

**FINAL-FORM RULEMAKING  
ENVIRONMENTAL QUALITY BOARD  
[ 25 PA. CODE CHS. 121 AND 129 ]**

**Control of VOC Emissions from Gasoline Dispensing Facilities (Stage I and Stage II)**

The Environmental Quality Board (Board) amends Chapters 121 and 129 (relating to general provisions; and standards for sources) as set forth in Annex A. This final-form rulemaking amends air quality regulations relating to control of volatile organic compound (VOC) emissions during loading of underground gasoline storage tanks (this is “Stage I” vapor recovery), during filling of motor vehicles at the pump (this is “Stage II” vapor recovery), and during and after decommissioning of Stage II vapor recovery equipment from gasoline dispensing pumps. This final-form rulemaking also adds and amends definitions relating to Stage I and Stage II vapor recovery systems. This final-form rulemaking amends §§ 121.1, 129.61 and 129.82 (relating to definitions; small gasoline storage tank control (Stage I control), and control of VOCs from gasoline dispensing facilities (Stage II)); and adds §§ 129.61a and 129.82a (relating to vapor leak monitoring procedures and other requirements for small gasoline storage tank emission control and requirements to decommission a Stage II vapor recovery system).

This final-form rulemaking was adopted by the Board at its meeting on [REDACTED].

*A. Effective Date*

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

*B. Contact Persons*

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*C. Statutory Authority*

This final-form rulemaking is authorized under section 5(a)(1) of the Air Pollution Control Act (act) (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 and section 5(a)(8) of the act (35 P.S. § 4005(a)(8)), which 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*

### *Purpose*

The purpose of this final-form rulemaking is to require that air quality emission control systems that cause unnecessary excess emissions be removed from gasoline dispensing facilities (GDF) without causing excess emissions in the process and without increasing emissions at GDFs over the long-term. The Stage I and Stage II vapor recovery systems affected by this final-form rulemaking control VOCs and air toxics (including benzene) emitted from gasoline at GDFs. VOC emissions are precursors to the formation of ground-level ozone, a criteria air pollutant and public health and welfare hazard. Air toxics are hazardous air pollutants.

The vapor leak monitoring procedures and other emission control requirements for small gasoline storage tanks required under § 129.61a are significant to the protection of air quality in this Commonwealth. These requirements apply in the 5-county Philadelphia area (consisting of Bucks, Chester, Delaware, Montgomery and Philadelphia Counties) and the 7-county Pittsburgh area (consisting of Allegheny, Armstrong, Beaver, Butler, Fayette, Washington and Westmoreland Counties). The protections under § 129.61a, which include preserving leak testing requirements in § 129.82 and enhancing vapor leak testing by requiring two additional tests, will help ensure that ozone pollution in these challenging ozone pollution areas does not increase upon decommissioning of Stage II vapor recovery equipment under new § 129.82a.

For many years, the Department has required Stage II vapor recovery system installation and implementation in these ozone pollution areas under § 129.82. In this final-form rulemaking, the Board is authorizing the removal of Stage II “vapor balance” vapor recovery systems from GDFs statewide because they are no longer needed and is requiring the removal of the more prevalent type of Stage II vapor recovery system, known as “vacuum assist,” from the 5-county Philadelphia and 7-county Pittsburgh areas. (These two types of Stage II vapor recovery systems are described in more detail as follows in this section.) These amendments protect against redundancies and disbenefits created by using Stage II systems with vehicle-based onboard refueling vapor recovery (ORVR) systems, now that ORVR systems are in widespread use.

The ORVR systems, just like Stage II vapor recovery systems, are designed to reduce fuel vapor emissions from vehicle refueling. The ORVR-equipped vehicles capture 98% of the fugitive emissions caused by refueling. Pertaining to a GDF, a fugitive emission is an air contaminant emitted into the outdoor atmosphere when not properly emitted through a vent. When an ORVR-equipped vehicle is being refueled with a Stage II vacuum assist vapor recovery system, unwanted emissions of VOCs and air toxics may occur through adverse impacts of the ORVR system on the Stage I and Stage II vapor recovery systems. When a vacuum assist Stage II vapor recovery system is used while refueling an ORVR-equipped vehicle, the Stage II vapor recovery system mostly returns fresh air, not gasoline vapors, into the underground storage tank (UST), because nearly all the gasoline vapor is captured by the vehicle’s ORVR system. The fresh air returned to the UST pressurizes the empty space in the UST, forcing gasoline vapors out of the liquid gasoline portion in the UST. The pressure builds to a point at which the vapors vent into the atmosphere through a pressure/vacuum vent valve. This venting is inherent in the UST design; it preserves the integrity and prevents damaging the UST, preventing underground leaks. When enough vehicles (approximately 90%) are equipped with ORVR systems in a Stage II

area, the excess emissions emitted into the atmosphere due to the incompatibility between ORVR systems and Stage II vacuum assist vapor recovery systems exceed any emissions benefits.

To ensure that ozone pollution does not increase, the Board is repealing requirements under § 129.82 that a GDF owner or operator in the Philadelphia or Pittsburgh area install a Stage II vapor recovery system, preserving vapor leak testing requirements in § 129.82 and enhancing vapor leak testing by requiring two additional tests in § 129.61a. Other amendments are the new and amended definitions under § 121.1 that help implement this final-form rulemaking. The remaining amendments clarify Stage I vapor recovery system requirements under § 129.61.

### *Air quality*

As mentioned previously, VOCs are precursors for ground-level ozone formation. Ground-level ozone, a public health and welfare hazard, is not emitted directly to the atmosphere from GDFs, but forms from a photochemical reaction between VOCs and nitrogen oxides (NO<sub>x</sub>) in the presence of sunlight. The Philadelphia and Pittsburgh areas are the most challenging areas in this Commonwealth to bring into, and in which to maintain, the Federal standards for ground-level ozone.

The United States Environmental Protection Agency (EPA) is responsible for establishing National Ambient Air Quality Standards (NAAQS) for six criteria pollutants considered harmful to public health and welfare, including the environment: ground-level ozone, particulate matter, NO<sub>x</sub>, 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, including protection against visibility impairment and from damage to animals, crops, vegetation and buildings. The EPA established primary and secondary ground-level ozone NAAQS to protect public health and welfare.

In 1979, the EPA promulgated the first NAAQS for ground-level ozone based on a 1-hour average concentration of 0.12 parts per million (ppm) (120 parts per billion). See 44 FR 8202 (February 8, 1979).

In 1997, after determining that the 1-hour NAAQS was inadequate to protect public health, the EPA promulgated a new NAAQS based on an 8-hour average of 0.08 ppm averaged over 8 hours. See 62 FR 38855 (July 18, 1997). Because ozone ambient air monitoring data is measured out to three decimal places, the standard effectively became 0.084 ppm with rounding; areas with ozone levels as high as 0.084 ppm (84 parts per billion (ppb)) were considered to be meeting the 0.08 ppm standard. In 2004, the EPA designated 37 counties in this Commonwealth as 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 2017 and 2018 ozone seasons, all monitored areas of this Commonwealth are attaining the 1997 8-hour ozone NAAQS. Maintenance plans have been submitted to the EPA and approved for the 1997 ozone standard. Section 175A(a) of the CAA (42 U.S.C.A. § 7505a(a)) (relating to maintenance plans) prescribes that the maintenance plans include permanent and enforceable control measures that will provide for the maintenance of the 1997 ozone NAAQS for at least 10 years following the EPA's redesignation of the areas to attainment of the 1997 ozone standard.

In March 2008, the EPA lowered the ozone NAAQS to 0.075 ppm (75 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 areas 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. The certified 2018 ambient air monitoring data indicate that all ozone monitors in this Commonwealth, except for the Bristol monitor (in Bucks County), and the Northeast Airport and Northeast Waste monitors (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.

On October 1, 2015, the EPA lowered the primary and secondary ozone NAAQS to 0.070 ppm (70 ppb) averaged over 8 hours. See 80 FR 65292 (October 26, 2015). As required under section 107(d) of the CAA (42 U.S.C.A. § 7407(d)), the Commonwealth submitted designation recommendations for the 2015 ozone NAAQS to the EPA on October 3, 2016, based on the ambient ozone concentrations from the 2013 through 2015 ozone seasons. See 46 Pa. B. 5162 (August 20, 2016). The Commonwealth submitted revised designation recommendations to the EPA on April 22, 2017. See 47 Pa.B. 2387 (April 22, 2017). The EPA issued final designations for the attainment/unclassifiable areas on November 16, 2017. See 82 FR 54232 (November 16, 2017). In June 2018, the EPA designated Bucks, Chester, Delaware, Montgomery and Philadelphia Counties as nonattainment for the 2015 ozone NAAQS. See 83 FR 25776 (June 4, 2018). Based on the certified ambient air monitoring data for 2018, eight monitors in seven counties in this Commonwealth have design values that violate the 2015 ozone NAAQS. The monitors are in Allegheny, Bucks, Chester, Delaware, Montgomery, Northampton and Philadelphia Counties. The Department must ensure that the 2015 ozone NAAQS is attained and maintained by implementing permanent and Federally-enforceable control measures as necessary and appropriate.

The reductions in VOC emissions that will be achieved following the implementation of this final-form rulemaking will enable the Commonwealth to make progress in attaining and maintaining the 2008 and 2015 8-hour ozone NAAQS. The Department will submit the final regulations to the EPA for approval as a revision to the Commonwealth's State Implementation Plan (SIP) at 40 CFR 50.2020 (relating to identification of plan).

#### *Stage I vapor recovery systems - An overview*

This final-form rulemaking addresses Stage I vapor recovery system requirements under amendments to § 129.61 and under new § 129.61a.

“Stage I” refers to a vapor recovery system, including equipment and components, that controls the emission into the atmosphere of gasoline vapors during the transfer of gasoline from a gasoline tank truck to a gasoline storage tank at a GDF. A properly operating Stage I vapor recovery system returns vapors to the gasoline tank truck. The equipment and components of a

Stage I vapor recovery system also control the emission of gasoline vapors during the storage of gasoline at a GDF.

The Board initially adopted Stage I vapor recovery system requirements for areas of this Commonwealth with the most persistent ozone pollution problems, including the Philadelphia and Pittsburgh areas. See 9 Pa.B. 1447 (April 9, 1979). The Board later amended the regulations at 10 Pa.B. 3788 (September 27, 1980) and in 1991 expanded the requirements statewide to address continuing ozone nonattainment problems in this Commonwealth and throughout the Northeast. See 21 Pa.B. 3406 (August 3, 1991). The Board streamlined the regulations in 1995 to eliminate two of three exemptions, rendering the regulations applicable to gasoline storage tanks with a capacity of more than 2,000 gallons, matching the EPA's exemption. See 25 Pa.B. 3849 (September 16, 1995).

In 2008, the EPA adopted National Emission Standards for Hazardous Air Pollutants (NESHAP) from gasoline dispensing facilities. See 40 CFR, Part 63, Subpart CCCCCC (relating to National emission standards for hazardous air pollutants for source category: gasoline dispensing facilities). The EPA adopted the NESHAP under section 112 of the CAA (42 U.S.C.A. § 7412) to curb hazardous air pollutants (HAP); but not all VOCs are HAPs. The Federal standards in the NESHAP are enforceable by the EPA against sources nationwide. The NESHAP focuses on controlling the emission of HAPs in gasoline vapors during the loading of USTs, through Stage I vapor recovery systems.

The Commonwealth's existing Stage I vapor recovery regulations, under § 129.61, are more protective of air quality than the NESHAP. This final-form rulemaking, under new § 129.61a, is also more protective than the NESHAP because it requires vapor leak testing to be performed at more GDFs in the areas of the Commonwealth subject to these requirements, and more often, than under the NESHAP. Section 129.61a of the final-form rulemaking also requires the use of low permeation gasoline hoses and dripless enhanced conventional (ECO) nozzles to protect against VOC emissions into the atmosphere; measures not required by the NESHAP. These hoses and nozzles are cost effective measures that will significantly reduce VOC emissions and small gasoline spills.

A concern was raised by the Independent Regulatory Review Commission (IRRC) during the comment period on the proposed rulemaking that the Board should address in the Preamble and Regulatory Analysis Form how the benefits of ECO nozzles outweigh the negative fiscal and environmental impacts. Another commentator stated that ECO nozzles could cause worse spills than conventional nozzles. The Board realizes that the cost of ECO nozzles will be more expensive than conventional nozzles, but the Department has explained that the cost-effectiveness of requiring ECO nozzles is comparable to other VOC control measures. The cost-effectiveness of ECO nozzles controlling gasoline from entering the environment is approximately \$2,173 per ton averaged over all subject GDFs. When considering that VOC emission reduction credits (ERCs) are nearly unavailable in the two areas subject to this final-form rulemaking and those ERCs would likely be priced at a higher premium when compared to the cost-effectiveness of the ECO nozzle at an average cost of approximately \$2,173 per ton over all subject GDFs, ECO nozzles are a cost-effective control measure.

As described previously, the protections under § 129.61a will help ensure that ozone levels do not increase upon decommissioning of Stage II vapor recovery equipment and that the current emission reductions continue to be achieved at GDFs after decommissioning of Stage II vapor recovery equipment.

In 1993, the EPA approved a SIP revision containing the Commonwealth's Stage I vapor recovery regulations. See 58 FR 28362 (May 13, 1993). The Commonwealth's approved SIP is codified under 40 CFR 52.2020. The EPA's approval of the Stage I vapor recovery regulations, under § 129.61, is codified under 40 CFR 52.2020(c)(1) (relating to EPA-approved Pennsylvania regulations and statutes).

#### *Stage II vapor recovery—an overview*

This final-form rulemaking addresses Stage II vapor recovery requirements under § 129.61a(g)(2)(vii) and (viii), § 129.82 and § 129.82a. The regulation of Stage II vapor recovery systems was mandated under sections 182 and 184(b)(2) of the CAA (42 U.S.C.A. §§ 7511a and 7511c(b)(2)). The Board first adopted the Stage II vapor recovery system regulations at 22 Pa.B. 585 (February 8, 1992), under § 129.82. In 1999, the Board amended § 129.82 to adjust compliance deadlines at 29 Pa.B. 1889 (April 10, 1999). During that timeframe, amendments to the act were also made. The statutory and regulatory history, the two CAA provisions and the EPA Administrator's lifting of the mandate for States to implement Stage II vapor recovery programs are discussed in more depth under *Stage II vapor recovery – Statutory, regulatory and SIP history*, as follows.

“Stage II” refers to a vapor recovery system, including equipment and components, that controls the emission into the atmosphere of vapors during the transfer of gasoline from a gasoline storage tank at a GDF to a motor vehicle fuel tank. A Stage II vapor recovery system also controls emissions into the atmosphere of vapors during the storage of gasoline at a GDF. Stage II vapor recovery technology uses special refueling nozzles, dispensing hoses and a system that draws refueling vapors into the UST. A properly operating Stage II vapor recovery system moves the gasoline vapors from the motor vehicle fuel tank during refueling of the vehicle into the UST at the GDF, preventing the vapors from escaping into the ambient air. Stage II vapor recovery systems are also designed to eliminate the influx of air to the UST that would have occurred without the Stage II vapor recovery system as fuel is pumped out. The Stage II vapor recovery system, in turn, prevents gasoline from evaporating from inside the UST.

#### *Stage II vapor recovery—two types*

There are two types of Stage II vapor recovery technologies: (1) vapor balance and (2) vacuum assist. The two types of Stage II vapor recovery technologies work in different ways. As mentioned previously, Stage II vapor recovery systems are designed to reduce fuel vapor emissions from vehicle refueling at a GDF. A Stage II vapor recovery system also controls emissions into the atmosphere of vapors during the storage of gasoline at a GDF. Stage II vapor recovery technology uses special refueling nozzles, dispensing hoses and a system that draws refueling vapors into the UST. A Stage II “vapor balance” vapor recovery system uses direct displacement to collect or process vapors at a GDF. Vapor transfer to the UST is accomplished by the slight pressure created in the motor vehicle fuel tank by the incoming flow of gasoline.

This system is passive. A Stage II “vacuum assist” vapor recovery system creates a vacuum to assist the movement of vapors back into the UST for storage or processing. The vacuum assist system is more complex to operate. It also draws some ambient air into the vapor return hose to the UST, which in turn requires secondary processing to accommodate the excess vapors.

Stage II vacuum assist vapor recovery technology is the prevalent Stage II system technology in this Commonwealth. It is installed at approximately 1,600 GDFs in the five-county Philadelphia and seven-county Pittsburgh areas and represents approximately 95% of the GDFs subject to Stage II vapor recovery requirements in those areas and 93% of all Stage II vapor recovery systems in this Commonwealth. However, an incompatibility exists between Stage II vacuum assist vapor recovery systems and ORVR systems installed in the motor vehicle fleet since 1998. The widespread use of ORVR systems throughout the motor vehicle fleet will soon cause the use of Stage II vacuum assist vapor recovery systems to create an emissions disbenefit in this Commonwealth and elsewhere in the United States.

For this reason, this final-form rulemaking requires decommissioning of Stage II vacuum assist vapor recovery systems in the five-county Philadelphia and seven-county Pittsburgh areas, under § 129.82a. For Stage II vapor balance vapor recovery systems, however, § 129.82a will allow, but not require, decommissioning. Section 129.61a ensures that there are not excess emissions of VOCs and HAPs during or after decommissioning.

#### *Stage II vapor recovery—statutory, regulatory and SIP history*

From the 1980s through 1999, the Department and the General Assembly acted to develop Stage II vapor recovery control requirements to reduce pervasive ozone problems in this Commonwealth and to meet CAA requirements. The statutory requirements have since been repealed, leaving only § 129.82 in State law.

The Board proposed the initial Stage II vapor recovery requirements as an ozone reduction measure. See 20 Pa.B. 3174 (June 16, 1990). At that time, 26 counties in California and in several major metropolitan areas in the United States had implemented Stage II vapor recovery programs. See 20 Pa.B. 3174. Refueling of gasoline powered motor vehicles was a major source of uncontrolled VOC emissions in much of the country and the Commonwealth needed the emission reductions to help attain the 1979 1-hour ozone NAAQS. See 20 Pa.B. 3174.

Five months later, on November 15, 1990, Congress enacted broad amendments to the CAA (1990 CAA amendments). In the 1990 CAA amendments, Congress mandated that States implement Stage II vapor recovery requirements by November 15, 1992, in areas classified as moderate or worse for ozone nonattainment. See sections 182(b)(3), (c), (d) and (e) of the CAA (42 U.S.C.A. §§ 7511a(b)(3), (c), (d) and (e)). For states in the Ozone Transport Region (OTR), which includes the Commonwealth, Congress also required statewide implementation of control measures capable of achieving emission reductions comparable to those achievable through the vehicle refueling controls required by section 182(b)(3) of the CAA for moderate ozone nonattainment areas. See section 184(b)(2) of the CAA. These CAA provisions required States to obtain EPA approval of these measures as part of their SIPs to make the measures enforceable under Federal law.

Following the 1990 CAA amendments, the Board withdrew the draft final-form rulemaking it had developed for the Stage II vapor recovery rulemaking it proposed on June 16, 1990. The next year, EPA issued important guidance under section 182(b)(3) of the CAA. The guidance, “Enforcement Guidance for Stage II Vehicle Refueling Control Programs,” EPA Office of Air and Radiation, October 1991 (EPA Stage II Enforcement Guidance), addressed the effectiveness of gasoline vapor recovery systems.

On February 8, 1992, to promulgate timely regulations meeting the 1990 CAA amendments, the Board promulgated Stage II vapor recovery regulations through use of the final-omit rulemaking process. See 22 Pa.B. 585. The regulations were substantially similar to the 1990 rulemaking the Board had proposed and withdrew.

Under the 1992 regulation, § 129.82 called for Stage II implementation beginning in late 1992. The regulations, applied in areas of this Commonwealth that were classified as moderate, serious and severe ozone nonattainment areas. See 22 Pa.B. 585. The regulations were designed to address the pervasive ozone nonattainment problem that confronted the Commonwealth. See 22 Pa.B. 585. The requirements applied to the Pittsburgh moderate ozone nonattainment area (consisting of the seven-county Pittsburgh area), the Reading moderate ozone nonattainment area (consisting of Berks County) and the Philadelphia severe ozone nonattainment area (consisting of the five-county Philadelphia area). Implementation began in the five-county Philadelphia area.

Section 129.82 did not include the functional testing and certification requirements or the emission control requirements of the October 1991 EPA Stage II Enforcement Guidance. To correct the deficiencies, the Pennsylvania General Assembly added former section 6.7, formerly regarding control of volatile organic compounds from gasoline dispensing facilities, to the act. Section 6.7 echoed the Stage II vapor recovery regulations, though with later compliance dates by 9 months. Section 6.7 also required use of the functional testing and certification requirements of the EPA’s Stage II vapor recovery guidance documents. See section 9 of Senate Bill 1650 of 1992. This Senate Bill was enacted into law as the act of July 9, 1992 (P.L. 460, No. 95) (act 95 of 1992).

The Department submitted the 1992 Stage II vapor recovery regulations to the EPA on March 4, 1992, seeking approval of them as a revision to the Commonwealth’s SIP. The EPA proposed concurrent actions on the SIP revision the following year. See 58 FR 62560 (November 29, 1993). The first proposed EPA action proposed limited approval and limited disapproval due to deficiencies in testing, inspection frequency, facility training, and percent vapor control requirements and due to a deficiency of not requiring that the Stage II vapor recovery equipment be certified by the California Air Resources Board (CARB) or have an equivalent certification. The second proposed EPA action proposed approval of the Stage II vapor recovery regulations dependent upon the Department supplementing the SIP revision with section 6.7(b), (c) and (h) of the act (35 P.S. § 4006.7(b), (c) and (h)) and with section 17(2) of act 95 of 1992 (which established the effective date of section 6.7).

On June 13, 1994, the EPA published notice of final rulemaking, providing a limited approval and a limited disapproval of the Department’s Stage II vapor recovery SIP revision. The EPA approved § 129.82 as submitted but issued the limited disapproval to allow the Department to



correct the functional testing and certification requirement deficiencies noted by the EPA in its November 29, 1993, notice of proposed rulemaking. See 59 FR 30302 (June 13, 1994).

On October 26, 1995, the Department submitted a SIP revision to the EPA consisting of section 6.7(b), (c) and (h) of the act and section 17(2) of Act 95 of 1992. This submittal satisfied the SIP deficiencies, enabling the EPA to approve the SIP revision. The Commonwealth's EPA-approved SIP established the necessary Stage II vapor recovery control requirements to meet the 1990 CAA amendments. See 60 FR 63938 (December 13, 1995).

The Department had already begun implementing Stage II in the five-county Philadelphia area, but had deferred implementation in the moderate nonattainment areas because it desired time to determine whether the program was, in fact, necessary for attainment of the ozone air quality standard in those areas. The moderate nonattainment areas were Berks County and the seven-county Pittsburgh area. See the Department's notice of suspension of enforcement at 24 Pa.B. 1890 (April 9, 1994) (regarding Stage II policy availability).

For Berks County, implementation never occurred because the area came into attainment of the NAAQS without implementation of § 129.82. In the same timeframe, the EPA promulgated ORVR system requirements for vehicles under section 202(a)(6) of the CAA (42 U.S.C.A. § 7521(a)(6)). Under this CAA provision, this EPA action enabled states to remove Stage II vapor recovery requirements from moderate ozone nonattainment areas. (For more information, see the subheading Stage II Vapor Recovery - Conflict between Stage II vapor recovery systems and motor vehicle fueling emission controls; the EPA's widespread use determination, as follows.)

For the seven-county Pittsburgh area, implementation began several years later. During the period in which implementation was deferred, the area had monitored attainment of the ozone NAAQS. This had suspended the requirements for the Department to submit a SIP revision to the EPA showing how the area would come into attainment of the NAAQS under section 182(b) of the CAA. See 61 FR 28061 (June 4, 1996). In 1995, however, exceedances at ambient ozone monitors in the Pittsburgh area resulted in a violation of the ozone NAAQS, ending the SIP submittal suspension. See 61 FR 28061. In response, Governor Tom Ridge formed a stakeholder group to review the ozone problem and to recommend emission control programs for the area. The Southwest Pennsylvania Ozone Stakeholder Working Group recommended, among other measures, implementing the Stage II vapor recovery control requirements to help the area attain the ozone NAAQS again. See 27 Pa.B. 2239 (May 3, 1997) (relating to control of VOCs from gasoline dispensing facilities (Stage II)). After considering this recommendation, the Board on May 3, 1997, proposed amendments to the Stage II vapor recovery regulations at 27 Pa.B. 2239.

In its 1997 proposal, the Board proposed amending compliance dates for the seven-county Pittsburgh area under § 129.82(a), adding the functional testing and certification requirements to § 129.82 as a new subsection (d) and making clarifying amendments. See 27 Pa.B. 2239. In reply and to remove conflicting compliance dates, the Pennsylvania General Assembly repealed the Stage II vapor recovery provisions from the act, leaving only the SIP-approved requirement under section 6.7(h) that the Department implement functional testing and certification requirements established by EPA guidance. See the act of November 26, 1997 (P.L. 530, No. 57). On April 10, 1999, the Board finalized the amendments to § 129.82, including the

compliance dates, clarifying edits, a possible exit from the program for the Pittsburgh area in 2010 under subsection (d) and the functional testing and certification requirements under subsection (e). See 29 Pa.B. 1889.

The Department submitted the amended regulations to the EPA as a SIP revision on March 3, 2000. The EPA approved the SIP revision. See 66 FR 27875 (May 21, 2001). On July 5, 2012, the Pennsylvania General Assembly repealed the remaining subsection 6.7(h) under the act of July 5, 2012, (P.L. 1109, No. 135).

In addition to the SIP revision that the Department plans to submit for approval of this final-form rulemaking, when adopted as a final regulation, the Department intends to submit a SIP revision to ensure removal of section 6.7 of the act from the SIP.

*Stage II Vapor Recovery—conflict between Stage II vapor recovery systems and motor vehicle fueling emission controls; the EPA’s widespread use determination*

In addition to requiring that States adopt Stage II vapor recovery controls, Congress in the 1990 CAA amendments required the EPA Administrator to promulgate, by November 1, 1991, standards for vehicle-based onboard systems for the control of vehicle fueling emissions, including VOCs. See section 202(a)(6) of the CAA. These vehicle-based onboard systems are the ORVR systems mentioned previously under the subheadings, Purpose and Stage II vapor recovery – two types. Congress realized that ORVR systems would eventually replace the need for Stage II vapor recovery systems, so Congress created two off-ramps under section 202(a)(6) of the CAA. One of the off-ramps was the opportunity for States to remove Stage II vapor recovery requirements for moderate nonattainment areas upon the EPA’s promulgation of ORVR standards.

The EPA promulgated the ORVR requirements in 1994. See, 59 FR 16262 (April 6, 1994). Although a State could remove Stage II vapor recovery requirements in moderate ozone nonattainment areas at that point, a State could retain its Stage II vapor recovery requirements if the requirements continued to be useful and needed. The Department did not seek to remove the Stage II vapor recovery program applicability for this Commonwealth’s moderate ozone nonattainment areas at that time.

Under the second off-ramp under section 202(a)(6) of the CAA, Congress authorized the EPA Administrator to waive CAA Stage II vapor recovery requirements for serious, severe and extreme ozone nonattainment areas upon determining that ORVR systems are in widespread use. In 2012, the EPA published a notice of final rulemaking determining that ORVR systems are in widespread use nationally throughout the motor vehicle fleet. See 77 FR 28772 (May 16, 2012) (widespread use determination). Based on this determination, the EPA Administrator waived the CAA requirement that States with serious, severe and extreme ozone nonattainment areas adopt and implement programs requiring Stage II vapor recovery systems, effective May 16, 2012. See 77 FR 28778 (May 16, 2012). The widespread use determination and waiver of requirements are found in 40 CFR 51.126 (relating to determination of widespread use of ORVR and waiver of CAA section 182(b)(3) Stage II gasoline vapor recovery requirements). For an EPA Fact Sheet about the EPA’s widespread use determination, see [https://www.epa.gov/sites/production/files/2015-09/documents/stage\\_2\\_vapor\\_factsheet.pdf](https://www.epa.gov/sites/production/files/2015-09/documents/stage_2_vapor_factsheet.pdf).

In its widespread use notice, the EPA explained that phasing out the use of Stage II vapor recovery systems could lead to long-term cost savings for affected gas station owners and operators while maintaining air quality protections. See 77 FR 28772, 28780. The EPA also stated that the agency would issue nonbinding guidance on developing and submitting approvable SIP revisions to remove Stage II vapor recovery programs from the SIP. See 77 FR 28772. On August 7, 2012, the EPA issued the guidance. See 77 FR 28772. In the guidance, entitled "Guidance on Removing Stage II Gasoline Vapor Control Programs from State Implementation Plans and Assessing Comparable Measures," EPA, H. Lynn Dail et. al., EPA-457/B-12-001, August 7, 2012 (Decommissioning Guidance), the EPA addressed how States should demonstrate that removing Stage II vapor recovery requirements will not cause "backsliding" and, for States in the OTR, how OTR States should demonstrate that they require "comparable measures" under section 184(b)(2) of the CAA.

Using the EPA's Decommissioning Guidance, the Department completed its analysis of the effects that incompatibility between Stage II vacuum assist vapor recovery systems and ORVR systems has on emissions. Modeling shows that the equipment incompatibility will result in overall excess VOC emissions in this Commonwealth in 2021 in the seven-county Pittsburgh area and in 2022 in the five-county Philadelphia area without removal of these Stage II vapor recovery systems. Overall emissions will increase because emissions due to incompatibility will be greater than the emission reductions achieved by using Stage II vapor recovery systems to pump gasoline into vehicles not equipped with ORVR systems because ORVR-equipped vehicles comprise a larger share of the highway vehicle fleet. Excess VOC emissions would also result without the corresponding requirements to offset VOC emissions caused by, and following, the decommissioning of Stage II vapor recovery equipment.

#### *Stage II vapor recovery—Pennsylvania Bulletin notices of Stage II enforcement discretion*

Because of the EPA's widespread use determination and the Department's intention to remove certain Stage II vapor recovery requirements, the Department on August 18, 2012, issued a notice of suspension of enforcement of the Stage II vapor recovery requirements from new and newly affected GDFs in the five-county Philadelphia and seven-county Pittsburgh areas. See 42 Pa.B. 5437 (August 18, 2012). The suspension of enforcement applied to the owners and operators of new GDFs that began operation after July 31, 2012, and GDFs that were newly affected after July 31, 2012. The Department continued to enforce the requirements applicable to existing facilities subject to the Stage II vapor recovery requirements until further notice.

On November 12, 2016, the Department issued a supplemental notice of suspension of enforcement of the Stage II vapor recovery requirements. In this notice, the Department suspended enforcement against owners and operators who would be adding new gasoline dispensers or replacing gasoline dispensers at affected GDFs. See 46 Pa.B. 7204 (November 12, 2016). The Department noted that gasoline dispensing equipment installed after that date may be subject to future regulations developed for GDFs. For owners and operators of GDFs with Stage II vapor control systems in place to meet the Stage II vapor recovery requirements, the Department continued to require operation and maintenance of those systems under § 129.82.

The Department presented the draft final-form Annex A to the Air Quality Technical Advisory Committee on April 8, 2021, and to the Small Business Compliance Advisory Committee on

May 19, 2021, and briefed the committees on the comments received on the proposed rulemaking. The Department presented the draft final-form Annex A to the Citizens Advisory Council's (CAC) Policy and Regulatory Oversight Committee on June 1, 2021. On the recommendation of the Policy and Regulatory Oversight Committee, on June 15, 2021, the CAC concurred with the Department's recommendation to present this final-form rulemaking to the Board for consideration. Advisory committee meetings are advertised and open to the public.

This final-form rulemaking is consistent with section 4.2(a) of the act (35 P.S. § 4004.2(a)), and is reasonably necessary to achieve and maintain the health-based and welfare-based 8-hour ground-level ozone NAAQS and to satisfy related CAA requirements in this Commonwealth. Decommissioning of Stage II vacuum assist vapor recovery systems is needed to avoid excess VOC and air toxic emissions. Vapor leak testing and related GDF emission control requirements are needed to protect against backsliding from emission reductions currently accounted for under the existing regulations.

#### *E. Summary of Final-Form Rulemaking and Changes from Proposed to Final-Form Rulemaking*

##### *§ 121.1. Definitions*

This final-form rulemaking revises § 121.1 to amend the terms “CARB Executive Order” and “gasoline dispensing facility” and adds the terms “decommission,” “monthly throughput,” “Phase I vapor recovery system,” “Phase II vapor recovery system,” “pressure/vacuum vent valve,” “Stage I enhanced vapor recovery system,” “Stage I vapor recovery system,” “Stage II vacuum assist vapor recovery system,” “Stage II vapor balance vapor recovery system,” “Stage II vapor recovery system,” “storage tank system,” “UMI,” “UMX,” “ullage,” and “underground storage tank” to support the amendments to Chapter 129.

The definition of “CARB Executive Order” is amended to expand the applicability of the term to include Executive Orders that CARB issues for Stage I equipment and other related equipment covered by this final-form rulemaking. The existing definition applied only to the Pennsylvania Clean Vehicles Program in Chapter 126, Subchapter D (relating to Pennsylvania clean vehicles program).

This final-form rulemaking adds a definition of “decommission” to describe the meaning of the term as it is used under § 129.82a. The definition relates to the process to disconnect a Stage II vapor recovery system.

This final-form rulemaking amends the definition of “gasoline dispensing facility” to clarify that it is a stationary source that contains a storage tank.

This final-form rulemaking adds the definition of “monthly throughput” to explain how to calculate monthly throughput to determine if a facility in the five-county Philadelphia or seven-county Pittsburgh area has met the throughput threshold that triggers leak monitoring requirements under § 129.61a and Stage II vapor recovery requirements under § 129.82. The definition is taken from the NESHAP at 40 CFR 63.11132 (relating to what definitions apply to this subpart?).

This final-form rulemaking adds the definition of a “Phase I vapor recovery system” because the term is used in a CARB test procedure title in § 129.61a(b)(4) of this final-form rulemaking. This CARB-derived definition means the same thing as the EPA-derived definition of the term “Stage I vapor recovery system” also added in this final-form rulemaking. Please see explanation of “Stage I vapor recovery system” as follows.

This final-form rulemaking adds the definition of a “Phase II vapor recovery system” because the term is used in a CARB executive order title in § 129.61a(e)(2) and (k)(3) and § 129.82(c)(1)(i) of this final-form rulemaking. This CARB-derived definition means the same thing as the EPA-derived definition of the term “Stage II vapor recovery system,” also added to this final-form rulemaking.

This final-form rulemaking adds the definition of “pressure/vacuum vent valve” to describe the operation and purpose of this component of a Stage I vapor recovery system.

This final-form rulemaking adds the definition of a “Stage I enhanced vapor recovery system” to explain that the system must have received the necessary certification as specified by the required CARB Executive Order. A Stage I enhanced vapor recovery system is a type of Stage I vapor recovery system.

This final-form rulemaking adds the definition of a “Stage I vapor recovery system” to describe the purpose and operation of the system. The definition also includes a “Phase I vapor recovery system” and “Stage I enhanced vapor recovery system.” See the previous explanations regarding the definition of these two terms.

This final-form rulemaking adds definitions of the two types of “Stage II vapor recovery systems.” The two systems are subject to different requirements in this final-form rulemaking. They are described as follows.

The first type of “Stage II vapor recovery system” is a “Stage II vacuum assist vapor recovery system.” The definition of this term describes the purpose and operation of the system to make a distinction between a vacuum assist system and the second type of system, namely a vapor balance system.

The definition of a “Stage II vapor balance vapor recovery system” describes the purpose and operation of the vapor balance system.

This final-form rulemaking adds the definition of a “Stage II vapor recovery system” to describe the purpose and operation of the system. The definition also refers to a “Phase II vapor recovery system.” See the previous explanation regarding the definition of “Phase II vapor recovery system.” The definition of “Stage II vapor recovery system” is amended in response to a comment from IRRC to specify that the term includes both a Stage II vacuum assist vapor recovery system and a Stage II vapor balance vapor recovery system.

This final-form rulemaking adds the definition of “storage tank system” because the term is used throughout §§ 129.61a and 129.82a. The definition is the definition for the term under § 245.1 (relating to definitions).

This final-form rulemaking adds the definition of “ullage” to describe the meaning of this technical word in the context of measuring the vapor leak rate from a gasoline storage tank system under § 129.61a(e)(2)(iv).

This final-form rulemaking adds the definitions of “UMI” and “UMX” to specify certification requirements for persons performing specified work on USTs under §§ 129.61a(q) and 129.82(e). The terms have the meanings as defined under the term “certification categories” under § 245.1.

This final-form rulemaking adds the definition of “underground storage tank” because the term is used under proposed §§ 129.61a and 129.82a. The proposed definition would be the definition for the term under § 245.1.

Aside from the previously noted change to the definition of a “Stage II vapor recovery system,” no other changes were made to the definitions from the proposed to this final-form rulemaking.

*§ 129.61. Small gasoline storage tank control (Stage I control).*

The amendments to § 129.61 in the final-form rulemaking make several clarifications. The amendments clarify the applicability of Stage I vapor recovery control requirements under subsection (a), the requirements for transferring gasoline from a tank truck into a gasoline storage tank at a GDF under subsection (b) and the requirements pertaining to gasoline tank truck dispensing tanks under subsection (c). The amendments remove the vapor disposal regulatory cross-references from subsection (b) because the requirements are adequately addressed under subsection (c). Subsection (c) clarifies that the dispensing tank of a gasoline tank truck must remain vapor tight at all times except that the dispensing tank may be opened after the vapors are properly disposed. The exception is needed for necessary actions surrounding maintenance and other operational requirements. The final-form rulemaking adds a new subsection (d) to inform the owner and operator of a gasoline storage tank subject to Stage I vapor recovery control requirements that the owner or operator may also be subject to the vapor leak monitoring and other requirements for small gasoline storage tank emission controls under § 129.61a.

The Board did not make any changes to § 129.61 of the rulemaking from proposed to final-form.

*§ 129.61a. Vapor leak monitoring procedures and other requirements for small gasoline storage tank emission control*

This final-form rulemaking adds § 129.61a to provide requirements for periodic and continuous vapor leak monitoring and related requirements applicable to the owner or operator of a GDF with a small gasoline storage tank in the 5-county Philadelphia or 7-county Pittsburgh area with a capacity of greater than 2,000 gallons. A “small gasoline storage tank” is defined in existing § 121.1 as a tank from which gasoline is dispensed to motor vehicle gasoline tanks.

Section 129.61a applies only to the 12 counties listed under subsection (a). These are the same 12 counties subject to the Stage II vapor recovery regulations, under § 129.82, described as follows. A GDF owner or operator, including a GDF owner or operator who decommissions Stage II vapor recovery equipment under § 129.82a, is required under § 129.61a, to monitor leaks and make repairs in the GDF's Stage I vapor control system similarly to how leaks are monitored and repaired at GDFs with Stage II vapor recovery systems under § 129.82.

Subsection (a) describes applicability. This subsection specifies that § 129.61a applies to the owner and operator of a gasoline storage tank with a capacity of greater than 2,000 gallons that is subject to the Stage I vapor recovery control requirements under § 129.61 only if the GDF is located in one of 12 counties in the five-county Philadelphia and seven-county Pittsburgh areas, and only if the monthly throughput of the GDF exceeds the applicable threshold specified under paragraph (1) or (2). The throughput thresholds in paragraphs (1) and (2) are the same as those under existing § 129.82, which in turn are based on section 182(b)(3)(A) of the CAA, (42 U.S.C.A. § 7511a(b)(3)(A)). The thresholds exclude GDFs with low throughputs and specify a higher throughput threshold under paragraph (2) for a GDF owned or operated by an independent small business marketer of gasoline, consistent with section 324 of the CAA (42 U.S.C.A. § 7625) (regarding vapor recovery for small business marketers of petroleum products). The GDFs below the monthly throughput threshold of 10,000 gallons in paragraph (1) account for less than 2% of total throughputs in the areas subject to this final-form rulemaking. Approximately one-third of GDFs in the areas subject to this final-form rulemaking have monthly throughputs below the 10,000 gallon threshold in paragraph (1). The cost-effectiveness of controlling GDFs below the threshold in paragraph (1) is very low in comparison to GDFs with throughputs at or above the applicability threshold in paragraph (1). See Section F of this preamble, and Questions 15, 16, 17 and 24 of the Regulatory Analysis Form for this final-form rulemaking, for more information on benefits and impacts of this final-form rulemaking to small businesses.

Paragraphs (1) and (2) of subsection (a) further explain that throughputs are assessed annually for determining applicability of § 129.61a, beginning with the calendar year that precedes the year in which this final-form rulemaking is published as a final regulation.

Subsection (a)(3) explains that once an affected GDF in the five-county Philadelphia or seven-county Pittsburgh area exceeds the throughput of paragraph (1) or (2) in a calendar year, it remains subject to § 129.61a even during times when the throughput falls below the threshold. This is consistent with the approach the EPA follows in the NESHAP. See 40 CFR 63.11111(i) (relating to Am I subject to the requirements in this subpart?). See Sections D, F and G in this preamble for further discussion of the NESHAP. This approach serves to avoid confusion for the purpose of compliance and enforcement.

Subsection (b) specifies the four CARB vapor recovery test procedures that the GDF owner or operator must follow to meet the vapor leak monitoring procedures under § 129.61a. This subsection specifies CARB test procedures because CARB staff have become the world's foremost experts on controlling emissions at GDFs. Regulatory bodies in the United States that require vapor leak monitoring predominantly rely on CARB test procedures. For example, the EPA, under section 4.2 of its Stage II Enforcement Guidance, requires Stage II vapor recovery systems to be CARB-approved or to be of equivalent quality. The nearby States of Delaware,

Maryland (for Baltimore City and 11 counties), New Jersey, and New York (for the New York and lower Orange County metropolitan areas) require GDF owners and operators to follow CARB testing requirements. See 7 Del. Code Regs. § 1124-36.0; Md. Code Regs. 26.11.24; N.J. Admin. Code § 7:27-16.3; and N.Y. Comp. Codes R. & Regs. Tit. 6, § 230.2. The owner or operator of a GDF may need to perform up to four of the listed CARB vapor recovery test procedures to monitor for leaks, namely (1) CARB TP-201.1E—Leak Rate and Cracking Pressure/Vacuum Vent Valves, (2) CARB TP-201.3—Determination of 2-Inch WC Static Pressure Performance of Vapor Recovery Systems of Dispensing Facilities, (3) CARB TP-201.3C—Determination of Vapor Piping Connections to Underground Gasoline Storage Tanks and (4) CARB TP-201.1B—Static Torque of Rotatable Phase I Adaptors.

Subsection (c) specifies a choice of two compliance options for satisfying monitoring requirements for GDF owners to comply with the vapor leak monitoring requirements under this section. The owner and operator of a GDF has the option to comply by using periodic or continuous vapor leak rate monitoring. For the periodic monitoring option, requirements under subsection (d) are to be followed. For the continuous monitoring option, requirements under subsections (e), (h), (i) and (j) are to be followed.

Subsection (d) applies to a GDF owner or operator who chooses to demonstrate compliance by using periodic vapor leak rate monitoring under subsection (c). Paragraph (1) requires the GDF owner or operator to conduct periodic vapor leak testing by following the following three CARB vapor recovery test procedures listed under subsection (b), namely TP-201.1E, TP-201.3 and TP-201.3C. The fourth CARB test procedure listed under subsection (b), TP-201.1B, is required if the UST is equipped with a rotatable adaptor. The test procedures must all be completed at least once during a 12-month period.

Paragraph (1)(i) specifies that the tests may be conducted simultaneously, consecutively or separately during the 12-month period. This is to allow owners and operators of GDFs flexibility in scheduling leak monitoring tests.

Subparagraphs (ii), (iii) and (iv), working in tandem, are meant to encourage GDF owners and operators to perform frequent visual leak monitoring inspections between annual leak tests and to make necessary repairs soon after a leak is detected. Subparagraph (ii) specifies that repairs may not be made to the Stage I vapor recovery system on the day that CARB TP-201.3 or CARB TP-201.3C is performed prior to completion of the test procedure. If a leak test fails, a repair to a component on, or a correction to, a vapor recovery system must be made within 10 days under subparagraph (iii). Subparagraph (iv) specifies that if a repair to a component on, or correction to, the Stage I vapor recovery system is needed to pass CARB TP-201.3 then CARB TP-201.3 must be conducted once every 6 months. The generally applicable once-in-every-12-month testing requirement may resume after two consecutive once-in-every-6-month period CARB TP-201.3 test procedures do not reveal a failure requiring a repair or correction. This requirement in the final-form rulemaking will encourage owners and operators to perform the required leak inspections on a regular basis and make the necessary repairs as vapor leaks occur. Periodic leak inspections at the GDF reduce the likelihood of an owner or operator having to conduct once-in-every-6-month testing.



Section 129.61a(d)(1) of the final-form rulemaking has been amended to add subparagraph (v) in response to two comments received on the proposed rulemaking. Subparagraph (v) has been added to specify that the existing CARB TP-201.1E, CARB TP-201.3, CARB TP-201.3C and CARB TP-201.1B leak tests must be performed by the GDF owners and operators within 1 year after the effective date of the final-form rulemaking and within 1 year thereafter. This paragraph provides clarity as to the effective date for when GDF owners and operators must begin conducting these tests.

Under subsection (d)(2), the recordkeeping requirements for each test procedure performed under paragraph (1) are listed. The recorded information allows the Department to track the leak rate monitoring performed and the associated action taken by the GDF owner or operator.

Subsection (e) applies to a GDF owner or operator who chooses to demonstrate compliance by using continuous vapor leak rate monitoring under subsection (c). Subsection (e) specifies the design, installation, operation and maintenance of a Stage I enhanced vapor recovery system and a continuous pressure monitoring system. Both systems are required to conduct continuous vapor leak rate monitoring.

Subsection (e)(1) specifies that a Stage I enhanced vapor recovery system must be certified by a CARB Executive Order. A CARB-certified Stage I enhanced vapor recovery system ensures a proper level of vapor tightness at a GDF to ensure that a continuous pressure monitor, required under subsection (e)(2), can work properly.

Subsection (e)(2) requires a continuous pressure monitoring system that meets specified CARB certification requirements. Subparagraphs (i) through (vi) specify the equipment and operational characteristics that the continuous pressure monitoring system needs to meet. CARB deems that by complying with these characteristics continuous pressure monitoring is at least as stringent as once-in-every-12-month leak monitoring conducted under CARB test procedures.

Subsection (f) applies to all GDF owners and operators who install a Stage I vapor recovery system under § 129.61a. Paragraph (1) specifies requirements for leak rate monitoring test procedures that are performed within 10 days of installation of the Stage I vapor recovery system. The GDF owner or operator needs to conduct and pass 3 leak rate monitoring CARB test procedures, TP-201.1E, TP-201.3 and TP201.3C. If the UST is equipped with a rotatable adaptor, the GDF owner or operator will need to conduct an additional test, TP-201.1B.

Subsection (f)(2) lists the recordkeeping requirements for each test procedure performed under paragraph (1). This information will allow the Department to track the leak rate monitoring performed and associated actions taken by the GDF owner or operator.

Subsection (f)(3) requires that the GDF owner or operator maintain onsite or electronically store allowing for onsite examination a copy of the CARB Executive Order issued for the Stage I enhanced vapor recovery system under subsection (e)(1). This will allow an inspector to determine if the proper equipment is installed at a facility that uses a continuous pressure monitoring system. This subsection has been revised from proposed to the final-form rulemaking in response to comments received to allow for GDFs to electronically store CARB Executive Orders and other records as long as they are readily available for onsite examination

during inspection. This revision reflects that owners and operators of GDFs utilize electronic technology as opposed to just paper documentation.

Subsection (f)(4) requires installation and maintenance of a pressure/vacuum vent valve on the atmospheric vent of a UST to prevent fugitive emissions when these emissions occur. Examples of when these emissions occur most are when the atmospheric pressure changes, when gasoline is not withdrawn from the UST for prolonged periods and when the GDF receives a gasoline delivery. This requirement will ensure that pressure/vacuum vent valves are installed at all times.

Subsection (g) applies to all GDF owners and operators who install a Stage I vapor recovery system under § 129.61a. Subsection (g) requires regular leak monitoring inspections. By following a schedule and examining potential problem spots where the vapor tightness of a Stage I vapor recovery system could easily become compromised, a person may prevent larger leaks. Larger leaks are often caused by the misuse or misoperation of a Stage I vapor recovery system and are usually apparent with a visual inspection. Small leaks, which are more difficult to discover, become large leaks over the course of several weeks or months and may be discovered by leak monitoring inspection.

Subsection (g)(1) requires the GDF owner or operator to inspect after each tank truck delivery some common sites on the Stage I vapor recovery system that may become compromised during a tank truck delivery.

Subsection (g)(2) requires the GDF owner or operator to inspect once per month components of the Stage I vapor recovery system that are less likely to be damaged during normal operation of the GDF. Subsection (g)(3) requires the GDF owner or operator to make a repair or correction to a failed component of the Stage I vapor recovery system as soon as possible before the next monthly inspection.

Subsection (g)(4) lists the needed recordkeeping requirements for each inspection of, and correction to, a Stage I vapor recovery system and repair to a failed component of a Stage I vapor recovery system under this subsection. These recorded items will allow the Department to track the leak rate monitoring performed, and associated actions taken, by the GDF owner or operator.

Subsection (h) applies to a GDF owner or operator who chooses the compliance option under subsection (c) of installing a continuous pressure monitor to perform leak monitoring. Subsection (h) specifies how a continuous pressure monitor must operate to be an equivalent form of leak monitoring as annual leak monitoring. This subsection specifies the operating parameters of the continuous pressure monitoring system, and related measurements, recordkeeping and record storage requirements, testing requirements and schedule for repairs. Subsection (h)(10) has been revised from proposed to the final-form rulemaking in response to comments received to allow for GDFs to electronically store records as long as they are readily available for onsite examination during inspection. This revision reflects that owners and operators of GDFs utilize electronic technology as opposed to just paper documentation.

Subsection (i) applies to a GDF owner or operator who chooses the compliance option under subsection (c) of installing a continuous pressure monitor to perform leak monitoring.

Subsection (i) specifies what actions must occur the first time the continuous pressure monitoring system determines that the vapor leak rate standard is exceeded. This subsection includes requirements for the GDF owner and operator and for operation of the continuous pressure monitoring system. This subsection requires the continuous pressure monitoring system to activate an alarm and directs the owner or operator to determine the cause of the vapor leak rate failure and take corrective action within 7 calendar days of the first exceedance alarm. The owner or operator must record relevant information pertaining to indication of vapor leak rate failure and corrective action taken. Paragraph (2)(i) authorizes a GDF owner or operator to turn off an alarm system without meeting the certification requirements of subsection (q) when a correction or repair is not required.

Subsection (j) applies to a GDF owner or operator who chooses the compliance option under subsection (c) of installing a continuous pressure monitor to perform leak monitoring. If the continuous pressure monitoring system determines that the vapor leak rate standard is exceeded within 7 calendar days following the correction made after the first alarm, this could be an indication of a problem with the continuous pressure monitor. Under subsection (j), a second alarm requires the owner or operator to reset the continuous pressure monitor and determine the cause of vapor leak rate failure and take corrective action within 7 calendar days of the alarm. The owner or operator is required to record the relevant information pertaining to indication of vapor leak rate failure and corrective action taken. Subparagraph (2)(ii)(A) and (B) specifies the qualification requirements for persons to make repairs or corrections.

Subsection (k) applies to an owner or operator of a GDF who does not have a Stage II vapor recovery system. Paragraph (1) specifies when a GDF owner or operator must replace conventional hoses with low permeation hoses. All GDF owners and operators must replace all conventional hoses with low permeation hoses within 2 years after the effective date of adoption of this final-form rulemaking. For all new gasoline dispensers at GDFs and all new GDFs, the owner or operator must install low permeation hoses on the dispensers upon installation of the dispensers. The low permeation hoses must be included on a specified component list in CARB Executive Order NVR-1-D or in an update or revision to the Executive Order.

Subsection (k)(2) specifies when a GDF owner or operator must replace conventional nozzles with enhanced conventional nozzles. Paragraph (2) requires that an owner or operator of an existing GDF replace conventional nozzles with enhanced conventional nozzles within 2 years after a *Pennsylvania Bulletin* notice is published indicating that the CARB Executive Officer issued an Executive Order to a second manufacturer for an enhanced conventional nozzle. For all new gasoline dispensers and GDFs that begin operation after the *Pennsylvania Bulletin* notice is published, the owner or operator must install enhanced conventional nozzles. The enhanced conventional nozzles must be included by the CARB Executive Officer on a specified component list in CARB Executive Order NVR-1-D or in any updates and revisions to the Executive Order.

Subsection (l) specifies additional requirements for GDF owners and operators. These requirements are best practices for maintenance of Stage I and Stage II vapor recovery systems. Although these additional requirements are currently codified only under § 129.82 for GDFs that have Stage II vapor recovery systems, they provide significant protections against vapor leaks and accidental spills that are equally important and applicable to all GDFs. They are listed in

subsection (l) because most GDFs with Stage II vapor recovery systems covered under § 129.82 will be decommissioning their Stage II vapor recovery systems under § 129.82a. Subsection (l)(3) has been revised from proposed to the final-form rulemaking in response to comments received to allow for GDFs to electronically store records as long as they are readily available for onsite examination during inspection. This revision reflects that owners and operators of GDFs utilize electronic technology as opposed to just paper documentation.

Subsection (m) requires that a GDF owner or operator keep records for 2 years including measurements made, leak rate failures observed and corrective actions taken in the relevant paragraphs and subparagraphs listed, unless a longer period is required under Chapter 127 (relating to construction, modification, reactivation and operation of sources). The records must be made readily available to the Department upon Department request or during an inspection and can be recorded in either written format or stored electronically for onsite examination. Subsection (m) has been revised to correct a cross-reference to § 129.61a(j)(2)(iii) pertaining to recordkeeping information for second exceedances of the allowable vapor leak rate. Subsection (m)(1) has also been revised from proposed to the final-form rulemaking in response to comments received to allow for GDFs to electronically store records as long as they are readily available for onsite examination during inspection. This revision reflects that owners and operators of GDFs utilize electronic technology as opposed to just paper documentation.

Subsection (n) requires a GDF owner or operator who chooses to demonstrate compliance by using continuous vapor leak rate monitoring under subsection (c)(2) to maintain onsite at the GDF or electronically stored allowing for onsite examination a copy of the valid CARB Executive Order for the enhanced Stage I vapor recovery system required under subsection (e)(1). Maintaining these documents onsite will facilitate the Department's inspections of the GDF. Subsection (n) has been revised from proposed to the final-form rulemaking in response to comments received to allow for GDFs to electronically store the CARB Executive Order and other records as long as they are readily available for onsite examination during inspection. This revision reflects that owners and operators of GDFs utilize electronic technology as opposed to just paper documentation.

Subsection (o) requires that the GDF owner or operator maintain onsite or electronically stored allowing for onsite examination at the GDF the CARB Executive Order required for low permeation hoses and enhanced conventional nozzles to facilitate the Department's inspections of the GDF. This subsection has been revised from proposed to the final-form rulemaking in response to comments received to allow for GDFs to electronically store CARB Executive Orders as long as they are readily available for onsite examination during inspection. This revision reflects that owners and operators of GDFs utilize electronic technology as opposed to just paper documentation.

Subsection (p) requires that the GDF owner or operator maintain onsite at the GDF or electronically stored allowing for onsite examination a copy of the record of the training schedule and written instructions required under subsection (l)(2) for the duration of the operation of the vapor recovery system. This subsection has been revised from proposed to the final-form rulemaking in response to comments received to allow for GDFs to electronically store records as long as they are readily available for onsite examination during inspection. This

revision reflects that owners and operators of GDFs utilize electronic technology as opposed to just paper documentation.

Subsection (q)(1) specifies that a person making corrections or repairs to a vapor recovery system must be appropriately certified under Chapter 245, Subchapters A and B (relating to general provisions; and certification program for installers and inspectors of storage tanks and storage tank facilities). This requirement was included to ensure that appropriately qualified individuals work on these potentially dangerous sources of emissions. Paragraph (2) exempts from this requirement a person when only performing a test specified under subsection (b), as opposed to a person performing installation or modification work.

Other than the amendments to §§ 129.61a(d)(1), (f)(3), (h)(10), (l)(3), (m), (n), (o) and (p), no other changes have been made to § 129.61a from the proposed to final-form rulemaking.

*§ 129.82. Control of VOCs from gasoline dispensing facilities (Stage II)*

Existing § 129.82 applies to GDFs in the Philadelphia and Pittsburgh areas that have a monthly gasoline throughput of at least 10,000 gallons or are independent small business marketers of gasoline with a monthly throughput at the GDF of at least 50,000 gallons.

The amendments to § 129.82 in the final-form rulemaking removes requirements for a GDF owner or operator in the five-county Philadelphia area or seven-county Pittsburgh area to install a Stage II vapor recovery systems. Removing requirements to install Stage II vapor recovery systems is consistent with allowing, and in some cases requiring, decommissioning of Stage II vapor recovery systems under § 129.82(a). The ORVR systems on the vast majority of vehicles in this Commonwealth are making Stage II vapor recovery systems obsolete. Section 129.82 also addresses requirements for GDF owners and operators in the 12 counties who retain their Stage II vapor recovery systems.

Subsection (a) specifies that § 129.82 is applicable in the 12 counties of the five-county Philadelphia and seven-county Pittsburgh areas. The amendments to this subsection remove Berks County from the list of covered counties under § 129.82 because Stage II was never implemented in Berks County (also referred to in this Preamble as the Reading moderate ozone nonattainment area). See Section D of this preamble, previously, for additional information on the EPA's 1994 ORVR rulemaking and its effect on moderate areas under section 202(a)(6) of the CAA and also for the explanation of the Department's decision not to implement Stage II vapor recovery requirements in Berks County.

Subsection (b) clarifies and updates the existing operating requirements that the GDF owner or operator must meet for an installed Stage II vapor recovery system until the system is decommissioned under § 129.82a. Subsection (b)(6) has been revised from proposed to the final-form rulemaking in response to comments received to allow for GDFs to electronically store records as long as they are readily available for onsite examination during inspection. This revision reflects that owners and operators of GDFs utilize electronic technology as opposed to just paper documentation.

Subsection (c) amends § 129.82 to remove requirements for additional areas to become subject to § 129.82. This subsection also removes requirements in existing subsection (d) which specify

that if an ORVR program is fully implemented by December 31, 2010, then the operation and maintenance of Stage II vapor recovery systems will no longer be required. The EPA's 2012 widespread use determination that allows states to allow decommissioning of Stage II vapor recovery systems renders this existing provision obsolete.

Subsection (c) also retains the requirement that GDF owners and operators comply with the functional testing and certification requirements in the EPA's Stage II enforcement and technical guidance documents. Subsection (c) designates the appropriate CARB functional and certification requirements for both a vapor balance system (paragraph (1)) and a vacuum assist system (paragraph (2)). Paragraph (3) specifies the schedule, frequency and recordkeeping requirements for the test procedures listed in paragraphs (1) and (2) and any possible repairs or corrections needed.

Subsection (d) informs a GDF owner or operator subject to § 129.82 that the owner or operator may also be subject to the vapor leak monitoring and other requirements for small gasoline storage tank emission controls under § 129.61a and the Stage II vapor recovery system decommissioning requirements under § 129.82a.

Other than the amendment to § 129.82(b)(6), no other changes have been made to § 129.82 of the rulemaking from the proposed to final-form.

#### *§ 129.82a. Requirements to decommission a Stage II vapor recovery system*

Section 129.82a specifies the correct way to decommission a Stage II vapor recovery system, who must decommission, decommissioning deadlines and recordkeeping requirements.

Subsection (a) establishes that this section applies to an owner and operator of a GDF that uses, has decommissioned or is decommissioning a Stage II vapor recovery system, including those who own or operate outside the 12 counties that are subject to § 129.82.

Subsection (b)(1) sets a deadline of December 31, 2022, for owners or operators of Stage II vacuum assist vapor recovery systems in the 12-county area to decommission their systems. This date was chosen because of the incompatibility between Stage II vacuum assist vapor recovery systems and ORVR systems. Using the EPA's Decommissioning Guidance methodology to estimate emissions that result from this incompatibility, the Department concluded that emissions will begin to increase in 2022 in all 12 counties. Paragraph (2) specifies that a GDF owner and operator operating a Stage II vapor balance vapor recovery system decommission under this section. This requirement was included to ensure that all decommissioning for both types of vapor recovery systems are completed correctly according to industry recommended practices.

Subsection (c) specifies the recommended practices for decommissioning. Paragraph (1) identifies the industry association's recommended practices, found in PEI/RP300-09 — The Petroleum Equipment Institute's "Recommended Practices for Installation and Testing of Vapor-Recovery Systems at Vehicle-Fueling Sites," Chapter 14, Decommissioning Stage II Vapor-Recovery Piping, sections 14.1 through 14.6.13, including applicable updates and revisions. The CARB test procedures in paragraphs (2) and (3) are included in the PEI guidance. The PEI's recommended practices for decommissioning are widely followed by the industry. In the EPA's

Decommissioning Guidance, the EPA notes that the PEI guidance “is especially instructive as it was developed by industry experts with a focus on regulatory compliance and safety. It contains the steps involved in dismantling Stage II hardware and applies to both balance and vacuum assist type systems.” Decommissioning Guidance, page 23.

Subsection (d) specifies the best practices and test procedures that need to be accomplished to decommission a Stage II vapor recovery system properly. In addition, a Department-approved form, 27-FM-BAQ1029, needs to be completed and sent to the Department to indicate that decommissioning was completed properly. The form must be kept onsite for 2 years unless other requirements require a longer duration of time. Subsection (d)(5) has been revised from proposed to the final-form rulemaking in response to comments received to allow for GDFs to electronically store records as long as they are readily available for onsite examination during inspection. This revision reflects that owners and operators of GDFs utilize electronic technology as opposed to just paper documentation.

Subsection (e) requires that a person performing work under this section be appropriately certified to a level specified in the Department’s Storage Tank program regulations under Chapter 245 (relating to administration of the Storage Tank and Spill Prevention Program) to help ensure that the work is performed correctly.

Subsection (f) removes the requirements for a GDF owner and operator to comply with § 129.82 after the Stage II vapor recovery system is decommissioned.

Subsection (g) informs GDF owners or operators statewide who have decommissioned a Stage II vapor recovery system under this section that they must also comply with the Stage I vapor recovery requirements under § 129.61.

Subsection (h) informs GDF owners or operators in the 12 counties who have decommissioned a Stage II vapor recovery system under this section that they must also comply with the vapor leak monitoring procedures and other requirements for small gasoline storage tank emission control under § 129.61a.

Other than the amendment to § 129.82a(d)(5), no other changes have been made to § 129.82a from the proposed to final-form rulemaking.

#### *F. Summary of Comments and Responses on the Proposed Rulemaking*

The Board adopted the proposed rulemaking at its meeting on May 19, 2020. The proposed rulemaking was published at 50 Pa.B. 5236 (September 26, 2020). Three virtual public hearings were held on October 27, 28, and 29, 2020, respectively. A 66-day public comment period closed on November 30, 2020.

Public comments were received from five commentators. No written comments were received from the Senate or House Environmental Resources and Energy Committees. On December 30, 2020, IRRC submitted comments to the Board. The comments received on the proposed rulemaking are summarized as follows and are addressed in a comment and response document which is available from the Department.

Public comments received from small and large businesses and an association were either supportive of the proposed rulemaking or asked the Board to make changes to specific provisions of the proposed rulemaking. A trade association expressed support and indicated that the proposed rulemaking would contribute to cost savings. A commentator and IRRC stated that the timeline to begin leak testing should be better described. A commentator and IRRC commented that the final-form rulemaking should clarify that CARB Executive Orders and other records may be electronically stored at gasoline dispensing facilities for inspection. IRRC commented that the Board needed to describe how small businesses would be notified of the testing certification requirements if they are not registered with the Department. A commentator suggested that the Board should incorporate into the final-form rulemaking 40 CFR Part 63, Subpart CCCCCC leak testing requirements for gasoline dispensing facilities in other areas of the Commonwealth. This requirement is already being enforced by the EPA and is outside the intended scope of the final-form rulemaking. A commentator suggested allowing only individuals obtaining a level of certification of either UTT, UMX, UMI, or IUM from the Department's Storage Tank Program to qualify to perform leak testing. Two commentators expressed concerns about motorists having difficulty operating ECO nozzles and that ECO nozzles cost more than other types of gasoline nozzles. A commentator stated that their company locations are reporting fewer minor drips and spills since converting to the ECO nozzles. A commentator stated that some of their customers have had difficulty operating the ECO nozzles, but the difficulty can be overcome with a little help from attendants.

In response to the comments, the Board has made two changes to clarify requirements in the final-form rulemaking. The Board amended § 129.61a(d)(1) to add subparagraph (v), which clarifies when existing and new leak testing is required to be conducted. New subparagraph (v) specifies that two test procedures, CARB TP-201.1E, TP-201.3, TP-201.3C and TP-201.1B will be required to be performed within one year of the effective date of the rule and annually thereafter. The Board also amended §§ 129.61a (f)(3), (h)(10), (l)(3), (m)(1), (n), (o) and (p), 129.82(b)(6) and 129.82a(d)(5), respectively, to allow the owner or operator of a gasoline dispensing facility to store CARB Executive Orders and other records electronically to demonstrate compliance during an inspection. The records must be readily available for onsite electronic examination by the Department upon request.

The Board did not make any other amendments to the final-form rulemaking in response to the other comments received. The Department will not require any of the certifications for vapor leak testers because none of the suggested certifications apply to vapor leak testers. The UTT certification for Underground Tightness Testers is a certification for liquid leak testers and is not suitable for vapor leak testers for several reasons. The Department does not believe that individuals performing vapor leak testing pose a significant safety risk to themselves or others. Leak testing takes place at ground level and above where there is adequate air circulation limiting the chance for combustion of volatile vapors. The leak tester would need to follow standard safety precautions followed by a motorist using the GDF. In addition, following the safety precautions specified in the pre-test procedures in the vapor recovery test procedure for TP-201.3 required to be followed in this final-form rulemaking will also greatly limit the chance of a safety risk. The final-form rulemaking requires an individual to obtain other types of certification, like UMI or UMX certification, for some types of work in this rulemaking involving cutting and capping connections below ground level where gasoline vapors may concentrate. The Department will conduct outreach to the regulated community to inform them



of the requirements in the final-form rulemaking. As a point of clarification, leak testers do not require certification as was erroneously stated in the proposed Regulatory Analysis Form. The Department will contact small businesses that perform work on USTs about the new requirements by placing a notice on DEP's public website; notifying all individuals who are registered in the Storage Tanks Program with an existing certification category of UTT, UMI or UMX; distributing a notice with trade organizations; and by contacting gasoline dispensing facilities in the 12 counties.

In response to the comments about ECO nozzles, the nozzles are a cost-effective control measure and consumers in other states have learned how to operate these nozzles. Regarding the issue of ECO nozzles getting stuck in vehicles, the Department stresses that the problem only affects model year 2015 through 2019 Dodge Ram vehicles. There is a method to extract the nozzle that works in most instances. The Board will keep the requirement for owners and operators of gasoline dispensing facilities to install ECO nozzles. The Board agreed with one commentator who stated that there are less minor drips at locations where his company uses ECO nozzles. The Department notes that the CARB staff believes that ECO nozzles are working better than their current emission performance standard.

IRRC stated during the comment period on the proposed rulemaking that the Board should address, in the Preamble and Regulatory Analysis Form, how the benefits of ECO nozzles outweigh the negative fiscal and environmental impacts. Another commentator stated that ECO nozzles could cause worse spills than conventional nozzles. The Board realizes that the cost of ECO nozzles will be more expensive than conventional nozzles, but the cost-effectiveness of requiring ECO nozzles is comparable to other VOC control measures. The cost-effectiveness of ECO nozzles controlling gasoline from entering the environment is approximately \$2,173 per ton averaged over all subject GDFs. Considering that VOC ERCs are nearly unavailable in the two areas subject to the final-form rulemaking and the ERCs would likely be priced at a premium to the cost-effectiveness of the ECO nozzle, ECO nozzles are a cost-effective control measure.

The requirements in the final-form rulemaking will allow owners and operators of GDFs to decommission Stage II vapor recovery equipment. Keeping Stage II vapor recovery equipment beyond 2022 will contribute to an increase in emissions. At the same time, the final-form rulemaking requirements will preserve elements of the Stage II program that will hold VOC emissions at their current level in the most populous areas of the Commonwealth. This will help this Commonwealth attain and maintain the 2008 and 2015 ozone standards.

## *G. Benefits, Costs and Compliance*

### *Benefits*

The amendments in this final-form rulemaking apply predominantly in the five-county Philadelphia and seven-county Pittsburgh areas, and therefore, these areas will experience most of the benefits of this final-form rulemaking. Downwind areas will also experience air quality benefits as a result of the final-form rulemaking.

The Department estimates that the owners and operators of as many as 1,981 locations in the five-county Philadelphia and seven-county Pittsburgh areas, combined, will be required to

comply with this final-form rulemaking. The Philadelphia area is home to 1,118 locations and the Pittsburgh area is home to 863 locations. Approximately 2,906 GDFs are in the Philadelphia and Pittsburgh areas; however, only facilities that have a throughput over 120,000 gallons of gasoline per year will be subject to the vapor leak monitoring procedures and other requirements for small gasoline storage tank emission control under new section 129.61a and will be subject to the clarified requirements for Stage II vapor recovery systems in the event they retain their vapor recovery systems (an option under this proposal only for Stage II vapor balance vapor recovery systems).

Approximately 538 and 368 businesses in the five-county Philadelphia and seven-county Pittsburgh areas, respectively, will be subject to this final-form rulemaking. Some double counting between the two areas will result when estimating total businesses, primarily due to large National companies operating in both areas. The number of double-counted businesses should not exceed more than 10 companies. The Department determined that approximately 642 of these GDFs are small businesses that will be affected by this final-form rulemaking. This was determined by subtracting the 278 GDFs with throughputs below the level that requires compliance with this final-form rulemaking from the total of 920 GDFs supplied by the Pennsylvania Small Business Development Center.

This final-form rulemaking maintains fugitive VOC emissions at nearly the same level as is credited in the Commonwealth's SIP. The Department has determined that the amount of gasoline throughput controlled by Stage I and Stage II vapor recovery equipment now stands at over 98.4% versus 96% claimed in the SIP. In-use control of fugitive emissions for Stage I and Stage II vapor recovery systems, which is control of fugitive emissions during filling of USTs and during vehicle refueling, will be held to nearly the same level under this final-form rulemaking as it has been held to under the existing regulations. Breathing losses, which are emissions that occur when air is ingested and expelled from the UST, are controlled by Stage II vapor recovery equipment. Stage II vapor recovery system testing requirements also reduce emissions of the Stage I vapor recovery system that may occur when the UST is filled, from tank breathing emissions (these are emissions that occur when air is ingested and expelled from the UST) that occur throughout the day and from emissions that occur from spills. The control efficiency that limits breathing losses ranges from a level of 86% to 92% (widespread use determination, 77 FR 28774) under this final-form rulemaking. The Department claimed 90% in its SIP. With the increase in the amount of gasoline throughput controlled by vapor recovery systems increasing from 96% to 98%, the in-use control will remain approximately the same as it has been, based on a conservative estimate using 86% in-use control ( $86\% * 98.4\% = 85\%$  total control versus  $90\% * 96\% = 86\%$ ).

Under § 129.61a of this final-form rulemaking, fugitive emissions will be kept at a lower level than could be achieved under the NESHAP. The Department estimates VOC emissions in 2021 will be lower by between 548 and 1,300 tons, and 375 tons and 880 tons, in the five-county Philadelphia and seven-county Pittsburgh areas, respectively. When low permeation hoses become required under § 129.61a(k) of the final-form rulemaking, their use will reduce evaporative emissions in the five-county Philadelphia and seven-county Pittsburgh areas by 200 tons per year. Similarly, according to the Department's estimates, the use of ECO nozzles under § 129.61a(k) will reduce annual evaporative emissions by 108 tons and 73 tons in the five-county Philadelphia and seven-county Pittsburgh areas, respectively, by reducing spills more than

conventional nozzles do. The use of ECO nozzles will also prevent an equal amount of gasoline from nozzle spills from reaching sources of surface and ground water.

Consumers will benefit from the reduced gasoline evaporation from hoses and the reduced gasoline evaporation and small spills from ECO nozzles. Although requiring low permeation hoses and ECO nozzles are the most expensive element of this final-form rulemaking to owners and operators of GDFs, consumers will save approximately \$407,000 a year from reduced gasoline evaporation when using low permeation hoses and ECO nozzles (estimated reduced evaporation from low permeation hoses and ECO nozzles of approximately 67,000 and 60,000 gallons, respectively, at \$3.20 a gallon).

This final-form rulemaking will lower emissions of ozone-contributing VOCs and air toxic pollution. The reduced emissions of VOCs in heavily populated urban areas is especially beneficial for reducing the formation of ground-level ozone. Typically, urban areas are VOC-limited, meaning that VOC emissions are more likely to be converted directly into ground-level ozone concentrations when VOCs are emitted into the atmosphere. Reduced air toxic pollution resulting from this final-form rulemaking will lower cancer risk among urban dwellers, and especially for people who work at or live near GDFs. Controlling VOC emissions from GDFs is a cost-effective control measure. For a GDF owner or operator, the cost of control equipment will be partially-to-totally offset, depending on the gasoline throughput of the GDF, by gasoline savings that are achieved by reducing evaporation and venting of gasoline into the atmosphere.

The reduction in spills and evaporation resulting from the use of low permeation hoses and ECO nozzles, alone, will reduce contamination of surface water and ground water, protecting the ecology of this Commonwealth's streams and their surrounding ecosystems. Fewer spills also means that less gasoline that could contact the skin of motorists refueling their vehicles. Chemical components of gasoline can, upon contact, penetrate human skin and underlying tissue. Given that some of gasoline's components have carcinogenic and mutagenic properties, this is undesirable.

As mentioned previously, the implementation of the VOC emission control measures in this final-form rulemaking predominantly benefits the health and welfare of the inhabitants of the five-county Philadelphia and the seven-county Pittsburgh areas as well as any inhabitants that experience the deleterious effects of pollutants transported from these areas. Numerous animals, crops, ecosystems and natural areas of this Commonwealth should also be positively affected.

Exposure to high concentrations of ground-level ozone is a serious human and animal health and welfare threat, causing respiratory illnesses and decreased lung function as well as other adverse health effects leading to a lower quality of life. Reduced ambient concentrations of ground-level ozone will reduce the incidences of hospital admissions for respiratory ailments, including asthma, and will improve the quality of life for citizens overall. While children, the elderly and those with respiratory problems are most at risk, even healthy individuals may experience increased respiratory ailments and other symptoms when they are exposed to high levels of ambient ground-level ozone while engaged in activities that involve physical exertion. High levels of ground-level ozone affect animals, including pets, livestock and wildlife, in ways similar to humans.

In addition to causing adverse human and animal health effects, the EPA has concluded that high levels of ground-level ozone affect vegetation and ecosystems leading to the following: 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. 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. These effects 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, and reduced visibility on roadways and in natural areas.

The implementation of the control measures in this final-form rulemaking will assist the Department in preventing increases in the level of VOC emissions from GDF activities locally and reduce the resultant local formation of ground-level ozone and the transport of VOC emissions and ground-level ozone to downwind areas, including other States. This final-form rulemaking is reasonably necessary to attain and maintain the health-based and welfare-based 8-hour ozone NAAQS and to satisfy related CAA requirements in this Commonwealth.

The monetized health benefits to residents in this Commonwealth and the economic benefits to agricultural, hardwoods and tourism industries in this Commonwealth as a result of attaining and maintaining the ground-level 8-hour ozone NAAQS, achieved in part through maintaining the reduced emissions of ozone precursors at GDFs, are considerable in comparison to the costs that will be incurred by the owners and operators of GDFs to comply with this final-form rulemaking. The EPA has estimated the monetized health benefits of attaining the 2008 and 2015 ozone NAAQS. The EPA estimated that the monetized health benefits of attaining the 2008 8-hour ozone NAAQS of 0.075 ppm range from \$2 billion to \$17 billion on a National basis by 2020. See "Fact Sheet, Final Revisions to the National Ambient Air Quality Standards for Ozone," available at [https://www.epa.gov/sites/production/files/2015-08/documents/ozone\\_fact\\_sheet.pdf](https://www.epa.gov/sites/production/files/2015-08/documents/ozone_fact_sheet.pdf). Approximately 140 million Americans live in areas affected by unhealthy levels of ozone pollution and approximately 8 million Pennsylvanians live in areas with unhealthy ozone pollution. Prorating that benefit to this Commonwealth, based on population, results in a public health benefit of \$113 million to \$965 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. See "Regulatory Impact Analysis of the Final Revisions to the National Ambient Air Quality Standards for Ground-Level Ozone," September 2015. Prorating that benefit to this Commonwealth, based on these population estimates, results in a public health benefit of \$86 million to \$257 million. These estimated monetized health benefits will not all result from the implementation of this final-form rulemaking, but the EPA estimates are indicative of the benefits to residents in this Commonwealth of attaining and maintaining 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.

### *Compliance costs*

This final-form rulemaking requires GDF owners and operators to decommission Stage II vacuum assist vapor recovery systems and authorizes GDF owners and operators to decommission Stage II vapor balance vapor recovery systems. The costs for decommissioning under § 129.82a includes costs for: dispenser decommissioning, low permeation hose kits with ECO nozzles, conventional adaptors, vapor leak tests, tie tank tests, static torque tests if the GDFs are equipped with a rotatable adaptor, and administrative fees. The total decommissioning cost was reduced by an estimated amount that the business owner receives for a tax deduction for performing the work. It was assumed that the business owner would receive at least 30% of the total costs of testing and repair due to deductions from Federal, State and local taxes. Based on this methodology, the cost of decommissioning, as stated by industry sources, is approximately \$4,000 to \$6,000 per GDF, depending mostly on the number of dispensers (assuming approximately 6—10 dispensers at a GDF). After decommissioning gasoline dispensers equipped with Stage II vapor recovery equipment, the reduced costs of repairs associated with non-Stage II dispensers should pay for the cost of decommissioning in approximately 2 years.

The annual amount of cost savings due to reduced repairs for Stage II vapor recovery systems after decommissioning ranges from \$2,100 to \$3,400 per GDF. Total savings that result from the reduced need to repair Stage II vapor recovery equipment amounts to approximately \$5.1 million a year (12,316 gasoline dispensers \* \$600 and adjusted for a 30% tax deduction).

Repairs under this final-form rulemaking are estimated to cost the owners and operators \$1.5 million more than the repairs under the NESHAP. Most of the increase in repair costs can be attributed to increased replacement costs of low permeation hoses and ECO nozzles, under § 129.61a(k). These costs will be offset by gasoline savings from reduced evaporation in the range of \$1.3 million to \$2.3 million per year. (Benefits of low permeation hoses and ECO nozzles to consumers are previously described under Benefits.)

The Department expects that annual vapor leak testing under § 129.61a of the final-form rulemaking will cost approximately \$600 for each facility each year or approximately \$1 million for all GDFs subject to this final-form rulemaking (((\$750 a year testing costs \* 1,981 GDFs subject to final-form rulemaking) – (\$165 a year for testing costs \* 817 GDFs subject to NESHAP) = \$1.35 million) \* 0.7 factoring a 30% tax deduction for the increased costs equals approximately \$1.0 million). Increased annual repair costs will likely average \$500 or less per GDF (\$1.0 million/1,981 GDFs). These repairs include replacing the P/V vent valves, broken hoses and nozzles and other repairs to underground piping. It was assumed that the vapor leak testing and repair costs will increase approximately 2% per year. The total annual repair costs for hose kits under § 129.61a are estimated to be \$1.1 million more than for compliance with the NESHAP, which does not require low permeation hoses and ECO nozzles (Replacing low permeation hoses and ECO nozzles under this final-form rulemaking will cost approximately \$2.8 million annually and, replacing conventional hoses and nozzles under the NESHAP will cost approximately \$1.2 million. The difference of \$1.6 million minus a 30% tax deduction for businesses results in the \$1.1 million extra cost). These costs will be offset by cost savings to GDF owners and operators. By Department estimates, vapor leak testing and performing necessary repairs reduces gasoline evaporation and limit evaporation losses from USTs between \$400 and \$6,000 per year. The regulated community will save from \$1.3 million to \$2.3 million

through reducing gasoline evaporation by reducing leaks. The estimated annual financial impact on potentially affected GDF owners and operators, including small businesses, when accounting for reduced Stage II vapor recovery equipment repair costs that will occur after decommissioning, could range from an average annual savings of \$1,450 to \$7,950 per GDF, excluding the one-time cost of decommissioning, which averages approximately between \$4,000 and \$6,000 per GDF.

Under the final-form amendments, individuals who perform UST system inspection, installation or repair will need to be appropriately certified as either a UMI or UMX storage tank installer. Certification training and testing requires costs approximately \$800 and takes 2 days to complete. There are 358 individuals certified as UMX and 12 individuals certified as UMI UST installers in this Commonwealth. A concern was raised by IRRC during the comment period as to how the Department would notify small businesses that perform decommissioning, install, modify, test, or repair of newly required level of certification. As a point of clarification, leak testers do not require certification. The Department will contact small businesses that perform work on USTs about the new requirements by placing a notice on DEP's public website; notifying all individuals who are registered in the Storage Tanks Program with an existing certification category of UTT, UMI or UMX; distributing a notice with trade organizations; and by contacting gasoline dispensing facilities in the 12 counties.

The projected changes in reporting, recordkeeping and other administrative costs are de minimis under this final-form rulemaking. The vapor leak rate inspections that will be required to be performed at the GDF under § 129.61a(d) differ only slightly from the vapor leak rate inspections required under existing § 129.82 and the NESHAP. Under existing § 129.82(e), GDF staff must visually inspect Stage I and Stage II vapor recovery equipment as a best maintenance practice. A periodic inspection under § 129.61a(g)(2) will take one person less than 15 minutes to complete. Section 129.61a(g)(1) requires GDF staff to visually inspect components that often either break or remain open after a gasoline delivery is made. This visual inspection requires approximately 5 minutes of GDF staff time for each gasoline delivery. Deliveries may occur each day or once every several days. An inspection report of basic information will need to be completed under § 129.61a(g)(3). This should take approximately 5 minutes or less, and could possibly be completed during the visual inspections. Training of staff at the GDF could be accomplished on-the-job.

The owner of the GDF will need to determine whether purchasing a continuous pressure monitor is less of a financial burden than performing annual vapor leak testing. The benefits of purchasing, installing and operating a continuous pressure monitoring system are dependent on several factors, such as the GDF gasoline throughput and the equipment already installed at the GDF. For example, GDFs with larger throughputs and a higher propensity to lose gasoline to evaporation could benefit from the continuous pressure monitor's ability to identify leaks as they occur. The continuous pressure monitoring system is an add-on feature of the automatic tank gauging system. Most, if not all, GDFs have installed automatic tank gauging systems. The continuous pressure monitor system will likely cost between \$5,000 and \$8,000 to install. Potential benefits for a GDF to install a continuous pressure monitoring system would be to not have gasoline sales restricted once or twice a year because the UST is being leak tested and to forego the expense of leak testing itself. A GDF owner or operator will need to take many

factors into account to determine whether installing a continuous pressure monitoring system is a more cost-effective solution than conducting periodic vapor leak testing at the GDF.

#### *Compliance assistance plan*

The Department plans to educate and assist the public and regulated community in understanding the requirements and how to comply with them. This will be accomplished through the Department's ongoing compliance assistance program.

#### *Paperwork requirements*

Owners or operators of GDFs who decommission Stage II vapor recovery equipment will have minimal new recordkeeping and reporting requirements under this final-form rulemaking. Upon decommissioning under § 129.82a, the owner or operator will be responsible for informing the Department by sending a completed form 2700-FM-BAQ0129, Stage II Vapor Recovery Decommissioning Notification Form. This form requires a certified installer to declare that decommissioning was carried out properly. This form will need to be sent to the appropriate Department Regional Office, the Philadelphia Air Management Services or the Allegheny County Health Department. Sections of this final-form rulemaking specify in greater detail what records need to be kept. The paperwork requirements associated with this final-form rulemaking set forth the information that is needed in an inspection report to properly inform Department personnel that a vapor leak occurred, when it occurred, the nature of the leak, any associated repair or corrective action taken, and who performed the repair or correction.

#### *H. 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 final-form rulemaking allows owners and operators of GDFs to decommission Stage II vapor recovery systems under § 129.82a. This will reduce overall excess VOC emissions resulting from incompatible Stage II vacuum assist vapor recovery systems and ORVR systems. Without § 129.61a, owners and operators of GDFs with a gasoline throughput between 10,000 gallons and 100,000 gallons a month would no longer be required to vapor leak test or repair their equipment because the NESHAP does not contain this requirement. Under the NESHAP, the owners and operators of large GDFs (those with a gasoline throughput equal to or greater than 100,000 gallons a month) are only required to perform vapor leak testing and repair every 3 years. Implementation of the VOC emission control measures in the five-county Philadelphia and seven-county Pittsburgh areas under § 129.61a will require annual leak testing and repair and will maintain VOC emissions at a level comparable to that achieved currently by Stage II vapor recovery system control. This final-form rulemaking will keep emissions lower than

levels that could be achieved under the NESHAP. In comparison to the NESHAP, the final-form rulemaking would result in additional VOC emission reductions in 2021 between 548 and 1,300 tons, and 375 tons and 880 tons, in the five-county Philadelphia and seven-county Pittsburgh areas, respectively. The implementation of this final-form rulemaking will also achieve approximately an 86% control efficiency of hazardous air pollutants emitted from GDFs. These estimated reductions in VOC emissions and the subsequent reduced formation of ozone helps ensure that citizens and the environment of this Commonwealth will experience the benefits of improved air quality. Commonwealth residents will also potentially benefit from improved surface water and groundwater quality through reduced gasoline spills and toxic chemical releases.

The implementation of this final-form rulemaking will limit the evaporation of gasoline from USTs. This final-form rulemaking provides a cost-effective way to limit VOC emissions into the atmosphere.

#### *I. Sunset Review*

The Board is not establishing a sunset date for this final-form rulemaking since it is needed for the Department to carry out its statutory authority. The Department will continue to closely monitor this final-form rulemaking for effectiveness and recommend updates to the Board as necessary.

#### *J. Regulatory Review*

Under section 5(a) of the Regulatory Review Act (71 P.S. § 745.5(a)), on September 17, 2020, the Department submitted a copy of the proposed rulemaking and a copy of a Regulatory Analysis Form to IRRC and to the Chairpersons of the House and Senate Environmental Resources and Energy Committees for review and comment.

Under section 5(c) of the Regulatory Review Act, IRRC and the House and Senate Committees were provided with copies of the comments received during the public comment period, as well as other documents when requested. In preparing this final-form rulemaking, the Department has considered all comments from IRRC, the House and Senate Committees and the public.

Under section 5.1(j.2) of the Regulatory Review Act (71 P.S. § 745.5a(j.2)), on                     , 2021, this final-form rulemaking was deemed approved by the House and Senate Committees. Under section 5.1(e) of the Regulatory Review Act, IRRC met on                     , 2021, and approved this final-form rulemaking.

#### *K. Findings of the Board*

The Board finds that:

(1) Public notice of proposed rulemaking was given under sections 201 and 202 of the act of July 31, 1968 (P.L. 769, No. 240) (45 P.S. §§ 1201 and 1202), referred to as the Commonwealth Documents Law, and regulations promulgated thereunder, 1 Pa. Code §§ 7.1 and 7.2 (relating to notice of proposed rulemaking required; and adoption of regulations).



(2) At least a 60-day public comment period was provided as required by law and all comments were considered.

(3) This final-form rulemaking does not enlarge the purpose of the proposed rulemaking published at 50 Pa.B. 5236.

(4) These regulations are reasonably necessary and appropriate for administration and enforcement of the authorizing acts identified in section C of this order.

(5) These regulations are reasonably necessary to attain and maintain the 2008 and 2015 ozone NAAQS by and to satisfy related CAA requirements.

#### *L. Order of the Board*

The Board, acting under the authorizing statutes, orders that:

(a) The regulations of the Department, 25 Pa. Code Chapters 121 and 129, are amended by adding §§ 129.61a and 129.82a and amending §§ 121.1, 129.61 and 129.82 to read as set forth in this final-form rulemaking.

(b) The Chairperson of the Board shall submit this final-form rulemaking to the Office of General Counsel and the Office of Attorney General for review and approval as to legality and form, as required by law.

(c) The Chairperson of the Board shall submit this final-form rulemaking to IRRC and the House and Senate Committees as required by the Regulatory Review Act (71 P.S. §§ 745.1—745.14).

(d) The Chairperson of the Board shall certify this final-form rulemaking and deposit it with the Legislative Reference Bureau as required by law.

(e) This final-form rulemaking will be submitted to the EPA as a revision to the Commonwealth's SIP.

(f) This order shall take effect immediately upon publication in the *Pennsylvania Bulletin*.

PATRICK McDONNELL,  
*Chairperson*