and solids during a completion.

Hydraulic refracturing—Conducting a subsequent hydraulic fracturing operation at a well that has previously undergone a hydraulic fracturing operation.

In-house engineer—An individual who is both of the following:

(i) Employed by the same owner or operator as the responsible official that signs the certification required under § 129.140(k) (relating to recordkeeping and reporting).

(ii) Qualified by education, technical knowledge and expertise in the design and operation of a natural gas-driven diaphragm pump or closed vent system to make the technical certification required under § 129.135(c)(3)(ii) (relating to natural gas driven diaphragm pumps) or § 129.138(c)(3), or both, as applicable.

Intermediate hydrocarbon liquid—A naturally occurring, unrefined petroleum liquid.

LDAR—Leak detection and repair.

Leak—An emission detected using one or more of the following methods:

(i) Through audible, visual or odorous evidence during an AVO inspection.

(ii) By OGI equipment calibrated according to § 129.137(h) (relating to fugitive emissions components).

(iii) With a concentration of 500 ppm or greater as methane or equivalent by a gas leak detector calibrated according to § 129.137(i).

(iv) Using an alternative leak detection method approved by the Department in § 129.137(c)(2)(ii)(C), (c)(3)(ii)(C) or (e)(2)(iii).

Maximum average daily throughput—The single highest daily average throughput during the 30-day potential to emit evaluation period employing generally accepted methods.

Monitoring system malfunction—

(i) A sudden, infrequent, not reasonably preventable failure of the monitoring system to provide valid data.

(ii) The term does not include a system failure caused by poor maintenance or careless operation.

Natural gas distribution segment—The delivery of natural gas to the end user by a distribution company after the distribution company receives the natural gas from the natural gas transmission and storage segment.

Natural gas-driven diaphragm pump—

(i) A positive displacement pump powered by pressurized natural gas that uses the reciprocating action of flexible diaphragms in conjunction with check valves to pump a fluid.

(ii) The term does not include either of the following:

(A) A pump in which a fluid is displaced by a piston driven by a diaphragm.

(B) A lean glycol circulation pump that relies on energy exchange with the rich glycol from the contactor.

Natural gas-driven continuous bleed pneumatic controller—An automated instrument used for maintaining a process condition such as liquid level, pressure, delta-pressure or temperature powered by a continuous flow of pressurized natural gas.

Natural gas liquids—The hydrocarbons, such as ethane, propane, butane and pentane that are extracted from field gas.

Natural gas processing plant—

(i) A processing site engaged in the extraction of natural gas liquids from field gas, fractionation of mixed natural gas liquids to natural gas products, or both.

(ii) The term does not include a Joule-Thompson valve, a dew point depression valve or an isolated or standalone Joule-Thompson skid.

Natural gas transmission and storage segment—The term includes the following:

(i) The pipelines used for the long-distance transport of natural gas, excluding processing.

(ii) The natural gas transmission stations which include the following:

(a) The land, mains, valves, meters, boosters, regulators, storage vessels, dehydrators and compressors.

(b) The driving units and appurtenances associated with the items listed in clause (a).

(c) The equipment used for transporting gas from a production plant, delivery point of purchased gas, gathering system, storage area or other wholesale source of gas to one or more distribution areas.

(iii) The aboveground storage facilities and underground storage facilities that transport and store natural gas between the natural gas processing plant and natural gas distribution segment.

OGI—Optical gas imaging.

Open-ended valve or line—A valve, except a safety relief valve, having one side of the valve seat in contact with process fluid and one side open to the atmosphere, either directly or through open piping.

Produced water—Water that is extracted from the earth from an oil or natural gas production well or that is separated from crude oil, condensate or natural gas after extraction.

Qualified professional engineer—

(i) An individual who is licensed by a state as a Professional Engineer to practice one or more disciplines of engineering and who is qualified by education, technical knowledge and experience to make the required specific technical certification.

(ii) The individual making this certification must be currently licensed in this Commonwealth or another state in which the responsible official, as defined in § 121.1 (relating to definitions), is located and with which the Commonwealth offers reciprocity.

Quality assurance or quality control activity—An activity such as a system accuracy audit and a zero and span adjustment that ensures the proper calibration and operation of monitoring equipment.

Reciprocating compressor—A piece of equipment that employs linear movement of a driveshaft to increase the pressure of a process gas by positive displacement.

Reciprocating compressor rod packing—

(i) A series of flexible rings in machined metal cups that fit around the reciprocating compressor piston rod to create a seal limiting the amount of compressed natural gas that escapes to the atmosphere.

(ii) Another mechanism that provides the same function.

Removed from service—A storage vessel that has been physically isolated and disconnected from the process for a purpose other than maintenance.

Repaired—A piece of equipment that is adjusted or otherwise altered to eliminate a leak and is remonitored to verify that emissions from the equipment are at or below the applicable leak limitation.

Returned to service—A storage vessel that was removed from service which has been:

(i) Reconnected to the original source of liquids or has been used to replace another storage vessel.

(ii) Installed in another location and introduced with crude oil, condensate, intermediate hydrocarbon liquids or produced water.

Routed to a process or *route to a process*—The emissions are conveyed by means of a closed vent system to an enclosed portion of a process that is operational where the emissions are controlled in one or more of the following ways:

(i) Predominantly recycled or consumed, or both, in the same manner as a material that fulfills the same function in the process.

(ii) Transformed by chemical reaction into materials that are not regulated.

(iii) Incorporated into a product.

(iv) Recovered for beneficial use.

Sensor—A device that measures a physical quantity or the change in a physical quantity such as temperature, pressure, flow rate, pH or liquid level.

Storage vessel—

(i) A container used to collect crude oil, condensate, intermediate hydrocarbon liquids or produced water that is constructed primarily of non-earthen materials which provide structural support.

(ii) The term includes a container described in subparagraph (i) that is skid-mounted or permanently attached to something that is mobile which has been located at a site for 180 or more consecutive days.

(iii) The term does not include the following:

(A) A process vessel such as a surge control vessel, bottoms receiver or knockout vessel.

(B) A pressure vessel used to store a liquid or a gas and is designed to operate in excess of 204.9 kilopascals (29.7 pounds per square inch, absolute) and to not vent to the atmosphere as a result of compression of the vapor headspace during filling of the vessel.

(C) A container described in subparagraph (i) with a capacity greater than 100,000 gallons used to recycle water that has been passed through two-stage separation.

Surface site—A combination of one or more graded pad sites, gravel pad sites, foundations, platforms or the immediate physical location upon which equipment is physically affixed.

TOC—Total organic compounds—The results of EPA Method 25A.

UIC—Underground injection control.

UIC Class I Oilfield Disposal Well—A well with a UIC Class I permit that meets the definition in 40 CFR 144.6(a)(2) (relating to classification of wells) and receives eligible fluids from oil and natural gas exploration and production operations.

UIC Class II Oilfield Disposal Well—A well with a UIC Class II permit where wastewater resulting from oil and natural gas production operations is injected into underground porous rock formations not productive of oil or gas and sealed above and below by unbroken, impermeable strata.

Unconventional formation— A geological shale formation existing below the base of the Elk Sandstone or its geologic equivalent stratigraphic interval where natural gas generally cannot be produced at economic flow rates or in economic volumes except by vertical or horizontal well bores stimulated by hydraulic fracture treatments or by using multilateral well bores or other techniques to expose more of the formation to the well bore.

Unconventional well—A bore hole drilled or being drilled for the purpose of or to be used for the production of natural gas from an unconventional formation.

Unconventional well site—A location with one or more unconventional wells.

VRU—Vapor recovery unit—A device used to recover vapor and route it to a process, flow line or other equipment.

Well—A hole drilled for producing oil or natural gas or into which a fluid is injected.

Wellhead—

(i) The piping, casing, tubing and connected valves protruding above the earth's surface for an oil or natural gas well.

(ii) The wellhead ends where the flow line connects to a wellhead valve.

(iii) The term does not include other equipment at the well site except for a conveyance through which gas is vented to the atmosphere.

Well site—

(i) One or more surface sites that are constructed for the drilling and subsequent operation of a conventional well or injection well.

(ii) For purposes of the fugitive emissions standards in § 129.137, the term also means a separate tank battery surface site collecting crude oil, condensate, intermediate hydrocarbon liquids or produced water from a well not located at the well site, for example, a centralized tank battery.

(iii) For purposes of the fugitive emissions standards in § 129.137, the term does not include:

(A) A UIC Class I Oilfield Disposal Well.

(B) A UIC Class II Oilfield disposal well and disposal facility.

(C) The flange immediately upstream of the custody meter assembly.

(D) Equipment, including fugitive emissions components, located downstream of the flange in clause (C).

(b) *EPA methods*. The EPA methods referenced in this section and §§ 129.133—129.140, are those listed as follows, unless the context clearly indicates otherwise:

EPA Method 1—EPA Method 1, 40 CFR Part 60, Appendix A-1 (relating to test methods 1 through 2F), regarding sample and velocity traverses for stationary sources.

EPA Method 1A—EPA Method 1A, 40 CFR Part 60, Appendix A-1, regarding sample and velocity traverses for stationary sources with small stacks or ducts.

EPA Method 2—EPA Method 2, 40 CFR Part 60, Appendix A-1, regarding determination of stack gas velocity and volumetric flow rate (Type S pitot tube).

EPA Method 2A—EPA Method 2A, 40 CFR Part 60, Appendix A-1, regarding direct measurement of gas volume through pipes and small ducts.

EPA Method 2C—EPA Method 2C, 40 CFR Part 60, Appendix A-1, regarding determination of gas velocity and volumetric flow rate in small stacks or ducts (standard pitot tube).

EPA Method 2D—EPA Method 2D, 40 CFR Part 60, Appendix A-1, regarding measurement of gas volume flow rates in small pipes and ducts.

EPA Method 3A—EPA Method 3A, 40 CFR Part 60, Appendix A-2 (relating to test methods 2G through 3C), regarding determination of oxygen and carbon dioxide concentrations in emissions from stationary sources (instrumental analyzer procedure).

EPA Method 3B—EPA Method 3B, 40 CFR Part 60, Appendix A-2, regarding gas analysis for the determination of emission rate correction factor or excess air.

EPA Method 4—EPA Method 4, 40 CFR Part 60, Appendix A-3 (relating to test methods 4 through 5I), regarding determination of moisture content in stack gases.

EPA Method 18—EPA Method 18, 40 CFR Part 60, Appendix A-6 (relating to test methods 16 through 18), regarding measurement of gaseous organic compound emissions by gas chromatography.

EPA Method 21—EPA Method 21, 40 CFR Part 60, Appendix A-7 (relating to test methods 19 through 25E), regarding determination of volatile organic compound leaks.

EPA Method 22—EPA Method 22, 40 CFR Part 60, Appendix A-7, regarding visual determination of fugitive emissions from material sources and smoke emissions from flares.

EPA Method 25A—EPA Method 25A, 40 CFR Part 60, Appendix A-7, regarding determination of total gaseous organic concentration using a flame ionization analyzer.

§ 129.133. Storage vessels.

(a) *Applicability.*

(1) *Potential VOC emissions.* Except as specified in subsections (c) and (d), this section applies to the owner or operator of a storage vessel subject to § 129.131(a)(1) (relating to general provisions and applicability) that has the potential to emit 2.7 TPY or greater VOC emissions.

(2) *Calculation of potential VOC emissions.*

(i) The potential VOC emissions in paragraph (1) must be calculated using a generally accepted model or calculation methodology, based on the maximum average daily throughput as defined in § 129.132 (relating to definitions, acronyms and EPA methods) prior to _____ (*Editor's Note:* The blank refers to the date 60 days after the effective date of this rulemaking.) for an existing storage vessel.

(ii) The determination of potential VOC emissions may consider requirements under a legally and practically enforceable limit established in an operating permit or plan approval approved by the Department.

(iii) Vapor from the storage vessel that is recovered and routed to a process through a VRU is not required to be included in the determination of potential VOC emissions for purposes of determining applicability, if the owner or operator meets the following:

(A) The cover requirements in § 129.138(a) (relating to covers and closed vent systems).

(B) The closed vent system requirements in § 129.138(b).

(iv) If the apparatus that recovers and routes vapor to a process is removed from operation or is operated inconsistently with § 129.138, the owner or operator shall determine the storage vessel's potential VOC emissions under this paragraph within 30 calendar days of the date of apparatus removal or inconsistent operation.

(b) *VOC emissions limitations and control requirements.* Except as specified in subsections (c) and (d), beginning _____ (*Editor's Note:* The blank refers to the date 1 year after the effective date of this rulemaking.), the owner or operator of a storage vessel subject to this section shall reduce VOC emissions by 95.0% by weight or greater. The owner or operator shall comply with paragraph (1) or paragraph (2) as applicable.

(1) *Route the VOC emissions to a control device.* The owner or operator shall do the following:

(i) Equip the storage vessel with a cover that meets the requirements of § 129.138(a).

(ii) Connect the storage vessel to a control device or process through a closed vent system that meets the requirements of § 129.138(b).

(iii) Route the emissions from the storage vessel to a control device or a process that meets the applicable requirements of § 129.139 (relating to control devices).

(iv) Demonstrate that the VOC emissions are reduced as specified in § 129.139(k).

(2) *Equip the storage vessel with a floating roof.* The owner or operator shall install a floating roof that meets the requirements of 40 CFR 60.112b(a)(1) or (2) (relating to standard for volatile organic compounds (VOC)) and the relevant monitoring, inspection, recordkeeping and reporting requirements in 40 CFR Part 60, Subpart Kb (relating to standards of performance for volatile

organic liquid storage vessels (including petroleum liquid storage vessels) for which construction, reconstruction, or modification commenced after July 23, 1984).

(c) *Exceptions.*

(1) The emissions limitations and control requirements in subsection (b) do not apply to the owner or operator of a storage vessel that maintains actual VOC emissions less than 2.7 TPY determined as a 12-month rolling sum. An owner or operator claiming this exception shall perform the compliance demonstration requirements under paragraph (2) and maintain the records under subsection (g), as applicable.

(2) The owner or operator of a storage vessel claiming exception under this subsection shall perform the following:

(i) Beginning on or before _____ (*Editor's Note: The blank refers to the date 30 days after the effective date of this rulemaking.*), calculate the actual VOC emissions once per calendar month using a generally accepted model or calculation methodology. The monthly calculations must meet the following:

(A) Be separated by at least 15 calendar days but not more than 45 calendar days.

(B) Be based on the monthly average throughput for the previous 30 calendar days.

(ii) Comply with subsection (b) within 1 year of the date of the monthly calculation showing that actual VOC emissions from the storage vessel have increased to 2.7 TPY VOC or greater.

(d) *Exemptions.* The emissions limitations and control requirements in subsection (b) do not apply to the owner or operator of a storage vessel that meets one or more of the following:

(1) Is skid-mounted or permanently attached to something that is mobile for which records are available to document that it has been located at a site for less than 180 consecutive days. An owner or operator claiming this exemption shall maintain the records under subsection (g), as applicable.

(2) Is used in the natural gas distribution segment.

(3) Is controlled under 40 CFR Part 60, Subpart Kb or 40 CFR Part 63, Subpart G, Subpart CC, Subpart HH or Subpart WW.

(e) *Requirements for a storage vessel removed from service.* A storage vessel subject to this section that is removed from service is not an affected source for the period that it is removed from service if the owner or operator performs the following:

(1) Completely empties and degasses the storage vessel so that the storage vessel no longer contains crude oil, condensate, produced water or intermediate hydrocarbon liquids. A storage

vessel where liquid is left on walls, as bottom clingage or in pools due to floor irregularity is considered to be completely empty.

(2) Submits a notification in the next annual report required under § 129.140(k)(1) (relating to recordkeeping and reporting) identifying each storage vessel removed from service during the reporting period and the date of its removal from service.

(f) *Requirements for a storage vessel returned to service.* The owner or operator of a storage vessel identified in subsection (e) that is returned to service shall submit a notification in the next annual report required under § 129.140(k)(1) identifying each storage vessel that has been returned to service during the reporting period and the date of its return to service.

(g) *Recordkeeping and reporting requirements.* The owner or operator of a storage vessel subject to this section shall maintain the records under § 129.140(b) and submit the reports under § 129.140(k)(3)(i).

§ 129.134. Natural gas-driven continuous bleed pneumatic controllers.

(a) *Applicability.* This section applies to the owner or operator of a natural gas-driven continuous bleed pneumatic controller subject to § 129.131(a)(2) (relating to general provisions and applicability) located prior to the point of custody transfer of oil to an oil pipeline or of natural gas to the natural gas transmission and storage segment.

(b) *Exception.* An owner or operator may use a natural gas-driven continuous bleed pneumatic controller subject to this section with a bleed rate greater than the applicable requirements in subsection (c) based on functional requirements. An owner or operator claiming this exception shall perform the compliance demonstration requirements under subsection (d) and maintain the records under subsection (e), as applicable.

(c) *VOC emissions limitation requirements.* Except as specified in subsection (b), beginning _____ (*Editor's Note:* The blank refers to the date 1 year after the effective date of this rulemaking.), the owner or operator of a natural gas-driven continuous bleed pneumatic controller subject to this section shall do the following:

(1) Ensure each natural gas-driven continuous bleed pneumatic controller with a natural gas bleed rate greater than 6.0 standard cubic feet per hour, at a location other than a natural gas processing plant, maintains a natural gas bleed rate of less than or equal to 6.0 standard cubic feet per hour.

(2) Ensure each natural gas-driven continuous bleed pneumatic controller maintains a natural gas bleed rate of zero standard cubic feet per hour, if located at a natural gas processing plant.

(3) Perform the compliance demonstration requirements under subsection (d).

(d) *Compliance demonstration requirements.* The owner or operator shall tag each natural gas-driven continuous bleed pneumatic controller affected under subsection (c) with the following:

(1) The date the natural gas-driven continuous bleed pneumatic controller is required to comply with this section.

(2) An identification number that ensures traceability to the records for that natural gas-driven continuous bleed pneumatic controller.

(e) *Recordkeeping and reporting requirements.* The owner or operator of a natural gas-driven continuous bleed pneumatic controller affected under subsection (c) shall maintain the records under § 129.140(c) (relating to recordkeeping and reporting) and submit the reports under § 129.140(k)(3)(ii).

§ 129.135. Natural gas-driven diaphragm pumps.

(a) *Applicability.* This section applies to the owner or operator of a natural gas-driven diaphragm pump subject to § 129.131(a)(3) (relating to general provisions and applicability) located at a well site or natural gas processing plant.

(b) *VOC emissions limitation and control requirements.* Except as specified in subsections (c) and (d), beginning _____ (*Editor's Note:* The blank refers to the date 1 year after the effective date of this rulemaking.), the owner or operator of a natural gas-driven diaphragm pump subject to this section shall comply with the following:

(1) *Conventional well site.* The owner or operator of a natural gas-driven diaphragm pump located at a conventional well site shall reduce the VOC emissions by 95.0% by weight or greater. The owner or operator shall do the following:

(i) Connect the natural gas-driven diaphragm pump to a control device or process through a closed vent system that meets the applicable requirements of § 129.138(b) (relating to covers and closed vent systems).

(ii) Route the emissions from the natural gas-driven diaphragm pump to a control device or a process that meets the applicable requirements of § 129.139 (relating to control devices).

(iii) Demonstrate that the VOC emissions are reduced as specified in § 129.139(k).

(2) *Natural gas processing plant.* The owner or operator of a natural gas-driven diaphragm pump located at a natural gas processing plant shall maintain an emission rate of zero standard cubic feet per hour.

(c) *Exceptions.* The emissions limitations and control requirements in subsection (b) do not apply to the owner or operator of a natural gas-driven diaphragm pump located at a well site which meets one or more of the following:

(1) Routes emissions to a control device which is unable to reduce VOC emissions by 95.0% by weight or greater and there is no ability to route VOC emissions to a process. An owner or operator that claims this exception shall do the following:

(i) Maintain the records under § 129.140(d)(4) (relating to recordkeeping and reporting).

(ii) Connect the natural gas-driven diaphragm pump to the control device through a closed vent system that meets the requirements of § 129.138(b).

(iii) Demonstrate the percentage by which the VOC emissions are reduced as specified in § 129.139(k).

(2) Has no available control device or process. An owner or operator that claims this exception shall do the following:

(i) Maintain the records under § 129.140(d)(5).

(ii) Certify that there is no available control device or process in the next annual report required by § 129.140(k)(1).

(iii) Route emissions from the natural gas-driven diaphragm pump within 30 days of the installation of a control device or process. Once the emissions are routed to a control device or process, the certification of subparagraph (ii) is no longer required and the applicable requirements of this section shall be met.

(3) Is technically infeasible of connecting to a control device or process. An owner or operator that claims this exception shall do the following:

(i) Maintain the records under § 129.140(d)(6).

(ii) Perform an assessment of technical infeasibility which must meet the following:

(A) Be prepared under the supervision of an in-house engineer or qualified professional engineer.

(B) Include a technical analysis of safety considerations, the distance from an existing control device, the pressure losses and differentials in the closed vent system and the ability of the control device to handle the increase in emissions routed to them.

(C) Be certified, signed, and dated by the engineer supervising the assessment, including the statement: "I certify that the assessment of technical infeasibility was prepared under my supervision. I further certify that the assessment was conducted, and this report was prepared under the requirements of 25 Pa. Code § 129.135(c)(3). Based on my professional knowledge and experience, and inquiry of personnel involved in the assessment, the certification submitted herein is true, accurate, and complete. I am aware that there are penalties for knowingly submitting false information."

(d) *Exemptions.* The emissions limitations and control requirements in subsection (b) do not apply to the owner or operator of a natural gas-driven diaphragm pump located at a well site which operates less than 90 days per calendar year. An owner or operator claiming this exemption shall maintain the records under § 129.140(d)(3).

(e) *Removal of control device or process.* The owner or operator of a natural gas-driven diaphragm pump located at a well site that routes emissions to a control device or process which is removed or is no longer available shall comply with one of the exceptions in subsection (c), as applicable.

(f) *Recordkeeping and reporting requirements.* The owner or operator of a natural gas-driven diaphragm pump subject to this section shall maintain the records under § 129.140(d) and submit the reports under § 129.140(k)(3)(iii).

§ 129.136. Compressors.

(a) *Applicability.* This section applies to the owner or operator of a reciprocating compressor or centrifugal compressor subject to § 129.131(a)(4) (relating to general provisions and applicability) that meets the following:

(1) *Reciprocating compressor.* Each reciprocating compressor located between the wellhead and point of custody transfer to the natural gas transmission and storage segment.

(2) *Centrifugal compressor.* Each centrifugal compressor using wet seals that is located between the wellhead and point of custody transfer to the natural gas transmission and storage segment.

(b) *VOC emissions control requirements for a reciprocating compressor.* Beginning _____ (*Editor's Note:* The blank refers to the date 1 year after the effective date of this rulemaking.), the owner or operator of a reciprocating compressor subject to this section shall meet one of the following:

(1) Replace the reciprocating compressor rod packing on or before one of the following:

(i) The reciprocating compressor has operated for 26,000 hours. The number of hours of operation must be continuously monitored beginning on the later of:

(A) The date of the most recent reciprocating compressor rod packing replacement.

(B) _____ (*Editor's Note:* The blank refers to the effective date of this rulemaking.), for a reciprocating compressor rod packing that has not yet been replaced.

(ii) The reciprocating compressor has operated for 36 months. The number of months of operation must be continuously monitored beginning on the later of:

(A) The date of the most recent reciprocating compressor rod packing replacement.

(B) _____ (*Editor's Note:* The blank refers to the date 36 months after the effective date of this rulemaking.), for a reciprocating compressor rod packing that has not yet been replaced.

(2) Route the VOC emissions to a control device or a process that meets § 129.139 (relating to control devices) by using a reciprocating compressor rod packing emissions collection system that operates under negative pressure and meets the cover requirements of § 129.138(a) (relating to covers and closed vent systems) and the closed vent system requirements of § 129.138(b).

(c) *VOC emissions limitation and control requirements for a centrifugal compressor.* Except as specified in subsection (d), the owner or operator of a centrifugal compressor subject to this section shall perform the following:

(1) Reduce the VOC emissions from each centrifugal compressor wet seal fluid degassing system by 95.0% by weight or greater.

(2) Equip the wet seal fluid degassing system with a cover that meets the requirements of § 129.138(a) through a closed vent system that meets the requirements of § 129.138(b) to a control device or a process that meets the applicable requirements of § 129.139.

(3) Demonstrate that the VOC emissions are reduced as specified in § 129.139(k).

(d) *Exemptions.* Subsection (c) does not apply to the owner or operator of a centrifugal compressor that meets the following:

(1) Is located at a well site.

(2) Is located at an adjacent well site and services more than one well site.

(e) *Recordkeeping and reporting requirements.* The owner or operator of a reciprocating compressor or centrifugal compressor subject to this section shall do the following, as applicable:

(1) For a reciprocating compressor, maintain the records under § 129.140(e) (relating to recordkeeping and reporting) and submit the reports under § 129.140(k)(3)(iv).

(2) For a centrifugal compressor, maintain the records under § 129.140(f) and submit the reports under § 129.140(k)(3)(v).

§ 129.137. Fugitive emissions components.

(a) *Applicability.* This section applies to the owner or operator of a fugitive emissions component subject to § 129.131(a)(5) (relating to general provisions and applicability), located at one or more of the following:

(1) A conventional well site.

(2) A natural gas gathering and boosting station.

(3) A natural gas processing plant.

(b) *Average production calculation procedure for a well site.* Beginning on or before _____ (*Editor's Note: The blank refers to the date 30 days after the effective date of this rulemaking.*):

(1) The owner or operator of a well site subject to subsection (a)(1) shall calculate the average production in barrels of oil equivalent per day of the well site using the previous 12 calendar months of operation as reported to the Department and thereafter as specified in subsection (c)(4) for the previous calendar year. The owner or operator shall do the following:

(i) For each well at the well site with production reported to the Department:

(A) Record the barrels of oil produced for each active well.

(B) Convert the natural gas production for each active well to equivalent barrels of oil by dividing the standard cubic feet of natural gas produced by 6,000 standard cubic feet per barrel of oil equivalent.

(C) Convert the condensate production for each active well to equivalent barrels of oil by multiplying the barrels of condensate by 0.9 barrels of oil equivalent per barrel of condensate.

(ii) Calculate the total production for each active well, in barrels of oil equivalent, by adding the results of subparagraph (i)(A)—(C) for each active well.

(iii) Sum the results of subparagraph (ii) for all active wells at the well site and divide by 365 or 366 days for the previous 12 calendar months or the previous calendar year, as applicable.

(2) If the owner or operator does not know the production of an individual well at the well site, the owner or operator shall comply with subsection (c)(2).

(c) *Requirements for a conventional well site.*

(1) For a well site consisting of only oil wells, the owner or operator shall:

(i) Determine the GOR of the oil well site using generally accepted methods.

(ii) If the GOR of the oil well site is less than 300 standard cubic feet of gas per barrel of oil produced, maintain the records under § 129.140(g)(1) (relating to recordkeeping and reporting).

(iii) If the GOR of the oil well site is equal to or greater than 300 standard cubic feet of gas per barrel of oil produced, meet the requirements of paragraph (2) or paragraph (3) based on the results of subsection (b)(1).

(2) For a well site producing, on average, equal to or greater than 15 barrels of oil equivalent per day, with at least one well producing, on average, equal to or greater than 15 barrels of oil equivalent per day, the owner or operator shall:

(i) Conduct an initial AVO inspection on or before _____ (*Editor's Note: The blank refers to the date 60 days after the effective date of this rulemaking.*), with monthly inspections thereafter separated by at least 15 calendar days but not more than 45 calendar days.

(ii) Conduct an initial LDAR inspection program on or before _____ (*Editor's Note: The blank refers to the date 60 days after the effective date of this rulemaking.*), with quarterly inspections thereafter separated by at least 60 calendar days but not more than 120 calendar days using one or more of the following:

(A) OGI equipment.

(B) A gas leak detector that meets the requirements of EPA Method 21.

(C) Another leak detection method approved by the Department.

(3) For a well site producing, on average, equal to or greater than 15 barrels of oil equivalent per day, and at least one well producing, on average, equal to or greater than 5 barrels of oil equivalent per day but less than 15 barrels of oil equivalent per day, the owner or operator shall:

(i) Conduct an initial AVO inspection on or before _____ (*Editor's Note: The blank refers to the date 60 days after the effective date of this rulemaking.*), with monthly inspections thereafter separated by at least 15 calendar days but not more than 45 calendar days.

(ii) Conduct an initial LDAR inspection program on or before _____ (*Editor's Note: The blank refers to the date 150 days after the effective date of this rulemaking.*), with annual inspections thereafter separated by at least 335 calendar days but not more than 395 calendar days using one or more of the following:

(A) OGI equipment.

(B) A gas leak detector that meets the requirements of EPA Method 21.

(C) Another leak detection method approved by the Department.

(4) The owner or operator of a producing well site shall calculate the average production of the well site under subsection (b) for the previous calendar year not later than February 15 and may adjust the frequency of the required LDAR inspection as follows:

(i) If two consecutive calculations show reduced production, the owner or operator may adopt the requirements applicable to the reduced production level.

(ii) If a calculation shows higher production, the owner or operator shall adopt the requirements applicable to the higher production level immediately.

(5) The owner or operator of a well site subject to paragraph (3) may submit to the appropriate Department Regional Office a request, in writing, for an exemption from the requirements of paragraph (3)(ii).

(i) The written request must include the following:

(A) Name and location of the well site.

(B) A demonstration that the requirements of paragraph (3)(ii) are not technically or economically feasible for the well site.

(C) Sufficient methods for demonstrating compliance with all applicable standards or regulations promulgated under the Clean Air Act or the Act.

(D) Sufficient methods for demonstrating compliance with this section, §§ 129.131—129.136 and 129.138—129.140.

(ii) The Department will review the complete written request submitted in accordance with subparagraph (i) and approve or deny the request in writing.

(iii) The Department will submit each exemption determination approved under subparagraph (ii) to the Administrator of the EPA for approval as a revision to the SIP. The owner or operator shall bear the costs of public hearings and notifications, including newspaper notices, required for the SIP submittal.

(iv) The owner or operator of the well site identified in subparagraph (i)(A) shall remain subject to the requirements of paragraphs (1), (3)(i) and (4).

(d) *Requirements for a shut-in conventional well site.* The owner or operator of a conventional well site that is temporarily shut-in is not required to perform an LDAR inspection of the well site until one of the following occurs, whichever is first:

(1) Sixty days after the conventional well site is put into production.

(2) The date of the next required LDAR inspection after the conventional well site is put into production.

(e) *Requirements for a natural gas gathering and boosting station or a natural gas processing plant.* The owner or operator of a natural gas gathering and boosting station or a natural gas processing plant shall conduct the following:

(1) An initial AVO inspection on or before _____ (*Editor's Note: The blank refers to the date 60 days after the effective date of this rulemaking.*), with monthly inspections thereafter separated by at least 15 calendar days but not more than 45 calendar days.

(2) An initial LDAR inspection program on or before _____ (*Editor's Note: The blank refers to the date 60 days after the effective date of this rulemaking.*), with quarterly inspections thereafter separated by at least 60 calendar days but not more than 120 calendar days using one or more of the following:

(i) OGI equipment.

(ii) A gas leak detector that meets the requirements of EPA Method 21.

(iii) Another leak detection method approved by the Department.

(f) *Requirements for extension of the LDAR inspection interval.* The owner or operator of an affected facility may request, in writing, an extension of the LDAR inspection interval from the Air Program Manager of the appropriate Department Regional Office.

(g) *Fugitive emissions monitoring plan.* The owner or operator shall develop, in writing, an emissions monitoring plan that covers the collection of fugitive emissions components at the subject facility within each company-defined area. The written plan must include the following elements:

(1) The technique used for determining fugitive emissions.

(2) A list of fugitive emissions detection equipment, including the manufacturer and model number, that may be used at the facility.

(3) A list of personnel that may conduct the monitoring surveys at the facility, including their training and experience.

(4) The procedure and timeframe for identifying and fixing a fugitive emissions component from which fugitive emissions are detected, including for a component that is unsafe-to-repair.

(5) The procedure and timeframe for verifying fugitive emissions component repairs.

(6) The procedure and schedule for verifying the fugitive emissions detection equipment is operating properly.

(i) For OGI equipment, the verification must be completed as specified in subsection (h).

(ii) For gas leak detection equipment using EPA Method 21, the verification must be completed as specified in subsection (i).

(iii) For a Department-approved method, a copy of the request for approval that shows the method's equivalence to subsection (h) or subsection (i).

(7) A sitemap.

- (8) If using OGI, a defined observation path that meets the following:
- (i) Ensures that all fugitive emissions components are within sight of the path.
 - (ii) Accounts for interferences.
- (9) If using EPA Method 21, a list of the fugitive emissions components to be monitored and an identification method to locate them in the field.
- (10) A written plan for each fugitive emissions component designated as difficult-to-monitor or unsafe-to-monitor which includes the following:
- (i) A method to identify a difficult-to-monitor or unsafe-to-monitor component in the field.
 - (ii) The reason each component was identified as difficult-to-monitor or unsafe-to-monitor.
 - (iii) The monitoring schedule for each component identified as difficult-to-monitor or unsafe-to-monitor. The monitoring schedule for difficult-to-monitor components must include at least one survey per year no more than 13 months apart.
- (h) *Verification procedures for OGI equipment.* An owner or operator that identifies OGI equipment in the fugitive emissions monitoring plan in subsection (g)(6)(i) shall complete the verification by doing the following:
- (1) Demonstrating that the OGI equipment is capable of imaging a gas:
 - (i) In the spectral range for the compound of highest concentration in the potential fugitive emissions.
 - (ii) That is half methane, half propane at a concentration of 10,000 ppm at a flow rate of less than or equal to 60 grams per hour (2.115 ounces per hour) from a 1/4-inch diameter orifice.
 - (2) Performing a verification check each day prior to use.
 - (3) Determining the equipment operator's maximum viewing distance from the fugitive emissions component and how the equipment operator will ensure that this distance is maintained.
 - (4) Determining the maximum wind speed during which monitoring can be performed and how the equipment operator will ensure monitoring occurs only at wind speeds below this threshold.
 - (5) Conducting the survey by using the following procedures:
 - (i) Ensuring an adequate thermal background is present to view potential fugitive emissions.

- (ii) Dealing with adverse monitoring conditions, such as wind.
 - (iii) Dealing with interferences, such as steam.
- (6) Following the manufacturer's recommended calibration and maintenance procedures.
- (i) *Verification procedures for gas leak detection equipment using EPA Method 21.* An owner or operator that identifies gas leak detection equipment using EPA Method 21 in the fugitive emissions monitoring plan in subsection (g)(6)(ii) shall complete the verification by doing the following:
- (1) Verifying that the gas leak detection equipment meets:
 - (i) The requirements of Section 6.0 of EPA Method 21 with a fugitive emissions definition of 500 ppm or greater calibrated as methane using an FID-based instrument.
 - (ii) A site-specific fugitive emission definition that would be equivalent to subparagraph (i) for other equipment approved for use in EPA Method 21 by the Department.
 - (2) Using the average composition of the fluid, not the individual organic compounds in the stream, when performing the instrument response factor of Section 8.1.1 of EPA Method 21.
 - (3) Calculating the average stream response factor on an inert-free basis for process streams that contain nitrogen, air or other inert gases that are not organic hazardous air pollutants or VOCs.
 - (4) Calibrating the gas leak detection instrument in accordance with Section 10.1 of EPA Method 21 on each day of its use using zero air, defined as a calibration gas with less than 10 ppm by volume of hydrocarbon in air, and a mixture of methane in air at a concentration less than 10,000 ppm by volume as the calibration gases.
 - (5) Conducting the surveys, which at a minimum, must comply with the relevant sections of EPA Method 21, including Section 8.3.1.
- (j) *Fugitive emissions detection devices.* Fugitive emissions detection devices must be operated and maintained in accordance with manufacturer-recommended procedures and as required by the test method or a Department-approved method.
- (k) *Background adjustment.* For LDAR inspections using a gas leak detector in accordance with EPA Method 21, the owner or operator may choose to adjust the gas leak detection instrument readings to account for the background organic concentration level as determined by the procedures of Section 8.3.2 of EPA Method 21.
- (l) *Repair and resurvey provisions.* The owner or operator shall repair a leak detected from a fugitive emissions component as follows:

(1) A first attempt at repair must be made within 5 calendar days of detection, and repair must be completed no later than 15 calendar days after the leak is detected unless:

(i) The purchase of a part is required. The repair must be completed no later than 10 calendar days after the receipt of the purchased part.

(ii) The repair is technically infeasible because of one of the following reasons:

(A) It requires vent blowdown.

(B) It requires facility shutdown.

(C) It requires a well shut-in.

(D) It is unsafe to repair during operation of the unit.

(iii) A repair that is technically infeasible under subparagraph (ii) must be completed at the earliest of the following:

(A) After a planned vent blowdown.

(B) The next facility shutdown.

(C) Within 2 years.

(2) The owner or operator shall resurvey the fugitive emissions component no later than 30 calendar days after the leak is repaired.

(3) For a repair that cannot be made during the monitoring survey when the leak is initially found, the owner or operator shall do one of the following:

(i) Take a digital photograph of the fugitive emissions component which includes:

(A) The date the photo was taken.

(B) Clear identification of the component by location, such as by latitude and longitude or other descriptive landmarks visible in the picture.

(ii) Tag the component for identification purposes.

(4) A gas leak is considered repaired if:

(i) There is no visible leak image when using OGI equipment calibrated according to subsection (h).

(ii) A leak concentration of less than 500 ppm as methane is detected when the gas leak detector probe inlet is placed at the surface of the fugitive emissions component for a gas leak detector calibrated according to subsection (i).

(iii) There are no detectable emissions consistent with Section 8.3.2 of EPA Method 21.

(iv) There is no bubbling at the leak interface using the soap solution bubble test specified in Section 8.3.3 of EPA Method 21.

(m) *Recordkeeping and reporting requirements.* The owner or operator of a fugitive emissions component subject to this section shall maintain the records under § 129.140(g) and submit the reports under § 129.140(k)(3)(vi).

§ 129.138. Covers and closed vent systems.

(a) *Requirements for a cover on a storage vessel, reciprocating compressor or centrifugal compressor.* The owner or operator shall perform the following for a cover of a source subject to § 129.133(b)(1)(i) or § 129.136(b)(2) or (c)(2) (relating to storage vessels; and compressors), as applicable:

(1) Ensure that the cover and all openings on the cover form a continuous impermeable barrier over each subject source as follows:

(i) The entire surface area of the liquid in the storage vessel.

(ii) The entire surface area of the liquid in the wet seal fluid degassing system of a centrifugal compressor.

(iii) The rod packing emissions collection system of a reciprocating compressor.

(2) Ensure that each cover opening is covered by a gasketed lid or cap that is secured in a closed, sealed position except when it is necessary to use an opening for one or more of the following:

(i) To inspect, maintain, repair or replace equipment.

(ii) To route a liquid, gas, vapor or fume from the source to a control device or a process that meets the applicable requirements of § 129.139 (relating to control devices) through a closed vent system designed and operated in accordance with subsection (b).

(iii) To inspect or sample the material in a storage vessel.

(iv) To add material to or remove material from a storage vessel, including openings necessary to equalize or balance the internal pressure of the storage vessel following changes in the level of the material in the storage vessel.

(3) Ensure that each storage vessel thief hatch is equipped, maintained and operated with the following:

(i) A mechanism to ensure that the lid remains properly seated and sealed under normal operating conditions, including when working, standing or breathing, or when flash emissions may be generated.

(ii) A gasket made of a suitable material based on the composition of the fluid in the storage vessel and weather conditions.

(4) Conduct an initial AVO inspection on or before _____ (*Editor's Note: The blank refers to the date 60 days after the effective date of this rulemaking.*), with monthly inspections thereafter separated by at least 15 calendar days but not more than 45 calendar days for defects that could result in air emissions. Defects include the following:

(i) A visible crack, hole or gap in the cover.

(ii) A visible crack, hole or gap between the cover and the separator wall.

(iii) A broken, cracked or otherwise damaged seal or gasket on a closure device.

(iv) A broken or missing hatch, access cover, cap or other closure device.

(5) Inspect only those portions of the cover that extend to or above the surface and the connections on those portions of the cover, including fill ports, access hatches and gauge wells that can be opened to the atmosphere for a storage vessel that is partially buried or entirely underground.

(6) Repair a detected leak or defect as specified in § 129.137(l) (relating to fugitive emissions components).

(7) Maintain the records under § 129.140(h) (relating to recordkeeping and reporting) and submit the report under § 129.140(k)(3)(vii).

(b) *Requirements for a closed vent system.* The owner or operator shall perform the following for each closed vent system installed on a source subject to § 129.133(b)(1)(ii), § 129.135(b)(1)(i) or (c)(1)(ii) (relating to natural gas-driven diaphragm pumps) or § 129.136(b)(2) or (c)(2):

(1) Design the closed vent system to route the liquid, gas, vapor or fume emitted from the source to a control device or process that meets the applicable requirements in § 129.139.

(2) Operate the closed vent system with no detectable emissions as determined by the following:

(i) Conduct an initial AVO inspection on or before _____ (*Editor's Note: The blank refers to the date 60 days after the effective date of this rulemaking.*), with monthly inspections thereafter separated by at least 15 calendar days but not more than 45 calendar days for defects that could result in air emissions. Defects include the following:

- (A) A visible crack, hole or gap in piping.
- (B) A loose connection.
- (C) A liquid leak.
- (D) A broken or missing cap or other closure device.

(ii) Conducting a no detectable emissions inspection as specified in subsection (d) during the facility's scheduled LDAR inspection in accordance with § 129.137(c)(2)(ii), (c)(3)(ii) or (e)(2).

(3) Repair a detected leak or defect as specified in § 129.137(1).

(4) Except as specified in subparagraph (iii), if the closed vent system contains one or more bypass devices that could be used to divert the liquid, gas, vapor or fume from routing to the control device or to the process under paragraph (1), perform one or more of the following:

(i) Install, calibrate, operate and maintain a flow indicator at the inlet to the bypass device so when the bypass device is open it does one of the following:

- (A) Sounds an alarm.
- (B) Initiates a notification by means of a remote alarm to the nearest field office.

(ii) Secure the bypass device valve installed at the inlet to the bypass device in the non-diverting position using the following procedure:

(A) Installing either of the following:

- (I) A car-seal.
- (II) A lock-and-key configuration.

(B) Visually inspecting the mechanism in clause (A) to verify that the valve is maintained in the non-diverting position on or before _____ (*Editor's Note: The blank refers to the date 60 days after the effective date of this rulemaking.*), with monthly inspections separated by at least 15 calendar days but not more than 45 calendar days.

(C) Maintaining the records under § 129.140(i)(4).

(iii) Subparagraphs (i) and (ii) do not apply to a low leg drain, high point bleed, analyzer vent, open-ended valve or line, or safety device.

(5) Conduct an assessment that meets the requirements of subsection (c).

(6) Maintain the records under § 129.140(i) and submit the reports under § 129.140(k)(3)(viii).

(c) *Requirements for closed vent system design and capacity assessment.* An owner or operator that installs a closed vent system under subsection (b) shall perform a design and capacity assessment which must include the following:

(1) Be prepared under the supervision of an in-house engineer or qualified professional engineer.

(2) Verify the following:

(i) That the closed vent system is of sufficient design and capacity to ensure that the emissions from the emission source are routed to the control device or process.

(ii) That the control device or process is of sufficient design and capacity to accommodate the emissions from the emission source.

(3) Be certified, signed, and dated by the engineer supervising the assessment, including the statement: "I certify that the closed vent design and capacity assessment was prepared under my supervision. I further certify that the assessment was conducted, and this report was prepared under the requirements of 25 Pa. Code § 129.138(c). Based on my professional knowledge and experience, and inquiry of personnel involved in the assessment, the certification submitted herein is true, accurate, and complete. I am aware that there are penalties for knowingly submitting false information."

(d) *No detectable emissions procedures.* The owner or operator shall conduct the no detectable emissions inspection required under subsection (b)(2)(ii) by performing one of the following:

(1) Use OGI equipment that meets § 129.137(h).

(2) Use a gas leak detection instrument that meets § 129.137(i). The owner or operator may adjust the gas leak detection instrument readings as specified in § 129.137(k).

(3) Use another leak detection method approved by the Department.

(4) Determine if a potential leak interface operates with no detectable emissions, if the gas leak detection instrument reading is not a leak as defined in § 129.132(a) (relating to definitions, acronyms and EPA methods).

§ 129.139. Control devices.

(a) *Applicability.* This section applies to the owner or operator of each control device that receives a liquid, gas, vapor or fume from a source subject to § 129.133(b)(1)(iii), § 129.135(b)(1)(ii) or (c)(1), or § 129.136(b)(2) or (c)(2) (relating to storage vessels; natural gas-driven diaphragm pumps; and compressors).

(1) The owner or operator shall perform the following:

(i) Operate each control device whenever a liquid, gas, vapor or fume is routed to the control device.

(ii) Maintain the records under § 129.140(j) (relating to recordkeeping and reporting) and submit the reports under § 129.140(k)(3)(ix).

(2) The owner or operator may route the liquid, gas, vapor or fume from more than one source subject to § 129.133(b)(1)(iii), § 129.135(b)(1)(ii) or (c)(1), or § 129.136(b)(2) or (c)(2) to a control device installed and operated under this section.

(b) *General requirements for a control device.* The owner or operator of a control device subject to this section shall install and operate one or more control devices listed in subsections (c)—(i). The owner or operator shall meet the following requirements, as applicable:

(1) Operate the control device following the manufacturer's written operating instructions, procedures and maintenance schedule to ensure good air pollution control practices for minimizing VOC emissions.

(2) Ensure that the control device is maintained in a leak-free condition by conducting a physical integrity check according to the manufacturer's instructions, with monthly inspections separated by at least 15 calendar days but not more than 45 calendar days.

(3) Maintain a pilot flame while operating the control device and monitor the pilot flame by installing a heat sensing CPMS as specified under subsection (m)(3). If the heat sensing CPMS indicates the absence of the pilot flame or if the control device is smoking or shows other signs of improper equipment operation, ensure the control device is returned to proper operation by performing the following procedures:

(i) Checking the air vent for obstruction and clearing an observed obstruction.

(ii) Checking for liquid reaching the combustor.

(4) Operate the control device with no visible emissions, except for periods not to exceed a total of 1 minute during a 15-minute period as determined by conducting a visible emissions test according to Section 11 of EPA Method 22.

(i) Each monthly visible emissions test shall be separated by at least 15 calendar days but not more than 45 calendar days.

(ii) The observation period for the test in subparagraph (i) shall be 15 minutes.

(5) Repair the control device if it fails the visible emissions test of paragraph (4) as specified in subparagraph (i) or subparagraph (ii) and return the control device to compliant operation.

(i) The manufacturer's repair instructions, if available.

(ii) The best combustion engineering practice applicable to the control device if the manufacturer's repair instructions are not available.

(6) Ensure the control device passes the EPA Method 22 visual emissions test described in paragraph (4) following return to operation from a maintenance or repair activity.

(7) Record the inspection, repair and maintenance activities for the control device in a maintenance and repair log.

(c) *Compliance requirements for a manufacturer-tested combustion device.* The owner or operator of a control device subject to this section that installs a control device tested under 40 CFR 60.5413a(d) (relating to what are the performance testing procedures for control devices used to demonstrate compliance at my centrifugal compressor and storage vessel affected facilities?) shall meet subsection (b)(1)—(7) and the following:

(1) Maintain the inlet gas flow rate at less than or equal to the maximum flow rate specified by the manufacturer. This is confirmed by one of the following:

(i) Installing, operating and maintaining a flow CPMS that meets subsection (m)(1) and (2)(i) to measure gas flow rate at the inlet to the control device.

(ii) Conducting a periodic performance test under subsection (k) instead of installing a flow CPMS to demonstrate that the mass content of VOC in the gases vented to the device is reduced by 95.0% by weight or greater.

(2) Submit an electronic copy of the performance test results to the EPA as required by 40 CFR 60.5413a(d) in accordance with 40 CFR 60.5413a(e)(6).

(d) *Compliance requirements for an enclosed combustion device.* The owner or operator of a control device subject to this section that installs an enclosed combustion device, such as a thermal vapor incinerator, catalytic vapor incinerator, boiler or process heater, shall meet subsection (b)(1)—(7) and the following:

(1) Ensure the enclosed combustion control device is designed and operated to meet one of the following performance requirements:

(i) To reduce the mass content of VOC in the gases vented to the device by 95.0% by weight or greater, as determined under subsection (k).

(ii) To reduce the concentration of TOC in the exhaust gases at the outlet to the device to a level less than or equal to 275 ppmvd as propane corrected to 3% oxygen as determined under subsection (l).

(iii) To operate at a minimum temperature of 760 °Celsius (1,400 °Fahrenheit), if it is demonstrated during the performance test conducted under subsection (k) that combustion zone temperature is an indicator of destruction efficiency.

(iv) To introduce the vent stream into the flame zone of the boiler or process heater if a boiler or process heater is used as the control device.

(2) Install, calibrate, operate and maintain a CPMS according to the manufacturer's specifications and subsection (m) to measure the values of the operating parameters appropriate to the control device as follows:

(i) For a thermal vapor incinerator that demonstrates under subsection (m)(6)(i) that combustion zone temperature is an accurate indicator of performance, a temperature CPMS that meets subsection (m)(1) and (4) with the temperature sensor installed at a location representative of the combustion zone temperature.

(ii) For a catalytic vapor incinerator, a temperature CPMS capable of monitoring temperature at two locations and that meets subsection (m)(1) and (4) with one temperature sensor installed in the vent stream at the nearest feasible point to the catalyst bed inlet and a second temperature sensor installed in the vent stream at the nearest feasible point to the catalyst bed outlet.

(iii) For a boiler or process heater that demonstrates under subsection (m)(6)(i) that combustion zone temperature is an accurate indicator of performance, a temperature CPMS that meets subsection (m)(1) and (4) with the temperature sensor installed at a location representative of the combustion zone temperature. The monitoring requirements do not apply if the boiler or process heater meets either of the following:

(A) Has a design heat input capacity of 44 megawatts (150 MMBtu per hour) or greater.

(B) Introduces the vent stream with the primary fuel or uses the vent stream as the primary fuel.

(iv) For a control device complying with paragraph (1)(ii), an organic concentration CPMS that meets subsection (m)(1) and (5) that measures the concentration level of organic compounds in the exhaust vent stream from the control device.

(3) Operate the control device in compliance with the operating parameter value established under subsection (m)(6).

(4) Calculate the daily average of the monitored operating parameter for each operating day, using the valid data recorded by the monitoring system under subsection (m)(7).

(5) Ensure that the daily average of the monitoring parameter value calculated under paragraph (4) complies with the parameter value established under paragraph (3) as specified in subsection (m)(9).

(6) Operate the CPMS installed under paragraph (2) whenever the source is operating, except during the times specified in subsection (m)(8)(iii).

(e) *Compliance requirements for a flare.* The owner or operator of a control device subject to this section that installs a flare designed and operated in accordance with 40 CFR 60.18(b) (relating to general control device and work practice requirements) shall meet subsection (b)(3)—(7).

(f) *Compliance requirements for a carbon adsorption system.* The owner or operator of a control device subject to this section that installs a carbon adsorption system shall meet subsection (b)(1) and (2) and the following:

(1) Design and operate the carbon adsorption system to reduce the mass content of VOC in the gases vented to the device as demonstrated by one of the following:

(i) Determining the VOC emission reduction is 95.0% by weight or greater as specified in subsection (k).

(ii) Reducing the concentration of TOC in the exhaust gases at the outlet to the device to a level less than or equal to 275 ppmvd as propane corrected to 3% oxygen as determined under subsection (l).

(iii) Conducting a design analysis in accordance with subsection (g)(6) or subsection (h)(2) as applicable.

(2) Include a carbon replacement schedule in the design of the carbon adsorption system.

(3) Replace the carbon in the control device with fresh carbon on a regular schedule that is no longer than the carbon service life established according to the design analysis in subsection (g)(6) or subsection (h)(2) or according to the replacement schedule in paragraph (2).

(4) Manage the spent carbon removed from the carbon adsorption system in paragraph (3) by one of the following:

(i) Regenerating or reactivating the spent carbon in one of the following:

(A) A thermal treatment unit for which the owner or operator has been issued a permit under 40 CFR Part 270 (relating to EPA administered permit programs: the hazardous waste permit program) that implements the requirements of 40 CFR Part 264, Subpart X (relating to miscellaneous units).

(B) A unit equipped with operating organic air emission controls in accordance with an emissions standard for VOC under a subpart in 40 CFR Part 60 (relating to standards of performance for new stationary sources) or 40 CFR Part 63 (relating to national emission standards for hazardous air pollutants for source categories).

(ii) Burning the spent carbon in one of the following:

(A) A hazardous waste incinerator, boiler or industrial furnace for which the owner or operator complies with the requirements of 40 CFR Part 63, Subpart EEE (relating to national emission standards for hazardous air pollutants from hazardous waste combustors) and has submitted a Notification of Compliance under 40 CFR 63.1207(j) (relating to what are the performance testing requirements?).

(B) An industrial furnace for which the owner or operator has been issued a permit under 40 CFR Part 270 that implements the requirements of 40 CFR Part 266, Subpart H (relating to hazardous waste burned in boilers and industrial furnaces).

(C) An industrial furnace designed and operated in accordance with the interim status requirements of 40 CFR Part 266, Subpart H.

(g) *Additional compliance requirements for a regenerative carbon adsorption system.* The owner or operator of a control device subject to this section that installs a regenerative carbon adsorption system shall meet subsection (f) and the following:

(1) Install, calibrate, operate and maintain a CPMS according to the manufacturer's specifications and the applicable requirements of subsection (m) to measure the values of the operating parameters appropriate to the control device as follows:

(i) For a source complying with subsection (f)(1)(i), a flow CPMS system that meets the requirements of subsection (m)(1) and (2)(ii) to measure and record the average total regeneration steam mass flow or volumetric flow during each carbon bed regeneration cycle. The owner or operator shall inspect the following:

(A) The mechanical connections for leakage with monthly inspections separated by at least 15 calendar days but not more than 45 calendar days.

(B) The components of the flow CPMS for physical and operational integrity if the flow CPMS is not equipped with a redundant flow sensor with quarterly inspections separated by at least 60 calendar days but not more than 120 calendar days.

(C) The electrical connections of the flow CPMS for oxidation and galvanic corrosion if the flow CPMS is not equipped with a redundant flow sensor with quarterly inspections separated by at least 60 calendar days but not more than 120 calendar days.

(ii) For a source complying with subsection (f)(1)(i), a temperature CPMS that meets the requirements of subsection (m)(1) and (4) to measure and record the average carbon bed

temperature for the duration of the carbon bed steaming cycle and measure the actual carbon bed temperature after regeneration and within 15 minutes of completing the cooling cycle.

(iii) For a source complying with subsection (f)(1)(ii), an organic concentration CPMS that meets subsection (m)(1) and (5) that measures the concentration level of organic compounds in the exhaust vent stream from the control device.

(2) Operate the control device in compliance with the operating parameter value established under subsection (m)(6).

(3) Calculate the daily average of the applicable monitored operating parameter for each operating day, using the valid data recorded by the CPMS as specified in subsection (m)(7).

(4) Ensure that the daily average of the monitoring parameter value calculated under paragraph (3) complies with the parameter value established under paragraph (2) as specified in subsection (m)(9).

(5) Operate the CPMS installed in paragraph (1) whenever the source is operating, except during the times specified in subsection (m)(8)(iii).

(6) Ensure that the design analysis to meet subsection (f)(1)(iii) and (2) for the regenerable carbon adsorption system meets the following:

(i) Includes an analysis of the vent stream, including the following information:

(A) Composition.

(B) Constituent concentrations.

(C) Flowrate.

(D) Relative humidity.

(E) Temperature.

(ii) Establishes the following parameters for the regenerable carbon adsorption system:

(A) Design exhaust vent stream organic compound concentration level.

(B) Adsorption cycle time.

(C) Number and capacity of carbon beds.

(D) Type and working capacity of activated carbon used for the carbon beds.

(E) Design total regeneration stream flow over the period of each complete carbon bed regeneration cycle.

(F) Design carbon bed temperature after regeneration.

(G) Design carbon bed regeneration time.

(H) Design service life of the carbon.

(h) *Additional compliance requirements for a non-regenerative carbon adsorption system.* The owner or operator of a control device subject to this section that installs a non-regenerative carbon adsorption system shall meet subsection (f) and the following:

(1) Monitor the design carbon replacement interval established in subsection (f)(2) or paragraph (2). The design carbon replacement interval must be based on the total carbon working capacity of the control device and the source operating schedule.

(2) Ensure that the design analysis to meet subsection (f)(1)(iii) and (2) for a non-regenerable carbon adsorption system, such as a carbon canister, meets the following:

(i) Includes an analysis of the vent stream including the following information:

(A) Composition.

(B) Constituent concentrations.

(C) Flowrate.

(D) Relative humidity.

(E) Temperature.

(ii) Establishes the following parameters for the non-regenerable carbon adsorption system:

(A) Design exhaust vent stream organic compound concentration level.

(B) Capacity of the carbon bed.

(C) Type and working capacity of activated carbon used for the carbon bed.

(D) Design carbon replacement interval based on the total carbon working capacity of the control device and the source operating schedule.

(iii) Incorporates dual carbon canisters in case of emission breakthrough occurring in one canister.

(i) *Compliance requirements for a condenser or non-destructive control device.* The owner or operator of a control device subject to this section that installs a condenser or other non-destructive control device shall meet subsection (b)(1) and (2) and the following:

(1) Design and operate the condenser or other non-destructive control device to reduce the mass content of VOC in the gases vented to the device as demonstrated by one of the following:

(i) Determining the VOC emissions reduction is 95.0% by weight or greater under subsection (k).

(ii) Reducing the concentration of TOC in the exhaust gases at the outlet to the device to a level less than or equal to 275 ppmvd as propane corrected to 3% oxygen as determined under subsection (l).

(iii) Conducting a design analysis in accordance with paragraph (7).

(2) Prepare a site-specific monitoring plan that addresses the following CPMS design, data collection, and quality assurance and quality control elements:

(i) The performance criteria and design specifications for the CPMS equipment, including the following:

(A) The location of the sampling interface that allows the CPMS to provide representative measurements. For a temperature CPMS that meets the requirements of subsection (m)(1) and (4) the sensor must be installed in the exhaust vent stream as detailed in the procedures of the site-specific monitoring plan.

(B) Equipment performance checks, system accuracy audits or other audit procedures.

(I) Performance evaluations of each CPMS shall be conducted in accordance with the site-specific monitoring plan.

(II) CPMS performance checks, system accuracy audits or other audit procedures specified in the site-specific monitoring plan shall be conducted at least once every 12 months.

(ii) Ongoing operation and maintenance procedures in accordance with 40 CFR 60.13(b) (relating to monitoring requirements).

(iii) Ongoing reporting and recordkeeping procedures in accordance with 40 CFR 60.7(c), (d) and (f) (relating to notification and record keeping).

(3) Install, calibrate, operate and maintain a CPMS according to the site-specific monitoring plan described in paragraph (2) and the applicable requirements of subsection (m) to measure the values of the operating parameters appropriate to the control device as follows:

(i) For a source complying with paragraph (1)(i), a temperature CPMS that meets subsection (m)(1) and (4) to measure and record the average condenser outlet temperature.

(ii) For a source complying with paragraph (1)(ii), an organic concentration CPMS that meets subsection (m)(1) and (5) that measures the concentration level of organic compounds in the exhaust vent stream from the control device.

(4) Operate the control device in compliance with the operating parameter value established under subsection (m)(6).

(5) Calculate the daily average of the applicable monitored operating parameter for each operating day, using the valid data recorded by the CPMS as follows:

(i) For a source complying with paragraph (1)(i), use the calculated daily average condenser outlet temperature as specified in subsection (m)(7) and the condenser performance curve established under subsection (m)(6)(iii) to determine the condenser efficiency for the current operating day. Calculate the 365-day rolling average TOC emission reduction, as appropriate, from the condenser efficiencies as follows:

(A) If there is less than 120 days of data for determining average TOC emission reduction, calculate the average TOC emission reduction for the first 120 days of operation. Compliance is demonstrated with paragraph (1)(i) if the 120-day average TOC emission reduction is equal to or greater than 95.0% by weight.

(B) After 120 days and no more than 364 days of operation, calculate the average TOC emission reduction as the TOC emission reduction averaged over the number of days of operation for which there is data. Compliance is demonstrated with paragraph (1)(i) if the average TOC emission reduction is equal to or greater than 95.0% by weight.

(C) If there is data for 365 days or more of operation, compliance is demonstrated with the TOC emission reduction if the rolling 365-day average TOC emission reduction calculated in subparagraph (i) is equal to or greater than 95.0% by weight.

(ii) For a source complying with paragraph (1)(ii), calculate the daily average concentration for each operating day, using the data recorded by the CPMS as specified in subsection (m)(7). Compliance is demonstrated with paragraph (1)(ii) if the daily average concentration is less than the operating parameter under paragraph (4) as specified in subsection (m)(9).

(6) Operate the CPMS installed in accordance with paragraph (3) whenever the source is operating, except during the times specified in subsection (m)(8)(iii).

(7) Ensure that the design analysis to meet paragraph (1)(iii) for a condenser or other non-destructive control device meets the following:

(i) Includes an analysis of the vent stream including the following information:

- (A) Composition.
- (B) Constituent concentrations.
- (C) Flowrate.
- (D) Relative humidity.
- (E) Temperature.

(ii) Establishes the following parameters for the condenser or other non-destructive control device:

- (A) Design outlet organic compound concentration level.
- (B) Design average temperature of the condenser exhaust vent stream.
- (C) Design average temperatures of the coolant fluid at the condenser inlet and outlet.

(j) *General performance test requirements.* The owner or operator shall meet the following performance test requirements:

(1) The owner or operator shall do the following, as applicable:

(i) Except as specified in subparagraph (iii), conduct an initial performance test within 180 days after installation of a control device.

(ii) Except as specified in subparagraph (iii), conduct a performance test of an existing control device on or before _____ (*Editor's Note: The blank refers to the date 240 days after the effective date of this rulemaking.*), unless the owner or operator of the control device is complying with an established performance test interval, in which case the current schedule should be maintained.

(iii) The performance test in subparagraph (i) or subparagraph (ii) is not required if the owner or operator meets one or more of the following:

(A) Installs a manufacturer-tested combustion device that meets the requirements of subsection (c).

(B) Installs a flare that meets the requirements of subsection (e).

(C) Installs a boiler or process heater with a design heat input capacity of 44 megawatts (150 MMBtu per hour) or greater.

(D) Installs a boiler or process heater which introduces the vent stream with the primary fuel or uses the vent stream as the primary fuel.

(E) Installs a boiler or process heater which burns hazardous waste that meets one or more of the following:

(I) For which an operating permit was issued under 40 CFR Part 270 (relating to EPA administered permit programs: the hazardous waste permit program) and complies with the requirements of 40 CFR Part 266, Subpart H.

(II) For which compliance with the interim status requirements of 40 CFR Part 266, Subpart H has been certified.

(III) Which complies with 40 CFR Part 63, Subpart EEE and for which a Notification of Compliance under 40 CFR 63.1207(j) was submitted to the Department.

(IV) Which complies with 40 CFR Part 63, Subpart EEE and for which a Notification of Compliance under 40 CFR 63.1207(j) will be submitted to the Department within 90 days of the completion of the initial performance test report unless a written request for an extension is submitted to the Department.

(F) Installs a hazardous waste incinerator which meets the requirements of 40 CFR Part 63, Subpart EEE and for which the Notification of Compliance under 40 CFR 63.1207(j):

(I) Was submitted to the Department.

(II) Will be submitted to the Department within 90 days of the completion of the initial performance test report unless a written request for an extension is submitted to the Department.

(G) Requests the performance test be waived under 40 CFR 60.8(b) (relating to performance tests).

(2) Conduct a periodic performance test no more than 60 months after the most recent performance test unless the owner or operator:

(i) Monitors the inlet gas flow for a manufacturer-tested combustion device under subsection (c)(1)(i).

(ii) Installs a control device exempt from testing requirements under paragraph (1)(iii)(A)—(G).

(iii) Establishes a correlation between firebox or combustion chamber temperature and the VOC performance level for an enclosed combustion device under subsection (d)(2)(iii).

(3) Conduct a performance test when establishing a new operating limit.

(k) *Performance test method for demonstrating compliance with a control device weight-percent VOC emission reduction requirement.* Demonstrate compliance with the control device

weight-percent VOC emission reduction requirements of subsections (c)(1)(ii), (d)(1)(i), (f)(1)(i) and (i)(1)(i) by meeting subsection (j) and the following:

(1) Conducting a minimum of three test runs of at least 1-hour duration.

(2) Using EPA Method 1 or EPA Method 1A, as appropriate, to select the sampling sites which must be located at the inlet of the first control device and at the outlet of the final control device. References to particulate mentioned in EPA Method 1 or EPA Method 1A do not apply to this paragraph.

(3) Using EPA Method 2, EPA Method 2A, EPA Method 2C or EPA Method 2D, as appropriate to determine the gas volumetric flowrate.

(4) Using EPA Method 25A to determine compliance with the control device percent VOC emission reduction performance requirement using the following procedure:

(i) Convert the EPA Method 25A results to a dry basis, using EPA Method 4.

(ii) Compute the mass rate of TOC using the following equations:

$$E_i = K_2 C_i M_p Q_i$$

$$E_o = K_2 C_o M_p Q_o$$

Where:

E_i = Mass rate of TOC at the inlet of the control device on a dry basis, in kilograms per hour (pounds per hour).

E_o = Mass rate of TOC at the outlet of the control device on a dry basis, in kilograms per hour (pounds per hour).

K_2 = Constant, 2.494×10^{-6} (ppm) (mole per standard cubic meter) (kilogram per gram) (minute per hour) where standard temperature (mole per standard cubic meter) is 20° Celsius

Or

K_2 = Constant, 1.554×10^{-7} (ppm) (lb-mole per standard cubic feet) (minute per hour), where standard temperature (lb-mole per standard cubic feet) is 68° Fahrenheit.

C_i = Concentration of TOC, as propane, of the gas stream as measured by EPA Method 25A at the inlet of the control device, ppmvd.

C_o = Concentration of TOC, as propane, of the gas stream as measured by EPA Method 25A at the outlet of the control device, ppmvd.

M_p = Molecular weight of propane, 44.1 gram per mole (pounds per lb-mole).

Q_i = Flowrate of gas stream at the inlet of the control device in dry standard cubic meter per minute (dry standard cubic feet per minute).

Q_o = Flowrate of gas stream at the outlet of the control device in dry standard cubic meter per minute (dry standard cubic feet per minute).

(iii) Calculate the percent reduction in TOC as follows:

$$R_{cd} = \frac{E_i - E_o}{E_i} * 100\%$$

Where:

R_{cd} = Control efficiency of control device, percent.

E_i = Mass rate of TOC at the inlet to the control device as calculated in subparagraph (ii), kilograms per hour (pounds per hour).

E_o = Mass rate of TOC at the outlet of the control device as calculated in subparagraph (ii), kilograms per hour (pounds per hour).

(iv) If the vent stream entering a boiler or process heater with a performance testing requirement is introduced with the combustion air or as a secondary fuel, the owner or operator shall:

(A) Calculate E_i in subparagraph (ii) by using the TOC concentration in all combusted vent streams, primary fuels and secondary fuels as C_i .

(B) Calculate E_o in subparagraph (ii) by using the TOC concentration exiting the device as C_o .

(C) Determine the weight-percent reduction of TOC across the device in accordance with subparagraph (iii).

(5) The weight-percent reduction of TOC across the control device represents the VOC weight-percent reduction for demonstration of compliance with subsections (c)(1)(ii), (d)(1)(i), (f)(1)(i) and (i)(1)(i).

(1) *Performance test method for demonstrating compliance with an outlet concentration requirement.* Demonstrate compliance with the TOC concentration requirement of subsections (d)(1)(ii), (f)(1)(ii) and (i)(1)(ii) by meeting subsection (j) and the following:

(1) Conducting a minimum of three test runs of at least 1-hour duration.

(2) Using EPA Method 1 or EPA Method 1A, as appropriate, to select the sampling sites which must be located at the outlet of the control device. References to particulate mentioned in EPA Method 1 or EPA Method 1A do not apply to this paragraph.

(3) Using EPA Method 2, EPA Method 2A, EPA Method 2C, or EPA Method 2D, as appropriate to determine the gas volumetric flowrate.

(4) Using EPA Method 25A to determine compliance with the TOC concentration requirement using the following procedures:

(i) Measure the TOC concentration, as propane.

(ii) For a control device subject to subsection (f) or subsection (i), the results of EPA Method 25A in subparagraph (i) may be adjusted by subtracting the concentration of methane and ethane measured using EPA Method 18 taking either:

(A) An integrated sample.

(B) A minimum of four grab samples per hour using the following procedures:

(I) Taking the samples at approximately equal intervals in time, such as 15-minute intervals during the run.

(II) Taking the samples during the same time as the EPA Method 25A sample.

(III) Determining the average methane and ethane concentration per run.

(iii) The TOC concentration must be adjusted to a dry basis, using EPA Method 4.

(iv) The TOC concentration must be corrected to 3% oxygen as follows:

(A) The oxygen concentration must be determined using the emission rate correction factor for excess air, integrated sampling and analysis procedures from one of the following methods:

(I) EPA Method 3A.

(II) EPA Method 3B.

(III) ASTM D6522-00.

(IV) ANSI/ASME PTC 19.10-1981, Part 10.

(B) The samples for clause (A) must be taken during the same time that the samples are taken for determining the TOC concentration.

(C) The TOC concentration for percent oxygen must be corrected as follows:

$$C_c = C_m \left(\frac{17.9}{20.9 - \%O_{2m}} \right)$$

Where:

C_c = TOC concentration, as propane, corrected to 3% oxygen, ppmvd.

C_m = TOC concentration, as propane, ppmvd.

$\%O_{2m}$ = Concentration of oxygen, percent by volume as measured, dry.

(m) *Continuous parameter monitoring system requirements.* The owner or operator of a source subject to § 129.131(a) (relating to general provisions and applicability) and controlled by a device listed in subsections (c)—(i) that is required to install a CPMS shall:

(1) Ensure the CPMS measures the applicable parameter at least once every hour and continuously records either:

(i) The measured operating parameter value.

(ii) The block average operating parameter value for each 1-hour period calculated using the following procedures:

(A) The block average from all measured data values during each period.

(B) If values are measured more frequently than once per minute, a single value for each minute may be used instead of all measured values.

(2) Ensure the flow CPMS has either:

(i) An accuracy of $\pm 2\%$ or better at the maximum expected flow rate.

(ii) A measurement sensitivity of 5% of the flow rate or 10 standard cubic feet per minute, whichever is greater.

(3) Ensure the heat-sensing CPMS indicates the presence of the pilot flame while emissions are routed to the control device. Heat-sensing CPMS are exempt from the calibration, quality assurance and quality control requirements in this section.

(4) Ensure the temperature CPMS has a minimum accuracy of $\pm 1\%$ of the temperature being monitored in $^{\circ}\text{Celsius}$ ($\pm 1.8\%$ in $^{\circ}\text{Fahrenheit}$) or ± 2.5 $^{\circ}\text{Celsius}$ (± 4.5 $^{\circ}\text{Fahrenheit}$), whichever value is greater.

(5) Ensure the organic concentration CPMS meets the requirements of Performance Specification 8 or 9 of 40 CFR Part 60, Appendix B (relating to performance specifications).

(6) Establish the operating parameter value to define the conditions at which the control device must be operated to continuously achieve the applicable performance requirement as follows:

(i) For a parameter value established while conducting a performance test under subsection (k) or subsection (l):

(A) Base each minimum operating parameter value on the value established while conducting the performance test and supplemented, as necessary, by the design analysis of subsection (g)(6), subsection (h)(2) or subsection (i)(7), the manufacturer's recommendations, or both.

(B) Base each maximum operating parameter value on the value established while conducting the performance test and supplemented, as necessary, by the design analysis of subsection (g)(6), subsection (h)(2) or subsection (i)(7), the manufacturer's recommendations, or both.

(ii) Except as specified in clause (C), for a parameter value established using a design analysis in subsection (g)(6), subsection (h)(2) or subsection (i)(7):

(A) Base each minimum operating parameter value on the value established in the design analysis and supplemented, as necessary, by the manufacturer's recommendations.

(B) Base each maximum operating parameter value on the value established in the design analysis and supplemented, as necessary, by the manufacturer's recommendations.

(C) If the owner or operator and the Department do not agree on a demonstration of control device performance using a design analysis as specified in clause (A) or (B), then the owner or operator shall perform a performance test under subsection (k) or subsection (l) to resolve the disagreement. The Department may choose to have an authorized representative observe the performance test.

(iii) For a condenser, establish a condenser performance curve showing the relationship between condenser outlet temperature and condenser control efficiency that demonstrates the condenser complies with the applicable performance requirements in subsection (i)(1) as follows:

(A) Based on the value measured while conducting a performance test under subsection (k) or subsection (l) and supplemented, as necessary, by a condenser design analysis performed under subsection (i)(7), the manufacturer's recommendations, or both.

(B) Based on the value from a condenser design analysis performed under subsection (i)(7) supplemented, as necessary, by the manufacturer's recommendations.

(7) Except for the CPMS in paragraphs (2) and (3), calculate the daily average for each monitored parameter for each operating day using the data recorded by the CPMS. Valid data points must be available for 75% of the operating hours in an operating day to compute the daily average where the operating day is:

- (i) A 24-hour period if the control device operation is continuous.
- (ii) The total number of hours of control device operation per 24-hour period.

(8) Except as specified in subparagraph (iii), do both of the following:

(i) Ensure the data recorded by the CPMS is used to assess the operation of the control device and associated control system.

(ii) Report the failure to collect the required data in paragraph (1) as a deviation of the monitoring requirements.

(iii) The requirements of subparagraphs (i) and (ii) do not apply during:

- (A) A monitoring system malfunction.
- (B) A repair associated with a monitoring system malfunction.
- (C) A required monitoring system quality assurance or quality control activity.

(9) Determine compliance with the established parameter value by comparing the calculated daily average to the established operating parameter value as follows:

(i) For a minimum operating parameter established in paragraph (6)(i)(A) or paragraph (6)(ii)(A), the control device is in compliance if the calculated value is equal to or greater than the established value.

(ii) For a maximum operating parameter established in paragraph (6)(i)(B) or paragraph (6)(ii)(B), the control device is in compliance if the calculated value is less than or equal to the established value.

§ 129.140. Recordkeeping and reporting.

(a) *Recordkeeping.* The owner or operator of a source subject to §§ 129.131—129.139 shall maintain the applicable records onsite or at the nearest local field office for 5 years. The records shall be made available to the Department upon request.

(b) *Storage vessels.* The records for each storage vessel must include the following, as applicable:

(1) The identification and location of each storage vessel subject to § 129.133 (relating to storage vessels). The location of the storage vessel shall be in latitude and longitude coordinates in decimal degrees to an accuracy and precision of 5 decimals of a degree using the North American Datum of 1983.

(2) Each deviation when the storage vessel was not operated in compliance with the requirements specified in § 129.133.

(3) The identity of each storage vessel removed from service under § 129.133(e) and the date on which it was removed from service.

(4) The identity of each storage vessel returned to service under § 129.133(f) and the date on which it was returned to service.

(5) The identity of each storage vessel and the VOC potential to emit calculation under § 129.133(a)(2).

(6) The identity of each storage vessel and the actual VOC emission calculation under § 129.133(c)(2)(i) including the following information:

(i) The date of each monthly calculation performed under § 129.133(c)(2)(i).

(ii) The calculation determining the actual VOC emissions each month.

(iii) The calculation demonstrating that the actual VOC emissions are less than 2.7 TPY determined as a 12-month rolling sum.

(7) The records documenting the time the skid-mounted or mobile storage vessel under § 129.133(d)(1) is located on site. If a skid-mounted or mobile storage vessel is removed from a site and either returned or replaced within 30 calendar days to serve the same or similar function, count the entire period since the original storage vessel was removed towards the number of consecutive days.

(8) The identity of each storage vessel required to reduce VOC emissions under § 129.133(b)(1) and the demonstration under § 129.133(b)(1)(iv).

(c) *Natural gas-driven continuous bleed pneumatic controllers.* The records for each natural gas-driven continuous bleed pneumatic controller must include the following, as applicable:

(1) The required compliance date, identification, location and manufacturer specifications for each natural gas-driven continuous bleed pneumatic controller subject to § 129.134(c) (relating to natural gas-driven continuous bleed pneumatic controllers).

(2) Each deviation when the natural gas-driven continuous bleed pneumatic controller was not operated in compliance with the requirements specified in § 129.134(c).

(3) If the natural gas-driven continuous bleed pneumatic controller is located at a natural gas processing plant, the documentation that the natural gas bleed rate is zero.

(4) For a natural gas-driven continuous bleed pneumatic controller under § 129.134(b), the determination based on a functional requirement for why a natural gas bleed rate greater than the applicable standard is required. A functional requirement includes one or more of the following:

(i) Response time.

(ii) Safety.

(iii) Positive actuation.

(d) *Natural gas-driven diaphragm pumps*. The records for each natural gas-driven diaphragm pump must include the following, as applicable:

(1) The required compliance date, location and manufacturer specifications for each natural gas-driven diaphragm pump subject to § 129.135 (relating to natural gas-driven diaphragm pumps).

(2) Each deviation when the natural gas-driven diaphragm pump was not operated in compliance with the requirements specified in § 129.135.

(3) For a natural gas-driven diaphragm pump under § 129.135(d), the records of the days of operation each calendar year. Any period of operation during a calendar day counts toward the 90-calendar-day threshold.

(4) For a natural gas-driven diaphragm pump under § 129.135(c)(1), maintain the following records:

(i) The records under subsection (j) for the control device type.

(ii) One of the following:

(A) The results of a performance test under § 129.139(k) or (l) (relating to control devices).

(B) A design evaluation indicating the percentage of VOC emissions reduction the control device is designed to achieve.

(C) The manufacturer's specifications indicating the percentage of VOC emissions reduction the control device is designed to achieve.

(5) For a well site with no available control device or process under § 129.135(c)(2), maintain a copy of the certification submitted under subsection (k)(3)(iii)(B)(II).

(6) The engineering assessment substantiating a claim under § 129.135(c)(3), including the certification under § 129.135(c)(3)(ii)(C).

(7) For a natural gas-driven diaphragm pump required to reduce VOC emissions under § 129.135(b)(1), the demonstration under § 129.135(b)(1)(iii).

(e) *Reciprocating compressors*. The records for each reciprocating compressor must include the following, as applicable:

(1) For a reciprocating compressor under § 129.136(b)(1)(i) (relating to compressors), the following records:

- (i) The cumulative number of hours of operation.
- (ii) The date and time of each rod packing replacement.

(2) For a reciprocating compressor under § 129.136(b)(1)(ii), the following records:

- (i) The number of months since the previous replacement of the rod packing.
- (ii) The date of each rod packing replacement.

(3) For a reciprocating compressor under § 129.136(b)(2), the following records:

(i) A statement that emissions from the rod packing are being routed to a control device or a process through a closed vent system under negative pressure.

(ii) The date of installation of a rod packing emissions collection system and closed vent system as specified in § 129.136(b)(2).

(4) Each deviation when the reciprocating compressor was not operated in compliance with § 129.136(b).

(f) *Centrifugal compressors*. The records for each centrifugal compressor must include the following, as applicable:

(1) An identification of each existing centrifugal compressor using a wet seal system subject to § 129.136(c).

(2) Each deviation when the centrifugal compressor was not operated in compliance with § 129.136(c).

(3) For a centrifugal compressor required to reduce VOC emissions under § 129.136(c)(1), the demonstration under § 129.136(c)(3).

(g) *Fugitive emissions components*. The records for each fugitive emissions component must include the following, as applicable:

(1) For an oil well site subject to § 129.137(c)(1)(ii) (relating to fugitive emissions components):

(i) The location of each well and its United States Well ID Number.

(ii) The analysis documenting a GOR of less than 300 standard cubic feet of gas per barrel of oil produced, conducted using generally accepted methods. The analysis must be signed by and include a certification by the responsible official stating that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate and complete.

(2) For each well site, the average production calculations required under § 129.137(b)(1) and § 129.137(c)(4).

(3) For a well site subject to § 129.137(c)(2) or (c)(3), a natural gas gathering and boosting station or a natural gas processing plant:

(i) The fugitive emissions monitoring plan under § 129.137(g).

(ii) The records of each monitoring survey conducted under § 129.137(c)(2)(ii), (c)(3)(ii) or (e)(2). The monitoring survey must include the following information:

(A) The facility name and location.

(B) The date, start time and end time of the survey.

(C) The name of the equipment operator performing the survey.

(D) The monitoring instrument used.

(E) The ambient temperature, sky conditions and maximum wind speed at the time of the survey.

(F) Each deviation from the monitoring plan or a statement that there were none.

(G) Documentation of each fugitive emission including:

(I) The identification of each component from which fugitive emissions were detected.

(II) The instrument reading of each fugitive emissions component that meets the definition of a leak under § 129.132(a) (relating to definitions, acronyms and EPA methods).

(III) The repair methods applied in each attempt to repair the component.

(IV) The tagging or digital photographing of each component not repaired during the monitoring survey in which the fugitive emissions were discovered.

(V) The reason a component was placed on delay of repair.

(VI) The date of successful repair of the component.

(VII) If repair of the component was not completed during the monitoring survey in which the fugitive emissions were discovered, the information on the instrumentation or the method used to resurvey the component after repair.

(h) *Covers*. The records for each cover include the results of each cover inspection under § 129.138(a) (relating to covers and closed vent systems).

(i) *Closed vent systems*. The records for each closed vent system must include the following, as applicable:

(1) The results of each closed vent system inspection under § 129.138(b)(2).

(2) For the no detectable emissions inspections of § 129.138(d), a record of the monitoring survey as specified under subsection (g)(3)(ii).

(3) The engineering assessment under § 129.138(c), including the certification under § 129.138(c)(3).

(4) If the closed vent system includes a bypass device subject to § 129.138(b)(4), a record of:

(i) Each time the alarm is activated.

(ii) Each time the key is checked out, as applicable.

(iii) Each inspection required under § 129.138(b)(4)(ii)(B).

(j) *Control devices*. The records for each control device must include the following, as applicable:

(1) Make, model and serial number of the purchased device.

(2) Date of purchase.

(3) Copy of purchase order.

(4) Location of the control device in latitude and longitude coordinates in decimal degrees to an accuracy and precision of 5 decimals of a degree using the North American Datum of 1983.

(5) For the general requirements under § 129.139(b):

(i) The manufacturer's written operating instructions, procedures and maintenance schedule to ensure good air pollution control practices for minimizing emissions under § 129.139(b)(1).

(ii) The results of each monthly physical integrity check performed under § 129.139(b)(2).

(iii) The CPMS data which indicates the presence of a pilot flame during the device's operation under § 129.139(b)(3).

(iv) The results of the visible emissions test under § 129.139(b)(4) using Figure 22-1 in EPA Method 22 or a form which includes the following:

(A) The name of the company that owns or operates the control device.

(B) The location of the control device.

(C) The name and affiliation of the person performing the observation.

(D) The sky conditions at the time of observation.

(E) Type of control device.

(F) The clock start time.

(G) The observation period duration, in minutes and seconds.

(H) The accumulated emission time, in minutes and seconds.

(I) The clock end time.

(v) The results of the visible emissions test required in § 129.139(b)(6) under subparagraph (iv) following a return to operation from a maintenance or repair activity performed under § 129.139(b)(5).

(vi) The maintenance and repair log under § 129.139(b)(7).

(6) For a manufacturer-tested combustion control device under § 129.139(c), maintain the following records:

(i) The records specified in paragraph (5)(i)—(vi).

(ii) The manufacturer's specified inlet gas flow rate.

(iii) The CPMS results under § 129.139(c)(1)(i).

(iv) The results of each performance test conducted under § 129.139(c)(1)(ii) as performed under § 129.139(k).

(7) For an enclosed combustion device in § 129.139(d):

(i) The records specified in paragraph (5)(i)—(vi).

(ii) The results of each performance test conducted under § 129.139(d)(1)(i) as performed under § 129.139(k).

(iii) The results of each performance test conducted under § 129.139(d)(1)(ii) as performed under § 129.139(l).

(iv) The data and calculations for the CPMS installed, operated or maintained under § 129.139(d)(2).

(8) For a flare in § 129.139(e), the records specified in paragraph (5)(iii)—(vi).

(9) For a regenerative carbon adsorption device in § 129.139(g):

(i) The records specified in paragraph (5)(i) and (ii).

(ii) The results of the performance test conducted under § 129.139(f)(1)(i) as performed under § 129.139(k).

(iii) The results of the performance test conducted under § 129.139(f)(1)(ii) as performed under § 129.139(l).

(iv) The control device design analysis, if one is performed under § 129.139(g)(6).

(v) The data and calculations for a CPMS installed, operated or maintained under § 129.139(g)(1)—(5).

(vi) The schedule for carbon replacement, as determined by § 129.139(f)(2) or the design analysis requirements of § 129.139(g)(6) and records of each carbon replacement under § 129.139(f)(3) and (4).

(10) For a non-regenerative carbon adsorption device in § 129.139(h):

(i) The records specified in paragraph (5)(i) and (ii).

(ii) The results of the performance test conducted under § 129.139(f)(1)(i) as performed under § 129.139(k).

(iii) The results of the performance test conducted under § 129.139(f)(1)(ii) as performed under § 129.139(l).

(iv) The control device design analysis, if one is performed under § 129.139(h)(2).

(v) The schedule for carbon replacement, as determined by § 129.139(f)(2) or the design analysis requirements of § 129.139(h)(2) and records of each carbon replacement under § 129.139(f)(3) and (4).

(11) For a condenser or other non-destructive control device in § 129.139(i):

(i) The records specified in paragraph (5)(i) and (ii).

(ii) The results of the performance test conducted under § 129.139(i)(1)(i) as performed under § 129.139(k).

(iii) The results of the performance test conducted under § 129.139(i)(1)(ii) as performed under § 129.139(l).

(iv) The control device design analysis, if one is performed under § 129.139(i)(7).

(v) The site-specific monitoring plan under § 129.139(i)(2).

(vi) The data and calculations for a CPMS installed, operated or maintained under § 129.139(i)(3)—(5).

(k) *Reporting.* The owner or operator of a source subject to § 129.131(a) (relating to general provisions and applicability) shall do the following:

(1) Submit an initial annual report to the Air Program Manager of the appropriate Department Regional Office by _____ (*Editor's Note:* The blank refers to the date 1 year after the effective date of this rulemaking.) and annually thereafter on or before June 1.

(i) The responsible official must sign, date and certify compliance and include the certification in the initial report and each subsequent annual report.

(ii) The due date of the initial report may be extended with the written approval of the Air Program Manager of the appropriate Department Regional Office.

(2) Submit the reports under paragraph (3) in a manner prescribed by the Department.

(3) Submit the information specified in subparagraphs (i)—(ix) for each report as applicable:

(i) *Storage vessels.* The report for each storage vessel must include the information specified in subsection (b)(1)—(4) for the reporting period, as applicable.

(ii) *Natural gas-driven continuous bleed pneumatic controllers.* The initial report for each natural gas-driven continuous bleed pneumatic controller must include the information specified in subsection (c), as applicable. Subsequent reports must include the following:

(A) The information specified in subsection (c)(1) and (2) for each natural gas-driven continuous bleed pneumatic controller.

(B) The information specified in subsection (c)(3) and (4) for each natural gas-driven continuous bleed pneumatic controller installed during the reporting period.

(iii) *Natural gas-driven diaphragm pumps.* The report for each natural gas-driven diaphragm pump must include the following:

(A) The information specified in subsection (d)(1) and (2) for the reporting period, as applicable.

(B) A certification of the compliance status of each natural gas-driven diaphragm pump during the reporting period using one of the following:

(I) A certification that the emissions from the natural gas-driven diaphragm pump are routed to a control device or process under § 129.135(b)(1)(ii) or (c)(1). If the control device is installed during the reporting period under § 129.135(c)(2)(iii), include the information specified in subsection (d)(4).

(II) A certification under § 129.135(c)(2) that there is no control device or process available at the facility during the reporting period. This includes if a control device or process is removed from the facility during the reporting period.

(III) A certification according to § 129.135(c)(3)(ii)(C) that it is technically infeasible to capture and route emissions from:

(-a-) A natural gas-driven diaphragm pump installed during the reporting period to an existing control device or process.

(-b-) An existing natural gas-driven diaphragm pump to a control device or process installed during the reporting period.

(-c-) An existing natural gas-driven diaphragm pump to another control device or process located at the facility due to the removal of the original control device or process during the reporting period.

(iv) *Reciprocating compressors.* The report for each reciprocating compressor must include the information specified in subsection (e) for the reporting period, as applicable.

(v) *Centrifugal compressors.* The report for each centrifugal compressor must include the information specified in subsection (f) for the reporting period, as applicable.

(vi) *Fugitive emissions components*. The report for each fugitive emissions component must include the records of each monitoring survey conducted during the reporting period as specified in subsection (g)(3)(ii).

(vii) *Covers*. The report for each cover must include the information specified in subsection (h) for the reporting period, as applicable.

(viii) *Closed vent systems*. The report for each closed vent system must include the information specified in subsection (i)(1) and (2) for the reporting period, as applicable. The information specified in subsection (i)(3) is only required for the initial report or if the closed vent system was installed during the reporting period.

(ix) *Control devices*. The report for each control device must include the information specified in subsection (j), as applicable.