PROPOSED RULEMAKING
ENVIRONMENTAL QUALITY BOARD
[25 PA. CODE CHS. 121 and 129]

Control of VOC Emissions from Oil and Natural Gas Sources

The Environmental Quality Board (Board) proposes to amend Chapters 121 (relating to general provisions) and 129 (relating to standards for sources) to read as set forth in Annex A. This proposed rulemaking would add §§ 129.121—129.130 to adopt reasonably available control technology (RACT) requirements and RACT emission limitations for oil and natural gas sources of volatile organic compound (VOC) emissions which were in existence on or before the effective date of this rulemaking, when published as a final-form rulemaking. These sources include: storage vessels; natural gas-driven pneumatic controllers; natural gas-driven diaphragm pumps; reciprocating and centrifugal compressors; and fugitive emissions components. This proposed rulemaking would also add definitions, acronyms, and the United States Environmental Protection Agency (EPA) methods to § 129.122 to support the interpretation of the measures.

This proposed rulemaking will be submitted to the EPA for approval as a revision to the Commonwealth's State Implementation Plan (SIP) following promulgation of the final-form rulemaking.

This proposed rulemaking was adopted by the Board at its meeting on DATE.

A. ***Effective Date***

This proposed rulemaking will be effective upon final-form publication in the *Pennsylvania Bulletin*.

B. ***Contact Persons***

For further information, contact Virendra Trivedi, Chief, Division of Permits, Bureau of Air Quality, Rachel Carson State Office Building, P.O. Box 8468, Harrisburg, PA 17105-8468, (717) 783-9476; or Jennie Demjanick, Assistant Counsel, Bureau of Regulatory Counsel, Rachel Carson State Office Building, P.O. Box 8464, Harrisburg, PA 17105-8464, (717) 787-7060. Information regarding submitting comments on this proposed rulemaking appears in Section J of this preamble. Persons with a disability may use the Pennsylvania AT&T Relay Service, (800) 654-5984 (TDD users) or (800) 654-5988 (voice users). This proposed rulemaking is available on the Department of Environmental Protection's (Department) web site at www.dep.pa.gov (select "Public Participation," then "Environmental Quality Board (EQB)").

C. ***Statutory Authority***

The proposed rulemaking is authorized under section 5(a)(1) of the Air Pollution Control Act (APCA) (35 P.S. § 4005(a)(1)), which grants the Board the authority to adopt rules and regulations for the prevention, control, reduction and abatement of air pollution in this

Commonwealth. Section 5(a)(8) of the APCA (35 P.S. § 4005(a)(8)) also grants the Board the authority to adopt rules and regulations designed to implement the provisions of the Clean Air Act (CAA) (42 U.S.C.A. §§ 7401—7671q).

D. *Background and Purpose*

The purpose of this proposed rulemaking is to implement control measures to reduce VOC emissions from existing oil and natural gas sources in this Commonwealth. There are five source categories that will be affected by this proposal – storage vessels; natural gas-driven pneumatic controllers; natural gas-driven diaphragm pumps; reciprocating and centrifugal compressors; and fugitive emissions components.

In accordance with sections 172(c)(1), 182(b)(2)(A) and 184(b)(1)(B) of the CAA (42 U.S.C.A. §§ 7502(c)(1), 7511a(b)(2)(A) and 7511c(b)(1)(B)), this proposed rulemaking establishes the VOC emission limitations and other requirements of the EPA's recommendations in the Control Techniques Guidelines for the Oil and Natural Gas Industry, EPA 453/B-16-001, Office of Air Quality Planning and Standards, EPA, October 2016 (2016 O&G CTG) as RACT for these sources in this Commonwealth. See 81 FR 74798 (October 27, 2016). The EPA defines RACT as "the lowest emission limitation that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility." See 44 FR 53761 (September 17, 1979).

Under section 108 of the CAA (42 U.S.C.A. § 7408), the EPA is responsible for establishing National Ambient Air Quality Standards (NAAQS) for six criteria pollutants considered harmful to public health and the environment: ground-level ozone; particulate matter; nitrogen oxides (NO_x); carbon monoxide; sulfur dioxide; and lead. Section 109 of the CAA (42 U.S.C.A. § 7409) established two types of NAAQS: primary standards, which are limits set to protect public health; and secondary standards, which are limits set to protect public welfare and the environment. In section 302(h) of the CAA (42 U.S.C.A. § 7602(h)), effects on welfare are defined to include protection against visibility impairment and from damage to animals, crops, vegetation and buildings.

VOCs are precursors to the formation of ground-level ozone, a public health and welfare hazard. Ground-level ozone is not emitted directly to the atmosphere from oil and natural gas sources but is formed by a photochemical reaction between emissions of VOC and NO_x in the presence of sunlight. Ground-level ozone is a highly reactive gas, which at sufficiently high concentrations can produce a wide variety of effects harmful to public health and welfare. Additionally, climate change may exacerbate the need to address ground-level ozone. According to the EPA, atmospheric warming, as a result of climate change, may increase ground-level ozone in regions across the United States. This impact could also be an issue for states trying to comply with future ozone standards.

Ozone is an irritant and repeated exposure to ozone pollution for both healthy people and those with existing conditions may cause a variety of adverse health effects, including difficulty in breathing, chest pains, coughing, nausea, throat irritation, and congestion. In addition, people with bronchitis, heart disease, emphysema, asthma and reduced lung capacity may have their

symptoms exacerbated by ozone pollution. Asthma, in particular, is a significant and growing threat to children and adults in this Commonwealth. Ozone can also cause both physical and economic damage to important food crops, forests and wildlife, as well as materials such as rubber and plastics. The implementation of additional measures to address ozone air quality in this Commonwealth is necessary to protect the public health and welfare and the environment. Because VOCs are precursors for ground-level ozone formation, implementing the RACT recommendations of the 2016 O&G CTG will help the Commonwealth achieve and maintain the 1997, 2008, and 2015 ozone NAAQS.

In July 1997, the EPA promulgated primary and secondary ozone standards at a level of 0.08 parts per million (ppm) averaged over 8 hours. See 62 FR 38856 (July 18, 1997). In 2004, the EPA designated 37 counties in this Commonwealth as 8-hour ozone nonattainment areas for the 1997 8-hour ozone NAAQS. See 69 FR 23858, 23931 (April 30, 2004). Based on the certified ambient air monitoring data for the 2015 ozone season as well as the preliminary 2016 ozone season data, all monitored areas of this Commonwealth are attaining the 1997 8-hour ozone NAAQS. The Department submitted maintenance plans to the EPA, which were approved for the 1997 ozone standard. See 82 FR 31464 (July 7, 2017) and 84 FR 20274 (May 9, 2019).

In accordance with section 175A(a) of the CAA (42 U.S.C.A. § 7505a(a)), the maintenance plans include permanent and enforceable control measures that will provide for the maintenance of the ozone NAAQS for at least 10 years following the EPA's redesignation of the areas to attainment. Under section 175A(b) of the CAA (42 U.S.C.A. § 7505a(b)), eight years after the EPA redesignates an area to attainment, additional maintenance plans approved by the EPA must also provide for the maintenance of the ozone standard for another 10 years following the expiration of the initial 10-year period.

In March 2008, the EPA lowered the primary and secondary ozone NAAQS to 0.075 ppm (75 parts per billion (ppb)) averaged over 8 hours to provide greater protection for children, other at-risk populations and the environment against the array of ozone-induced adverse health and welfare effects. See 73 FR 16436 (March 27, 2008). In April 2012, the EPA designated five areas in this Commonwealth as nonattainment for the 2008 ozone NAAQS. See 77 FR 30088, 30143 (May 21, 2012). These areas include all or a portion of Allegheny, Armstrong, Beaver, Berks, Bucks, Butler, Carbon, Chester, Delaware, Fayette, Lancaster, Lehigh, Montgomery, Northampton, Philadelphia, Washington and Westmoreland Counties. With regard to the 2008 ozone NAAQS, the certified 2015 ambient air ozone season monitoring data indicate that all areas of this Commonwealth are monitoring attainment of the 2008 ozone NAAQS.

The Department's analysis of the preliminary 2016 ambient air ozone season monitoring data shows that ozone samplers in this Commonwealth, except the Bristol sampler in Philadelphia County, are monitoring attainment of the 2008 ozone NAAQS. As with the 1997 ozone NAAQS, the Department must ensure that the 2008 ozone NAAQS is attained and maintained by implementing permanent and enforceable control measures. At the Department's request, the EPA granted 1-year attainment date extensions for the 2008 ozone NAAQS in the Philadelphia and Pittsburgh-Beaver Valley Areas due to violating monitors in New Jersey and Maryland. Adoption of the VOC emission control measures in this proposed rulemaking would allow the

Commonwealth to continue its progress in attaining and maintaining the 2008 8-hour ozone NAAQS.

On October 26, 2015, the EPA again lowered the primary and secondary ozone NAAQS, this time to 0.070 ppm (70 ppb) averaged over 8 hours. See 80 FR 65291 (October 26, 2015). As required under section 107(d) of the CAA (42 U.S.C.A. § 7407(d)), the Commonwealth submitted designation recommendations based on the ambient ozone concentrations from the 2013-2015 ozone seasons for the 2015 ozone NAAQS to the EPA on October 3, 2016 and a revised designation recommendation on April 11, 2017. The EPA finalized designations for the 2015 ozone NAAQS in two separate actions. See 82 FR 54232 (November 16, 2017) and 83 FR 25776 (June 4, 2018). On June 4, 2018, the EPA designated Bucks, Chester, Delaware, Montgomery and Philadelphia counties as marginal nonattainment, with the rest of this Commonwealth designated attainment/unclassifiable. See 83 FR 25776.

The Department must ensure that the 2015 8-hour ozone NAAQS is attained and maintained by implementing permanent and federally enforceable control measures. Reductions in VOC emissions that are achieved following the adoption and implementation of RACT emission control measures for source categories covered by this proposed rulemaking will assist the Commonwealth in making substantial progress in achieving and maintaining the ozone NAAQS. To the extent that any of the requirements in this proposed rulemaking are more stringent than any provisions of the 2016 O&G CTG, the Board has determined that the proposed requirements are reasonably necessary to attain and maintain the health-based and welfare based 8-hour ozone NAAQS in this Commonwealth and to satisfy related CAA requirements.

Section 110(a) of the CAA (42 U.S.C.A. § 7410(a)) provides that each state shall adopt and submit to the EPA a plan to implement measures (a SIP) to enforce the NAAQS or a revision to the NAAQS promulgated under section 109(b) of the CAA. A SIP includes the regulatory programs, actions, and commitments a state will carry out to implement its responsibilities under the CAA. Once approved by the EPA, a SIP is legally enforceable under both federal and state law. Section 172(c)(1) of the CAA provides that SIPs for nonattainment areas must include "reasonably available control measures," including RACT, for sources of emissions of VOC and NO_x.

Section 182(b)(2) of the CAA provides that for moderate ozone nonattainment areas, states must revise their SIPs to include RACT for sources of VOC emissions covered by control techniques guidelines (CTG) documents issued by the EPA prior to the area's date of attainment of the applicable ozone NAAQS. More importantly, section 184(b)(1)(B) of the CAA requires states in the Ozone Transport Region (OTR), including this Commonwealth, submit a SIP revision requiring implementation of RACT for all sources of VOC emissions in the state covered by a specific CTG and not just for those sources located in designated nonattainment areas of the state.

Consequently, the Commonwealth's SIP must include regulations applicable statewide to control VOC emissions from oil and natural gas sources that are not regulated elsewhere in Chapter 129. This proposed rulemaking should achieve VOC emission reductions and lowered concentrations of ground-level ozone locally as well as in downwind states. Adoption of VOC emission

reduction requirements is part of the Commonwealth's strategy, in concert with other OTR jurisdictions, to further reduce the transport of VOC ozone precursors and ground-level ozone throughout the OTR to attain and maintain the 8-hour ozone NAAQS. This proposed rulemaking will be submitted to the EPA for approval as a revision to the Commonwealth's SIP following promulgation of the final-form rulemaking.

The EPA issues guidance, in the form of a CTG, in place of regulations where the guidelines will be "substantially as effective as regulations" in reducing VOC emissions from an existing product or source category in ozone nonattainment areas. States with ozone nonattainment areas are required to revise their SIP to implement RACT for existing sources of VOCs under section 172(c)(1) of the CAA. States, such as this Commonwealth, that are part of an OTR, designated under section 184(b) of the CAA are required to revise their SIP to implement RACT with respect to all sources of VOCs covered by a CTG in the state, regardless of their attainment status.

On October 27, 2016, the EPA issued the 2016 O&G CTG for emissions of VOCs from existing sources. See 81 FR 74798. The 2016 O&G CTG provides states with the EPA's recommendation of what constitutes RACT for the covered category. States can use the federal recommendations provided in the 2016 O&G CTG to inform their own determination as to what constitutes RACT for VOC emissions from the covered category. State air pollution control agencies may implement other technically-sound approaches that are consistent with the CAA requirements and the EPA's implementing regulations or guidelines.

Following promulgation of the "Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources," published on June 3, 2016 (2016 NSPS), the EPA received petitions for reconsideration of several provisions of the 2016 NSPS. See 81 FR 35823 (June 3, 2016). On June 5, 2017, the EPA granted the reconsideration regarding fugitive emissions requirements, well site pneumatic pump standards and professional engineer certification requirements for closed vent systems. See 82 FR 25730 (June 5, 2017).

On March 9, 2018, the EPA requested comment and additional information from states on a potential withdrawal of the 2016 O&G CTG. See 83 FR 10478 (March 9, 2018). In the notice, the EPA stated that the 2016 O&G CTG relied upon underlying data and conclusions made in the 2016 NSPS. In light of the fact that EPA is reconsidering the 2016 NSPS and because the 2016 NSPS and CTG share certain key pieces of data and information, EPA proposed to withdraw the CTG in its entirety. The Department submitted comments against the proposed comprehensive withdrawal of the 2016 O&G CTG, on April 23, 2018. To date, EPA has not acted on its proposed withdrawal.

On October 15, 2018, the EPA proposed reconsideration amendments to the 2016 NSPS. See 83 FR 52056 (October 15, 2018). The proposed amendments include: changing the frequency of monitoring for fugitive emissions to annually at well sites, biennially at low-production well sites, and either annually or semi-annually at compressor stations; recognizing existing fugitive emissions monitoring and repair plans from certain states, including this Commonwealth, as an approved alternative means of emissions limitation (AMEL) to comply with the federal requirements; removing the differentiation of "greenfield" and "non-greenfield" sites and the

ability to rule out routing pump emissions due to technical infeasibility. The proposed amendments additionally include relaxing the requirement for a professionally licensed engineer to certify the determination of technical infeasibility to route pump emissions to a control and the design and capacity of a closed vent system by allowing in-house engineers with appropriate expertise to also make the required certification.

On December 17, 2018, the Department submitted a comment letter on the EPA's proposed reconsideration amendments to the 2016 NSPS that recommended not reducing the leak detection and repair (LDAR) inspection frequency for well sites and compressor stations; not allowing a step-down provision for LDAR at well sites as it is not appropriate to reduce semi-annual inspection frequencies; requiring that LDAR frequency be based upon the economic feasibility and not the production of a well; recognizing the Department's Exemption 38(c) of the Air Quality Permit Exemptions as AMEL; and not requiring owners and operators to notify the Administrator of their use of an AMEL as it will be self-evident in their annual report. In the EPA's 1995 Protocol for Equipment Leak Emission Estimates, the emission factors do not factor in production or line pressure and the EPA stated it is unable to account for lower operational pressures or pressure changes in the model plants used to determine the cost effectiveness for LDAR in the NSPS. The Department also referenced its LDAR program, in effect since February 2, 2013, which requires monthly AVO and quarterly LDAR at these facilities. Since the Department's LDAR requirements are recognized by the EPA as AMEL for the 2016 NSPS, and this proposed rulemaking implements RACT requirements which are more stringent than the recommendations in the 2016 O&G CTG, any changes finalized by EPA's reconsideration of the 2016 NSPS will not affect this proposed rulemaking. See 83 FR at 52081.

The Department concurred with the EPA's proposal in the 2016 NSPS reconsideration to remove the differentiation of "greenfield" and "non-greenfield" sites when determining whether it is technically feasible to route pump emissions to a control. A "greenfield" site is defined as a site, other than a natural gas processing plant, which is entirely new construction. This change would have no bearing on existing sources, as by definition they would all be "non-greenfield" sites under the 2016 NSPS. The EPA did not distinguish between "greenfield" and "non-greenfield" sites in the 2016 O&G CTG.

The Department also concurred with the EPA's proposal to allow in-house engineers to certify the determination of technical infeasibility to route pump emissions to a control and the design and capacity of a closed vent system, regardless of professional licensure. An in-house engineer is held to the same level of accountability as a professional engineer when complying with the certification requirements. Therefore, the Department incorporates the ability to use in-house engineers for the certification requirements in this proposed rulemaking. If this change is not adopted in the EPA's final 2016 NSPS rule and subsequently incorporated into the 2016 O&G CTG, this could be interpreted as a relaxation of the recommendation; however, the EPA could either accept the language in this proposed rulemaking or request that the Department modify the language in the final-form rulemaking.

The EPA states in the proposed withdrawal that "if finalized, the withdrawal would remove the mandatory RACT review requirement for affected sources in ozone nonattainment areas classified as Moderate or higher and states in the OTR." See 83 FR at 10479. However, the

EPA noted that "unless and until EPA decides to withdraw the CTG, states remain obligated to revise their SIPs to address RACT requirements for oil and gas sources in ozone nonattainment areas classified as Moderate or higher and the states in the OTR." Id. The EPA goes on to state that "withdrawal of the CTG would not hinder states from establishing, where desired or otherwise required, emissions standards for sources in the oil and natural gas industry, including standards based on the recommendations contained in the withdrawn CTG." Id.

If the 2016 O&G CTG is not withdrawn, states subject to RACT requirements must revise their SIPs for the 2008 and later ozone standards to include their RACT determinations for the oil and natural gas sources covered by the 2016 O&G CTG, no later than January 21, 2021. As previously stated, the states are responsible for attaining and maintaining the NAAQS.

The Department reviewed the RACT recommendations included in the 2016 O&G CTG for their applicability to the ground-level ozone reduction measures necessary for this Commonwealth and determined that the VOC emission reduction measures and other requirements are appropriate for this source category; however, the Department determined in two cases that more stringent RACT requirements are necessary. In the first, the Department determined that a lower VOC applicability threshold is necessary for storage vessels at unconventional well sites installed on or after August 10, 2013 to prevent backsliding and that the lower applicability threshold also represents RACT for storage vessels at gathering and boosting stations, processing plants, and transmission stations. In the second, the Department determined that owners or operators must conduct monthly audio, visual, olfactory (AVO) inspections and quarterly LDAR inspections of fugitive emissions components at their facilities. The Board has determined that these more stringent requirements are reasonably necessary to achieve or maintain the NAAQS.

This proposed rulemaking is designed to adopt VOC emission limitations and other requirements as RACT to meet the requirements of sections 172(c)(1), 182(b)(2) and 184(b)(1)(B) of the CAA. These VOC emission limitations and other requirements would apply across this Commonwealth as required under section 184(b)(1)(B) of the CAA. The proposed control measures would reduce VOC emissions from oil and natural gas sources throughout this Commonwealth at those affected sources that are not regulated elsewhere under Chapter 129.

Even though a finalized withdrawal of the 2016 O&G CTG would relieve this Commonwealth of the requirement to address RACT for existing oil and gas sources, the Department is still obligated to reduce ozone and VOC emissions as a precursor under section 110 of the CAA. The Board has the authority under section 5(a)(1) of the APCA to adopt rules and regulations for the prevention, control, reduction and abatement of air pollution in this Commonwealth. Addressing existing sources of VOC emissions is necessary to attain and maintain the NAAQS and protect the public health and welfare from harmful air pollution.

The Board is moving forward with this proposed rulemaking for a number of reasons. First, the Department reviewed EPA's reconsideration of the 2016 NSPS and, based on that proposed rule, made changes to this proposed rulemaking as discussed above.

Second, adoption of the VOC emission control measures and other requirements in this proposed rulemaking would allow the Commonwealth to make substantial progress in achieving and

maintaining the 1997, 2008, and 2015 8-hour ozone NAAQS statewide. Implementation of and compliance with the proposed VOC emission reduction measures would also assist the Commonwealth in reducing the levels of ozone precursor emissions that contribute to potential nonattainment of the 2015 ozone NAAQS. As a result, the VOC emission control measures are reasonably necessary to attain and maintain the health-based and welfare-based 8-hour ozone NAAQS in this Commonwealth and to satisfy related CAA requirements. It would also provide VOC RACT as required for natural gas processing plants which have RACT requirements under the 1983 CTG for Control of Volatile Organic Compound Equipment Leaks from Natural Gas/Gasoline Processing Plants, EPA 450/3-83-007, Office of Air Quality Planning and Standards, EPA, December 1983. The Department would be able to certify this proposed rulemaking as RACT, instead of certifying NSPS requirements meeting RACT for natural gas processing facilities.

Third, the Department estimates that implementation of the proposed control measures could reduce VOC emissions by as much as 983 tons per year (TPY) from fugitive emissions components through the performance of quarterly LDAR inspections, by as much as 121 TPY from the installation of controls for storage vessels with actual emissions based on the Department's more stringent applicability thresholds, 109 TPY from pneumatic pumps and 3,191 TPY from pneumatic controllers. Approximately 294 TPY of these emission reductions are due to the additional stringency the Department proposes when compared to the 2016 O&G CTG. These reductions would benefit the health and welfare of the approximately 12.8 million residents and the numerous animals, crops, vegetation and natural areas of this Commonwealth by reducing the amount of ground-level ozone air pollution resulting from these sources.

Finally, this proposed rulemaking will provide consistency among all oil and natural gas sources in this Commonwealth for monitoring fugitive emissions components by including monthly AVO inspection requirements and quarterly LDAR inspection requirements. These requirements are consistent with the LDAR requirements specified in the Department's General Plan Approval and/or General Operating Permit for Natural Gas Compression Stations, Processing Plants, and Transmission Stations (GP-5), the General Plan Approval and/or General Operating Permit for Unconventional Natural Gas Well Site Operations and Remote Pigging Stations (GP-5A), and Air Quality Permit Exemptions, Category 38 (Exemption 38). Since the Commonwealth's LDAR program is recognized as AMEL for the 2016 NSPS and the requirements of the 2016 NSPS and the 2016 O&G CTG are identical, the Commonwealth's LDAR program should be acceptable as AMEL for purposes of implementing the RACT requirements of the 2016 O&G CTG. This would have the benefit of providing owners and operators of both new and existing facilities with the ability to merge both types of sources into one LDAR program.

This proposed rulemaking is also consistent with Governor Wolf's strategy to reduce emissions of methane from the oil and natural gas industry in this Commonwealth. In the strategy, announced on January 19, 2016, the Department committed to developing a regulation for existing sources to reduce leaks at existing oil and natural gas facilities based on the RACT recommendations in the 2016 O&G CTG. The strategy also states that the Commonwealth will reduce emissions by requiring LDAR and more frequent use of leak-sensing technologies. This proposed rulemaking fulfills that part of the strategy.

While this proposed rulemaking requires VOC emission reductions, methane emissions are also reduced as a co-benefit, because both VOC and methane are emitted from oil and gas operations. Except for storage vessels, the requirements for control of emissions are not dependent on an applicability threshold for VOC, meaning that most requirements have no minimum level of VOC emissions under which sources are granted an exemption. For example, continuous bleed natural gas-driven pneumatic controllers are required to limit their bleed rate to 6 standard cubic feet (scf) per hour of natural gas, regardless of the VOC concentration, which also serves to limit methane emissions. Reciprocating compressors at gathering and boosting stations and natural gas processing plants are required to replace the rod end packing or route the rod end packing emissions to a closed vent system regardless of the actual VOC emissions, which serves to reduce both VOC and methane emissions by limiting natural gas leakage. Both wet seal centrifugal compressor degassing systems and natural gas-driven diaphragm pumps are required to control their VOC emissions by 95% regardless of the actual VOC emissions, which also effectively controls methane emissions. Also, for fugitive emissions components, the AVO inspection program and LDAR program detect natural gas leakage, which, with the repair requirement, serves to reduce both emissions of VOC and methane.

The above control measures implemented for VOC emissions simultaneously control methane emissions and provide VOC emission reductions of approximately 4,404 TPY and methane emission reductions of approximately 75,603 TPY. The additional stringency in this proposed rulemaking results in a greater reduction of VOC and methane emissions than the 2016 O&G CTG, amounting to 294 TPY of VOCs and 2,627 TPY of methane. These reductions are significant, and the Board does not want to trade this environmental benefit for the uncertain withdrawal of the 2016 O&G CTG, which has already been judged technically sound.

This proposed rulemaking strives to ensure regulatory certainty for the oil and gas industry in this Commonwealth. The Department is aware of approximately 89,320 unconventional and conventional oil and natural gas wells, of which the Department estimates that 8,403 unconventional and 71,229 conventional wells are currently in production. These facilities also include approximately 435 midstream compressor stations, 120 transmission compressor stations and 10 natural gas processing facilities in this Commonwealth whose owners and operators may be subject to the proposed VOC emission reduction measures, work practice standards, and reporting and recordkeeping requirements. It is possible that owners and operators of additional facilities that have not been identified could be subject to this proposed rulemaking.

The Department estimates that the cost of complying with this proposed rulemaking would be about $35.3 million per year. However, implementation of the proposed control measures would also potentially save the oil and natural gas industry about $9.9 million per year due to a lower natural gas loss rate during production. This estimate consists of two major categories of data. The first is the cost per year for each piece of equipment or site affected. This number was provided by the EPA in the 2016 O&G CTG. The second is the number of potentially affected facilities, which was obtained from several data sources including the Department's database for oil and gas well production, the Department's air emissions inventory, the Environmental Facility Application Compliance Tracking System and Air Information Management System databases, the United States Energy Information Agency's list of natural gas processing plants, and the EPA emissions inventory.

Of the 71,229 conventional wells reporting production, only 303 are above the 15 barrel of oil equivalent per day production threshold as reported in the Department's 2017 oil and gas production database and will have fugitive emissions component requirements. For sources located at a natural gas well site, the anticipated cost to comply with the requirements would be based on the sources present at the site, the applicability of those sources and the type of control used to comply. In the 2016 O&G CTG, the EPA estimates the costs for control of the various sources as follows:

- Implementation of a quarterly LDAR program using optical gas imaging (OGI) costs $4,220 per year resulting in a cost per ton of VOC reduced of $3,453.
- Routing emissions from a natural gas-driven diaphragm pump to a process costs $774 per year resulting in a cost per ton of VOC reduced of $847.
- Replacing a continuous high-bleed natural gas-driven pneumatic controller costs $296 per year resulting in a cost per ton of VOC reduced of $209.
- Routing emissions from a storage vessel to a control device costs $25,194 per year with a cost per ton of VOC reduced of $4,420.

Most of the anticipated costs are due to new regulatory requirements but many of the costs associated with this proposed rulemaking are from common sense practices and controls that operators are already implementing. Some examples include periodic inspections which can prevent releases which in turn prevents environmental damage and significant financial losses for the operator. The Department anticipates there will be areas of cost savings that will occur as a result of this proposed rulemaking as well. In addition, the Department estimates most small business stationary sources will be below the applicability thresholds. However, affected small businesses may incur minimal cost as a result of this proposed rulemaking. Overall, the Department does not anticipate that this proposed rulemaking will result in any significant adverse impact on small oil and gas operators.

The Department consulted with the Air Quality Technical Advisory Committee (AQTAC) and the Small Business Compliance Advisory Committee (SBCAC) in the development of this proposed rulemaking. On December 14, 2017, the Department presented concepts to AQTAC on a potential rulemaking incorporating the 2016 O&G CTG recommendations. The Department returned to AQTAC on December 13, 2018 for an informational presentation on a preliminary draft Annex A. This proposed rulemaking was presented for a vote to AQTAC on April 11, 2019 and SBCAC on April 17, 2019. Both committees concurred with the Department's recommendation to move this proposed rulemaking forward to the Board for consideration.

The Department also conferred with the Citizens Advisory Council's (CAC) Policy and Regulatory Oversight Committee concerning this proposed rulemaking on May 7, 2019. On June 18, 2019, the full CAC concurred with the Department's recommendation to move this proposed rulemaking forward to the Board for consideration.

E. ***Summary of Regulatory Requirements***

§ 121.1. Definitions

This section contains definitions relating to the air quality regulations. This proposed rulemaking would amend the terms "CPMS—continuous parameter monitoring system", "fugitive emissions" and "responsible official", and add the abbreviation "ppm" to support the proposed amendments to Chapter 129.

§ 129.121. General provisions and applicability

Subsection (a) provides that this proposed rulemaking would apply statewide to the owner or operator of the following, which were in existence on or before the effective date of the final-form rulemaking – a storage vessel in all segments except natural gas distribution; natural gas-driven pneumatic controller; natural gas-driven diaphragm pump; reciprocating compressor; centrifugal compressor; or fugitive emissions component.

Subsection (b) provides that compliance with the requirements of this proposed rulemaking would assure compliance with the requirements of an operating 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) except to the extent the operating permit contains more stringent requirements.

§ 129.122. Definitions, acronyms and EPA methods

Section 129.122 adds definitions, acronyms, and EPA methods applicable to this proposed rulemaking.

§ 129.123. Storage vessels

Subsection (a) establishes the applicability threshold for the owner or operator of a storage vessel based on potential VOC emissions. For a storage vessel at a conventional well site or at an unconventional well site installed prior to August 10, 2013, the potential to emit (PTE) threshold of 6.0 TPY VOC is as recommended in Section A.1(a) of the 2016 O&G CTG. For a storage vessel at an unconventional well site installed on or after August 10, 2013 or at a natural gas gathering and boosting station, a natural gas processing plant, or in the natural gas transmission and storage segment, the PTE threshold is 2.7 TPY VOC. The more stringent 2.7 TPY threshold is based on the threshold used under Exemption 38(b) of the Air Quality Permit Exemptions List, which has been in effect since August 10, 2013. Subsection (a) also establishes the methodology required for calculating the potential VOC emissions of a storage vessel.

Subsection (b) establishes the compliance requirements for the owner or operator of a storage vessel to reduce VOC emissions by 95% by either routing emissions to a control device or installing a floating roof that meets the requirements of 40 CFR Part 60, Subpart Kb (relating to standards of performance for volatile organic liquid storage vessels (including petroleum liquid storage vessels)). If the owner or operator decides to route emissions to a control device, then the cover and closed vent systems must meet the requirements in § 129.128.

Subsection (c) provides for exceptions to the emissions limitations and control requirements in subsection (b) based on a storage vessel's actual VOC emissions and lists compliance demonstration requirements for owners or operators claiming an exception.

Subsection (d) lists three categorical exemptions from the emissions limitations and control requirements of subsection (b).

Subsection (e) lists the requirements for removing a storage vessel from service.

Subsection (f) lists the requirements for a storage vessel returned to service.

Subsection (g) references the recordkeeping and reporting requirements under § 129.130(b) and § 129.130(k)(1) for owners or operators of storage vessels subject to § 129.123.

§ 129.124. Natural gas-driven pneumatic controllers

Subsection (a) establishes the applicability for the owner or operator of a natural gas-driven pneumatic controller based on the controller's location.

Subsection (b) provides for certain exceptions related to this subsection.

Subsection (c) establishes VOC emissions limitation requirements.

Subsection (d) sets forth compliance demonstration requirements.

Subsection (e) identifies the recordkeeping and reporting requirements.

§ 129.125. Natural gas-driven diaphragm pumps

Subsection (a) establishes the applicability for the owner or operator of a natural gas-driven diaphragm pump based on the pump's location.

Subsection (b) establishes the compliance requirements for the owner or operator of a natural gas-driven diaphragm pump to reduce VOC emissions by 95% by weight or greater. For natural gas-driven diaphragm pumps located at a well site, the owner or operator shall reduce VOC emissions by connecting the natural gas-driven diaphragm pump to a control device through a closed vent system that meets the requirements of § 129.128(b) and routing the emissions to a control device or process that meets the requirements of § 129.129. For natural gas-driven diaphragm pumps located at a natural gas processing plant, the owner or operator shall reduce VOC emissions by maintaining an emission rate of zero standard cubic feet per hour.

Subsection (c) provides for three exceptions to the emissions limitations and control requirements in subsection (b) based on the presence of a control device, the capability of the control device, or technical infeasibility of routing emissions to the control device.

Subsection (d) provides for a categorical exemption for natural gas-driven diaphragm pumps located at a well site which operates less than 90 days per calendar year, so long as the owner or operator maintains records of the operating days.

Subsection (e) establishes the compliance requirements for the owner or operator when removing a control device or process to which emissions from a diaphragm pump are routed.

Subsection (f) references the recordkeeping and reporting requirements listed under § 129.130(d) and § 129.130(k)(3) for owners or operators of natural gas-driven diaphragm pumps.

§ 129.126. Compressors

Subsection (a) establishes the applicability for the owner or operator of a reciprocating compressor or centrifugal compressor based on the compressor's location.

Subsection (b) establishes the compliance requirements for the owner or operator of a reciprocating compressor choosing to either replace the rod packing or use a rod packing emissions collection system.

Subsection (c) establishes the compliance requirements for the owner or operator of a centrifugal compressor to reduce VOC emissions by 95% by connecting to a control device through a cover and closed vent system that meets the requirements of § 129.128.

Subsection (d) lists two categorical exemptions from the emissions limitation and control requirements of subsection (b) and (c) for compressors located at a well site or at an adjacent well site where the compressor services more than one well site.

Subsection (e) references the recordkeeping and reporting requirements listed under § 129.130(e) and § 129.130(k)(4) for owners or operators of reciprocating compressors and under § 129.130(f) and § 129.130(k)(5) for owners or operators of centrifugal compressors.

§ 129.127. Fugitive emissions components

Subsection (a) establishes the applicability for the owner or operator of a fugitive emissions component based on the component's location. This subsection also establishes that a fugitive emissions component at a well site with a well that produces less than 15 barrels of oil equivalent per day is not subject to this section.

Subsection (b) establishes the compliance requirements for producing well sites based on the gas to oil ratio (GOR) of the well. The owner or operator of a well site with a GOR less than 300 scf of gas per barrel of oil produced must maintain the records under § 129.130(g)(1). The owner or operator of a well site with a GOR greater than or equal to 300 scf of gas per barrel of oil must implement monthly AVO and quarterly instrument based LDAR. Owners and operators of well sites have the option of tracking the percentage of leaking components and reducing the LDAR frequency to semiannually if less than 2% of components are leaking.

Subsection (c) establishes the LDAR requirements for shut-in wells.

Subsection (d) establishes the compliance requirements for the owner or operator of a natural gas gathering and boosting station or natural gas processing plant to implement monthly AVO and quarterly LDAR.

Subsection (e) provides an option for owners or operators to request an extension of the LDAR inspection interval.

Subsection (f) establishes the requirement for owners or operators to develop and maintain a written fugitive emissions monitoring plan.

Subsection (g) establishes verification procedures for OGI equipment identified in the fugitive emissions monitoring plan.

Subsection (h) establishes the verification procedures for gas leak detection equipment using EPA Method 21 identified in the fugitive emissions monitoring plan.

Subsection (i) establishes the requirement for a fugitive emissions detection device to be operated and maintained in accordance with the manufacturer's recommended procedures, the test method, or a Department approved method.

Subsection (j) establishes that the owner or operator may opt to perform the no detectable emissions procedure of Section 8.3.2 of EPA Method 21.

Subsection (k) establishes the requirements to repair a leak detected from a fugitive emissions component and to resurvey the fugitive emissions component within 30 days of the leak repair.

The LDAR requirements in this proposed rulemaking are in line with the LDAR requirements listed in the Air Quality Permit Exemptions, GP-5A and GP-5. The EPA recognized the Commonwealth's LDAR requirements in GP-5A and GP-5 as an AMEL under the reconsideration of the 2016 NSPS. Since the LDAR program is recognized as AMEL for the 2016 NSPS, and the requirements of the 2016 NSPS and the 2016 O&G CTG are identical, the EPA should also accept the Commonwealth's LDAR program in this proposed rulemaking as AMEL. By establishing consistent LDAR requirements for both new and existing sources, the Department is providing owners and operators with the ability to merge both types of sources into one LDAR program.

Subsection (l) references the recordkeeping and reporting requirements for owners or operators of fugitive emissions components listed under § 129.130(g) and § 129.130(k)(6).

§ 129.128. Covers and closed vent systems

Subsection (a) establishes the requirements for the owner or operator of a cover on a storage vessel, reciprocating compressor, or centrifugal compressor, including a monthly AVO

inspection requirement. The monthly AVO inspection requirement is consistent with the AVO inspection requirement for fugitive emissions components.

Subsection (b) establishes the design, operation, and repair requirements for the owner or operator of a closed vent system installed on an applicable source.

Subsection (c) establishes the requirement that the owner or operator of a closed vent system perform a design and capacity assessment and allows either a qualified professional engineer or an in-house engineer, as defined in § 129.122, to perform the assessment as proposed in the 2016 NSPS reconsideration.

Subsection (d) establishes the requirement that the owner or operator conduct a no detectable emissions test procedure under section 8.3.2 of EPA Method 21.

§ 129.129. Control devices

Subsection (a) establishes the applicability for the owner or operator of a control device based on whether the control device receives a liquid, gas, vapor, or fume from one or more applicable storage vessel, natural gas-driven diaphragm pump, or wet seal centrifugal compressor degassing system. The owner or operator must operate each applicable control device whenever a liquid, gas, vapor or fume is routed to the device and must maintain the records under § 129.130(j) and submit reports under § 129.130(k)(9).

Subsection (b) establishes the general compliance requirements for the owner or operator of a control device. Subsections (c) through (i) outline specific requirements for each type of control device as well as the applicable general requirements in subsection (b).

Subsection (c) lists the compliance requirements for a manufacturer-tested combustion device, meaning 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?). The performance testing procedure in 40 CFR 60.5413a(d) is incorporated by reference in Chapter 122 (relating to national standards of performance for new stationary sources).

Subsection (d) lists the compliance requirements for an enclosed combustion device.

Subsection (e) lists the compliance requirements for a flare. The flare must meet the requirements under 40 CFR 60.18(b) (relating to general control device and work practice requirements).

Subsection (f) lists the compliance requirements for a carbon adsorption system.

Subsection (g) lists specific compliance requirements for a regenerative carbon adsorption system.

Subsection (h) lists specific compliance requirements for a non-regenerative carbon adsorption system.

Subsection (i) lists the compliance requirements for condensers and other non-destructive control devices.

Subsection (j) identifies the general performance test requirements.

Subsection (k) identifies the performance test method for demonstrating compliance with the control device percent VOC emission reduction requirements referenced in subsections (c), (d), (f), and (i).

Subsection (l) identifies the performance test method for demonstrating compliance with the outlet concentration requirements referenced in subsections (d), (f), and (i).

Subsection (m) lists the continuous parameter monitoring system requirements (CPMS) for control devices that are required to install CPMS.

§ 129.130. Recordkeeping and reporting

In an effort to assist the regulated community, the Department created a separate section for all the applicable recordkeeping and reporting requirements pertaining to each regulated source.

Subsection (a) establishes the general requirement for all owners or operators of regulated sources to maintain applicable records onsite or at the nearest local field office for five years and for the records to be made available to the Department upon request.

Subsection (b) establishes the specific recordkeeping requirements for storage vessels.

Subsection (c) establishes the specific recordkeeping requirements for natural gas-driven pneumatic controllers.

Subsection (d) establishes the specific recordkeeping requirements for natural gas-driven diaphragm pumps.

Subsection (e) establishes the specific recordkeeping requirements for reciprocating compressors.

Subsection (f) establishes the specific recordkeeping requirements for centrifugal compressors.

Subsection (g) establishes the specific recordkeeping requirements for fugitive emissions components.

Subsection (h) establishes the specific recordkeeping requirements for covers.

Subsection (i) establishes the specific recordkeeping requirements for closed vent systems.

Subsection (j) establishes the specific recordkeeping requirements for control devices.

Subsection (k) establishes the reporting requirements for all owners or operators of regulated sources to submit an initial report one year after the effective date of this rulemaking and subsequent annual reports, including an option to extend the due date of the initial report.

F. *Benefits, Costs and Compliance*

Benefits

The Department estimates that implementation of the proposed control measures could reduce VOC emissions by as much as 983 TPY from fugitive emissions components through the performance of quarterly LDAR inspections, by as much as 121 TPY from the installation of controls for storage vessels with actual emissions based on the Department's more stringent applicability thresholds, 109 TPY from pneumatic pumps and 3,191 TPY from pneumatic controllers. These reductions would benefit the health and welfare of the approximately 12.8 million residents and the numerous animals, crops, vegetation and natural areas of this Commonwealth by reducing the amount of ground-level ozone air pollution resulting from these sources.

As previously discussed, this proposed rulemaking is consistent with Governor Wolf's strategy to reduce emissions of methane from the oil and natural gas industry in this Commonwealth. Methane is a potent greenhouse gas with a global warming potential more than 28 times that of carbon dioxide over a 100-year time period, according to the EPA. The EPA has identified methane, the primary component of natural gas, as the second-most prevalent greenhouse gas emitted in the United States from human activities. According to federal estimates, the natural gas and oil industries account for a quarter of United States methane emissions. In addition to climate change impacts, methane and VOC emissions have harmful effects on air quality and human health. Thus, reducing methane leaks from oil and natural gas sources is essential to reducing global greenhouse gas emissions and protecting public health.

While this proposed rulemaking requires VOC emission reductions, methane emissions are also reduced as a co-benefit, because both VOCs and methane are emitted from oil and gas operations. Except for storage vessels, the requirements for control of emissions are not dependent on an applicability threshold for VOCs, meaning that most requirements have no minimum level of VOC emissions under which sources are granted an exemption. The control measures implemented for VOC emissions simultaneously control methane emissions and could reduce methane emissions by as much as 11,582 TPY from fugitive emissions components through the performance of quarterly LDAR inspections, by as much as 17 TPY from the installation of controls for storage vessels with actual emissions based on the Department's more stringent applicability thresholds, 2,583 TPY from pneumatic pumps, and 61,421 TPY from

pneumatic controllers. Approximately 2,627 TPY of these emission reductions are due to the additional stringency the Department proposes when compared to the 2016 O&G CTG.

Adoption of the VOC emission control measures and other requirements in this proposed rulemaking would allow the Commonwealth to make substantial progress in achieving and maintaining the 1997, 2008, and 2015 8-hour ozone NAAQS statewide. Implementation of and compliance with the proposed VOC emission reduction measures would also assist the Commonwealth in reducing the levels of ozone precursor emissions that contribute to potential nonattainment of the 2015 ozone NAAQS. As a result, the VOC emission control measures are reasonably necessary to attain and maintain the health-based and welfare-based 8-hour ozone NAAQS in this Commonwealth and to satisfy related CAA requirements.

Repeated exposure to ozone pollution for both healthy people and those with existing conditions may cause a variety of adverse health effects including difficulty breathing, chest pains, coughing, nausea, throat irritation and congestion. In addition, people with bronchitis, heart disease, emphysema, asthma and reduced lung capacity may have their symptoms exacerbated by ozone pollution. Asthma is a significant and growing threat to children and adults in this Commonwealth. Reduced ambient concentrations of ground-level ozone would reduce the incidences of hospital admissions for respiratory ailments including asthma and improve the quality of life for citizens overall. High levels of ground-level ozone also affect animals including pets, livestock, and wildlife, in ways similar to humans. Reduced ambient concentrations of ground-level ozone would improve the quality of life of animals, preserve this Commonwealth's biodiversity and reduce veterinary costs to farmers and citizens with pets.

In addition to causing adverse human and animal health effects, high levels of ground-level ozone affect vegetation and ecosystems, leading to reductions in agricultural crop and commercial forest yields by destroying chlorophyll; reduced growth and survivability of tree seedlings; and increased plant susceptibility to disease, pests, and other environmental stresses, including harsh weather. In long-lived species, these effects may become evident only after several years or even decades and have the potential for long-term adverse impacts on forest ecosystems.

This Commonwealth's has more than 58,000 farms occupying more than 7.7 million acres of farmland which account for 81,345 direct jobs and $9.2 billion in direct economic output from production agriculture. In addition to production agriculture, the industry also raises revenue and supplies jobs through support services such as food processing, marketing, transportation, farm equipment and landscaping. In total, the Pennsylvania Department of Agriculture (PDA) estimates that production agriculture and agribusiness contribute 215,985 jobs and $78.8 billion to this Commonwealth's economy. The economic value of crop yield loss due to high concentration of ground-level ozone can be calculated from both reduced seed production and visible injury to some leaf crops, including lettuce, spinach and tobacco, as well as visible injury to ornamental plants, including grass, flowers and shrubs. Reducing ground-level ozone concentrations will serve to protect agricultural yield and reduce losses to production agriculture and agribusiness in this Commonwealth.

This Commonwealth is forested over a total of 16.8 million acres, which represents 58% of the land area. Federal, state, and local government hold 5.1 million acres in public ownership, with the remaining 11.7 million acres in private ownership. The forest product industry only owns 0.4 million acres of forest, with the remainder held by an estimated 750,000 individuals, families, partnerships, or corporations. This Commonwealth leads the Nation in volume of hardwood with over 120.5 billion board feet of standing sawtimber. Recent data shows that this Commonwealth's forest growth-to-harvest rate is better than 2 to 1. As the leading producer of hardwood lumber in the United States, this Commonwealth also leads in the export of hardwood lumber, exporting nearly $560 million in 2017, and over $1.3 billion in lumber, logs, furniture and paper products to more than 70 countries around the world. Production is estimated at 1 billion board feet of lumber annually. This vast renewable resource puts the hardwoods industry at the forefront of manufacturing in this Commonwealth.

Both the U.S. Department of Agriculture and PDA estimate that forestry production and processing account for 64,515 direct jobs and $27.7 billion in direct economic output and direct value added to this Commonwealth's economy. Excessive ground level ozone is known to result in forest biomass loss. East of the Mississippi river, this Commonwealth is the state hardest hit by forest loss with the worst effects in western Pennsylvania. Reducing ground-level ozone concentrations will serve to protect this Commonwealth's position as the leader of growing volume of hardwood species and producer of hardwood lumber in the Nation.

The Pennsylvania Department of Conservation and Natural Resources (DCNR) is the steward of the state-owned forests and parks. DCNR awards millions of dollars in construction contracts each year to build and maintain the facilities in its parks and forests. Hundreds of concessions throughout the park system help complete the park experience for both in-State and out-of-State visitors. Ozone damage to the foliage of trees and other plants can decrease the aesthetic value of ornamental species used in residential landscaping, as well as the natural beauty of parks and recreation areas. However, the effects of the reduced aesthetic value of trees in heavily visited parks may not be quantifiable. Reducing the concentration of ground-level ozone will help maintain the benefits to this Commonwealth's economy due to tourism.

Through deposition, ground-level ozone also contributes to pollution in the Chesapeake Bay which can have adverse impacts including loss of species diversity and changes to habitat quality and water and nutrient cycles. High levels of ground-level ozone can also cause damage to buildings and synthetic fibers, including nylon, plastic, and rubber, and reduced visibility on roadways and in natural areas. The reduction of ground-level ozone air pollution concentrations directly benefits the human and animal populations of this Commonwealth with improved ambient air quality and healthier environments. The agriculture and timber industries and related businesses benefit directly from reduced economic losses that result from damage to crops and timber. Likewise, the natural areas and infrastructure within this Commonwealth and downwind states benefit directly from reduced environmental damage and economic losses.

The EPA estimated that the monetized health benefits of attaining the 2008 8-hour ozone NAAQS of 0.075 ppm range from $8.3 billion to $18 billion on a National basis by 2020. Prorating that benefit to this Commonwealth, based on population, results in a public health benefit of $337 million to $732 million. Similarly, the EPA estimated that the monetized health

benefits of attaining the 2015 8-hour ozone NAAQS of 0.070 ppm range from $1.5 billion to $4.5 billion on a National basis by 2025. Prorating that benefit to this Commonwealth, based on population, results in a public health benefit of $63 million to $189 million. The Department is not stating that these estimated monetized health benefits would all be the result of implementing the proposed RACT measures, but the EPA estimates are indicative of the benefits to Commonwealth residents of attaining the 2008 and 2015 8-hour ozone NAAQS through the implementation of a suite of measures to control VOC emissions in the aggregate from different source categories.

This proposed rulemaking may create economic opportunities for VOC emission control technology innovators, manufacturers, and distributors through an increased demand for new or improved equipment. In addition, the owners and operators of regulated facilities may be required to install and operate an emissions monitoring system or equipment necessary for an emissions monitoring method to comply with this proposed rulemaking, thereby creating an economic opportunity for the emissions monitoring industry.

This proposed rulemaking will provide consistency among all oil and natural gas sources in this Commonwealth for monitoring fugitive emissions components by including monthly AVO inspection requirements and quarterly LDAR inspection requirements. These requirements are consistent with the LDAR requirements specified in the Department's GP-5, GP-5A, and Air Quality Permit Exemption 38. This would have the benefit of providing owners and operators of both new and existing facilities with the ability to merge both types of sources into one LDAR program. This would also benefit the Department in ensuring compliance of these sources.

Compliance Costs

Compliance costs will vary for each facility depending on which compliance option is chosen by the owner or operator. For storage vessels, installing an enclosed combustion device will cost $25,194 per year and installing a vapor recovery unit will cost $32,006 per year. For pneumatic controllers, installing a pneumatic controller that utilizes instrument air when an instrument air system is already on-site costs $285 per year. Replacing a controller with a low bleed continuous controller costs $296 per year. Routing a diaphragm pump to a process costs $774 per year. Replacing the rod end packings on a reciprocating compressor at a gathering and boosting station costs $2,153 per year; at a processing plant the costs is $1,631 per year. Routing the wet seal centrifugal compressor degassing system to a process costs $2,553 per year.

Conducting quarterly LDAR with OGI at a well site costs $4,220 and at a gathering and boosting station $25,049 per year. Conducting a Method 21, 40 CFR Part 60, Subpart VVa (relating to standards of performance for equipment leaks of VOC in the synthetic organic chemicals manufacturing industry for which construction, reconstruction, or modification commenced after November 7, 2006) inspection at a processing plant costs $12,959. The Department assumes that using the OGI alternative method for EPA Method 21 at a processing plant costs $25,049 per year for a gathering and boosting station.

Based on the above compliance costs, and the number of applicable sources, the Department estimates that this proposed rulemaking will cost operators approximately $35.3 million (based

on 2012 dollars) without consideration of the economic benefit of the saved natural gas. The value of the saved natural gas, in 2012 dollars, yields a savings of approximately $9.9 million, resulting in a total net cost of $25.4 million for this proposed rulemaking.

If the owner or operator cannot meet the provisions of this proposed rulemaking, then they must demonstrate to the Department's satisfaction that it is economically or technically infeasible to meet the applicable proposed VOC RACT emission limitation in a case-by-case RACT permit application. This may minimize compliance costs to the owner or operator of an affected facility.

The VOC RACT requirements established by this proposed rulemaking will not require the owner or operator to submit an application for amendments to an existing operating permit. These requirements will be incorporated when the permit is renewed, if less than 3 years remain in the permit term, as specified under § 127.463(c) (relating to operating permit revisions to incorporate applicable standards). If 3 years or more remain in the permit term, the requirements would be incorporated as applicable requirements in the permit within 18 months of the promulgation of the final-form rulemaking, as required under § 127.463(b).

Compliance Assistance Plan

The Department plans to educate and assist the public and the regulated community in understanding the proposed requirements and how to comply with them. The Department will continue to work with the Department's provider of Small Business Stationary Source Technical and Environmental Compliance Assistance. These services are currently provided by the Environmental Management Assistance Program (EMAP) of the Pennsylvania Small Business Development Centers. The Department has partnered with EMAP to fulfill the Department's obligation to provide confidential technical and compliance assistance to small businesses as required by the APCA, Section 507 of the CAA (42 U.S.C.A. § 7661f) and authorized by the Pennsylvania Small Business and Household Pollution Prevention Program Act (35 P.S. §§ 6029.201—6029.209).

In addition to providing one-on-one consulting assistance and on-site assessments, EMAP also operates a toll-free phone line to field questions from Pennsylvania small businesses, as well as businesses wishing to start up in, or relocate to, Pennsylvania. EMAP operates and maintains a resource-rich environmental assistance website and distributes an electronic newsletter to educate and inform small businesses about a variety of environmental compliance issues.

Paperwork Requirements

The recordkeeping and reporting requirements for owners and operators of applicable sources under this proposed rulemaking are minimal because the records required are in line with the records already required to be kept for emission inventory purposes and for other federal and state requirements.

G. *Pollution Prevention*

The Pollution Prevention Act of 1990 (42 U.S.C.A. §§ 13101—13109) established a National policy that promotes pollution prevention as the preferred means for achieving state environmental protection goals. The Department encourages pollution prevention, which is the reduction or elimination of pollution at its source, through the substitution of environmentally friendly materials, more efficient use of raw materials and the incorporation of energy efficiency strategies. Pollution prevention practices can provide greater environmental protection with greater efficiency because they can result in significant cost savings to facilities that permanently achieve or move beyond compliance.

This proposed rulemaking would help ensure that the citizens of this Commonwealth would benefit from reduced emissions of VOC and methane from regulated sources. Reduced levels of VOC and methane would promote healthful air quality and ensure the continued protection of the environment and public health and welfare.

H. *Sunset Review*

This Board is not establishing a sunset date for this proposed rulemaking, since it is needed for the Department to carry out its statutory authority. The Department will closely monitor this proposed rulemaking after promulgation as a final-form rulemaking in the *Pennsylvania Bulletin* for its effectiveness and recommend updates to the Board as necessary.

I. *Regulatory Review*

Under section 5(a) of the Regulatory Review Act (71 P.S. § 745.5(a)), on DATE, the Department submitted a copy of this proposed rulemaking to the Legislative Reference Bureau for publication in the *Pennsylvania Bulletin* and to the Independent Regulatory Review Commission (IRRC) and the Chairpersons of the House and Senate Environmental Resources and Energy Committees. In addition to submitting this proposed rulemaking, the Department has provided IRRC and the House and Senate Committees with a copy of a detailed Regulatory Analysis Form prepared by the Department. A copy of this material is available to the public upon request.

Under section 5(g) of the Regulatory Review Act, IRRC may convey any comments, recommendations or objections to the proposed rulemaking within 30 days of the close of the public comment period. The comments, recommendations or objections must specify the regulatory review criteria in section 5.2 of the Regulatory Review Act (71 P.S. § 745.5b) which have not been met. The Regulatory Review Act specifies detailed procedures for review, prior to final publication of the rulemaking by the Department, the General Assembly and the Governor.

J. *Public Comments*

Interested persons are invited to submit to the Board written comments, suggestions, support, or objections regarding this proposed rulemaking. Comments, suggestions, support, or objections must be received by the Board by DATE.

Comments may be submitted to the Board by accessing the Board's online comment system at http://www.ahs.dep.pa.gov/eComment.

Comments may also be submitted by e-mail to RegComments@pa.gov. A subject heading of this proposed rulemaking and a return name and address must be included in each transmission.

If an acknowledgement of comments submitted online or by e-mail is not received by the sender within 2 working days, the comments should be retransmitted to the Board to ensure receipt. Comments submitted by facsimile will not be accepted.

Comments may also be submitted to the Board by mail or express mail. Written comments should be mailed to the Environmental Quality Board, P.O. Box 8477, Harrisburg, PA 17105-8477. Express mail should be sent to the Environmental Quality Board, Rachel Carson State Office Building, 16th Floor, 400 Market Street, Harrisburg, PA 17101-2301.

K. ***Public Hearings***

The Board will hold 3 public hearings for the purpose of accepting comments on this proposed rulemaking. The hearings will be held at ___ p.m. on the following dates:

_____(blank)_____

_____(blank)_____

_____(blank)_____

Persons wishing to present testimony at a hearing are requested to contact the Environmental Quality Board, P.O. Box 8477, Harrisburg, PA 17105-8477, (717) 787-4526 at least 1 week in advance of the hearing to reserve a time to present testimony. Oral testimony is limited to 5 minutes for each witness. Witnesses are requested to submit three written copies of their oral testimony to the hearing chairperson at the hearing. Organizations are limited to designating one witness to present testimony on their behalf at each hearing.

Persons in need of accommodations as provided for in the Americans with Disabilities Act of 1990 should contact the Board at (717) 787-4526 or through the Pennsylvania AT&T Relay Service at (800) 654-5984 (TDD) or (800) 654-5988 (voice users) to discuss how the Board may accommodate their needs.

PATRICK McDONNELL,
Chairperson