Regulatory Analysis Form

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INDEPENDENT REGULATORY REVIEW COMMISSION

(1) Agency:
Environmental Protection

(2) Agency Number: 7

Identification Number: 525

IRRC Number**: 3266**

(3) PA Code Cite: 25 Pa. Code Chapters 121 and 129

(4) Short Title: Control of VOC Emissions from Gasoline Dispensing Facilities (Stage I and Stage II)

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(6) Type of Rulemaking (check applicable box):

- ☐ Proposed Regulation
- ☒ Final Regulation
- ☐ Final Omitted Regulation
- ☐ Emergency Certification Regulation
  - ☐ Certification by the Governor
  - ☐ Certification by the Attorney General

(7) Briefly explain the regulation in clear and nontechnical language. (100 words or less)

This final-form rulemaking amends regulations relating to control of volatile organic compound (VOC) emissions at gasoline dispensing facilities (GDFs) during loading of GDF underground gasoline storage tanks ("Stage I" vapor recovery), during filling of motor vehicles at the pump ("Stage II" vapor recovery), and during and after decommissioning of Stage II vapor recovery equipment. This final-form rulemaking requires owners and operators of GDFs in the 5-county Philadelphia and 7-county Pittsburgh areas to remove or decommission Stage II vacuum assist vapor recovery equipment while preserving effective emission controls. The final-form rulemaking will allow owners and operators of GDFs the option to remove or decommission vapor balance vapor recovery equipment.

The Department will submit the final regulations to the United States Environmental Protection Agency (EPA) for approval as a revision to the Commonwealth's State Implementation Plan (SIP), codified at 50 CFR 51.2020(c)(1).

(8) State the statutory authority for the regulation. Include <u>specific</u> statutory citation.

This final-form rulemaking is authorized under section 5(a)(1) of the Air Pollution Control Act (APCA) (35 P.S. § 4005(a)(1)), which grants the Environmental Quality Board (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 APCA (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).

(9) Is the regulation mandated by any federal or state law or court order, or federal regulation? Are there any relevant state or federal court decisions? If yes, cite the specific law, case or regulation as well as, any deadlines for action.

No. This final-form rulemaking is not mandated by Federal law, State law, court order or Federal regulation. The existing Stage II vapor recovery regulations (namely § 129.82 (relating to control of VOCs from gasoline dispensing facilities (Stage II)) were mandated under the CAA when adopted by the Board in 1992 (22 Pa.B. 585 (February 8, 1992)) and when amended in 1999 (29 Pa.B. 1889 (April 10, 1999))[1] but are no longer mandated under the CAA. Please see more detailed description in response to Question 10, below.

(10) State why the regulation is needed. Explain the compelling public interest that justifies the regulation. Describe who will benefit from the regulation. Quantify the benefits as completely as possible and approximate the number of people who will benefit.

This final-form rulemaking is needed to control excess emissions into the atmosphere of VOCs 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. This final-form rulemaking also controls excess air toxics (including benzene) emitted from gasoline at GDFs. Air toxics are hazardous air pollutants. Stage I and Stage II vapor recovery requirements are designed to reduce VOC emissions; however, many Stage II vapor recovery systems now *cause* the release of VOCs because of the prevalence of vapor recovery systems in vehicles. Therefore, these Stage II vapor recovery systems must be decommissioned – and emissions from and after decommissioning must be well-controlled.

The benefits of Stage II vapor recovery requirements under this final-form rulemaking extend beyond reducing emissions when motorists fill their gas tanks. Stage II vapor recovery testing requirements also reduce emissions of the Stage I vapor recovery system that may occur when the underground storage tank (UST) is filled, from tank breathing emissions (i.e. emissions that occur when air is ingested and expelled from the UST) that occur throughout the day and from emissions that occur from spills.

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 oxides of nitrogen (NO_X) in the presence of sunlight. Ozone is a chemical that oxidizes tissue in the respiratory track when inhaled. Repeated exposure to ozone pollution may cause permanent damage to the lungs. Even when ozone is present in low levels, inhaling it triggers a variety of health problems, including chest pains, coughing, nausea, throat irritation and congestion. Exposure to ozone can also worsen symptoms of bronchitis, heart disease, emphysema and asthma, and can reduce lung capacity. Asthma is a significant and growing health threat to children and adults. And, ozone can aggravate asthma, causing more asthma attacks, increased use of medication, more medical treatment and more frequent visits to hospital emergency clinics.

Numerous animals, crops, ecosystems and natural areas of this Commonwealth should also be positively affected by this final-form rulemaking. High levels of ground-level ozone affect animals, including pets,

[1] There is one minor exception to this statement. By the time of the 1999 rulemaking, the Commonwealth was no longer required under the CAA to have a Stage II vapor recovery program in Berks County. This was the result of EPA promulgating regulations in 1994 for vapor recovery systems on vehicles. This is explained below under the subheading, *Congress created off-ramps that States can use now that the EPA has made a widespread use determination*, and in the Preamble to this final-form rulemaking under Section D, under the subheading, *Stage II vapor recovery – Regulatory, statutory and SIP history*. Although Stage II vapor recovery requirements were no longer required for Berks County under the CAA, the Department retained them in the regulation.

livestock and wildlife, in ways similar to humans. See Section F of the Preamble to this final-form rulemaking, under the subheading, *Benefits, Costs and Compliance,* for more information on these secondary impacts of ozone pollution.

In addition, gasoline vapors also contain chemicals deemed to be hazardous air pollutants. People exposed to toxic air pollutants at sufficient concentrations and durations may have an increased chance of getting cancer or experiencing other serious health effects. These health effects can include damage to the immune system, as well as neurological, reproductive, developmental, respiratory and other health problems.

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. The Commonwealth has relied upon emission reductions of VOCs at GDFs to help achieve its clean air goals. For example, the Department used the emission reductions achieved from the Stage II vapor recovery regulations to help demonstrate attainment and maintenance with the National Ambient Air Quality Standards (NAAQS) for ozone and fine particulate matter ($PM_{2.5}$). These emission reductions are incorporated into SIP revisions for the Philadelphia and Pittsburgh areas.

The 5-county Philadelphia and 7-county Pittsburgh areas are the most challenging areas in this Commonwealth to bring into attainment of, and to maintain, the NAAQS for ground-level ozone. Stage II vapor recovery controls went into effect in the 12 counties because these areas were originally designated as moderate nonattainment areas or above for the ozone NAAQS. Ambient ozone concentrations in these areas either exceed or remain close to the current ozone NAAQS. The Commonwealth is requiring decommissioning of Stage II vapor recovery systems to eliminate excess emissions caused by: (1) incompatibility between emission control equipment and (2) defaulting to triennial leak testing required by the federal leak testing requirements instead of annual vapor leak testing. By far, the largest emission reductions due to this final-form rulemaking will occur by retaining annual vapor leak testing requirements pertaining to the Stage II program. This will help lower monitored concentrations of ozone in the two areas below the existing standard and potentially below any updated ozone standard. The requirements in this final-form rulemaking are similar to Stage II vapor recovery requirements in surrounding Ozone Transport Region (OTR) states. Some of these neighboring OTR states have likewise kept certain Stage II vapor recovery requirements in areas with the highest ambient ozone concentrations. This final-form rulemaking meets a compelling public interest in reducing and avoiding the release of harmful air pollutants that Stage I and Stage II vapor recovery systems were designed to prevent.

Ozone pollution in Pennsylvania.

The EPA is responsible for establishing NAAQS for six "criteria" pollutants considered harmful to public health and welfare, including the environment. The six are ground-level ozone, particulate matter, NO_X, carbon monoxide, sulfur dioxide and lead. Section 109 of the CAA (42 U.S.C.A. § 7409) (relating to National primary and secondary ambient air quality standards) 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.

The EPA requires each state to bring areas that are not attaining the ozone NAAQS into attainment of increasingly stringent standards since 1979. In 1979, the EPA promulgated the first NAAQS for ground-level ozone. It was 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 revoked it and promulgated a new NAAQS based on an 8-hour average of 0.08 ppm (or 84 parts per billion (ppb)). See 62 FR 38855 (July 18, 1997). 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 (or 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) (relating to air quality control regions), 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.

VOC emission reductions that are achieved following the implementation of this final-form rulemaking will allow the Commonwealth to make progress in attaining and maintaining the 2008 and 2015 8-hour ozone NAAQS.

Monetized public health benefits of attaining the 2008 and 2015 ozone NAAQS.

The monetized health benefits to residents, and the economic benefits to agricultural, hardwoods and tourism industries in Pennsylvania 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 under this final-form rulemaking, are considerable in comparison to the costs incurred by the owners and operators of GDFs to comply with this final-form rulemaking.

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."[2] 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 these population estimates, 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," EPA Office of Air and Radiation, EPA-452/R-15-007, September 2015. Prorating that benefit to this Commonwealth, based on population, results in a public health benefit of $86 million to $257 million. The implementation of this final-form rulemaking will not result in all of these estimated monetized health benefits, but the EPA estimates are indicative of the benefits to residents of Pennsylvania 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.

Stage I and Stage II vapor recovery systems.

A "Stage I" vapor recovery system includes equipment and components that control the emission into the atmosphere of gasoline vapors during the transfer of gasoline from a gasoline tank truck to a gasoline UST 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. Stage I vapor recovery remains important as an air quality measure and for that reason is being retained and updated in this final-form rulemaking.

A "Stage II" vapor recovery system includes equipment and components that control the emission into the atmosphere of vapors during the transfer of gasoline from a gasoline UST 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 were also designed to eliminate the influx of air into 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.

[2]As seen in the factsheet https://www.epa.gov/sites/production/files/2015-08/documents/ozone_fact_sheet.pdf

Stage I and Stage II vapor recovery requirements were designed to reduce air pollution.

The Commonwealth first adopted Stage I (9 Pa.B. 1447 (April 27, 1979))[3] and Stage II (1992)[4] vapor recovery regulations while the 1979 1-hour ozone NAAQS was in place. The Stage I and Stage II vapor recovery regulations were designed to assist the Commonwealth in attaining the Federal ozone standards. Stage I vapor recovery systems, and some Stage II vapor recovery systems, still reduce ozone pollution.

With regard to Stage II vapor recovery regulations, the Board proposed section 129.82 in 1980 (20 Pa.B. 3174 (June 16, 1990)) following similar actions by other States (for more information, see Section D of the Preamble for this final-form rulemaking under the subheading, *Stage II vapor recovery – Regulatory, statutory and SIP history*) and finalized section 129.82 in response to Congressional action. In 1990, Congress amended the CAA to help reduce ground-level ozone across the Nation.[5] In its amendments, Congress included requirements that (1) States adopt, and submit to the EPA, SIP revisions containing requirements for the installation and operation of a system for gasoline vapor recovery of emissions from the fueling of motor vehicles, and (2) the EPA Administrator issue guidance on the effectiveness of Stage II vapor recovery systems. See section 182(b)(3) of the CAA, 42 U.S.C.A. § 7511a(b)(3) (relating to plan submissions and requirements). In response, the EPA issued "Enforcement Guidance for Stage II Vehicle Refueling Control Programs," EPA Office of Air and Radiation, October 1991; and "Technical Guidance – Stage II Vapor Recovery System for Control of Vehicle Refueling Emissions at Gasoline Dispensing Facilities," EPA – 450/3-91-022a, November 1991.

The Board finalized its initial Stage II vapor recovery regulations in 1992, with amendments following in 1999, as explained in response to Question 9, above. The regulations allow for both types of Stage II vapor recovery technologies: (1) vapor balance and (2) vacuum assist. These two technologies work in different ways. 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.

ORVR systems were also designed to reduce air pollution, but Stage II vacuum assist vapor recovery systems are incompatible with vehicle onboard refueling vapor recovery systems and may cause air pollution when used with an ORVR system.

In the 1990 CAA amendments mentioned above, Congress also required that the EPA Administrator promulgate standards for onboard refueling vapor recovery (ORVR) systems for the control of vehicle fueling emissions. This requirement is in section 202(a)(6) of the CAA, 42 U.S.C.A. § 7521(a)(6) (relating to emission standards for new motor vehicles or new motor vehicle engines). Though the ORVR systems were designed to reduce air pollution, Stage II vacuum assist vapor recovery systems are incompatible with ORVR systems and may cause air pollution when used with an ORVR system.

The incompatibility occurs because a Stage II vacuum assist vapor recovery system mostly returns fresh air, not gasoline vapors, into the UST. Nearly all the gasoline vapors are captured by the vehicle's ORVR system. Consequently, 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, and preserves the integrity and prevents damaging the UST, preventing underground leaks.

Automobile manufacturers met a phased-in schedule for installing ORVR systems in gasoline-fueled vehicles starting in 1998. In 2012, the EPA determined that ORVR systems are in widespread use nationally throughout the motor vehicle fleet. See 77 FR 28772 (May 16, 2012) (widespread use determination).[6] 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. While the widespread use of ORVR systems is a success story, an incompatibility between Stage II "vacuum assist" vapor recovery systems and ORVR systems will soon create an emissions disbenefit in this Commonwealth and elsewhere in the United States.

Congress created off-ramps that States may use now that the EPA has made a widespread use determination.

When Congress amended the CAA in 1990 to require Stage II vapor recovery systems and ORVR systems, Congress realized that ORVR systems would eventually replace the need for Stage II vapor recovery systems, so Congress enacted off-ramps. Congress did this by building into section 202(a)(6) of the CAA 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 promulgation occurred in 1994).[7] For serious and worse nonattainment areas, Congress authorized the EPA Administrator under section 202(a)(6) of the CAA (42 U.S.C.A. § 7521(a)(6)) to revise or waive, by rule, the section 182(b)(3) of the CAA Stage II vapor recovery requirements for serious, severe and extreme ozone nonattainment areas after the Administrator would determine that ORVR systems are in widespread use. As mentioned above, in 2012, the EPA published a widespread use determination. Based on this determination, the EPA Administrator exercised her authority under section 202(a)(6) of the CAA to waive the CAA Stage II vapor recovery requirements for States with serious, severe and extreme ozone nonattainment areas, effective May 16, 2012. See 77 FR 28778.

Upon publishing the widespread use determination and waiver of requirements, the EPA developed guidance for States in removing Stage II vapor recovery system requirements. The EPA's "Guidance on Removing Stage II Gasoline Refueling Vapor Recovery Programs from SIP (Decommissioning Guidance),"[8] provides States a methodology to determine when refueling emissions will reach an inflection point at which the use of Stage II vapor recovery systems will contribute more refueling emissions into the atmosphere due to incompatibility than not using Stage II vapor recovery systems would. Overall emissions will increase because emissions due to incompatibility will be greater than the

[3] The Department later amended the Stage I regulation on September 27, 1980 (10 Pa.B. 3788), August 3, 1991 (21 Pa.B. 3406) and September 16, 1995 (25 Pa.B. 3849).

[4] As explained in response to Question 9, above, the Department amended the Stage II vapor recovery regulation on April 10, 1999 (29 Pa.B. 1889).

[5] Congress added Stage II vapor recovery requirements to sections 182(b)(3), 182(c), 182(d) and 182(e) of the CAA, 42 U.S.C.A. §§ 7511a(b)(3), 7511a(c), 7511a(d) and 7511a(e) (relating to plan submissions and requirements). Congress also added a requirement for comparable emission reductions statewide for Ozone Transport Region States, such as Pennsylvania. See section 184(b)(2) of the CAA, 42 U.S.C.A. §§ 7511c(b)(2) (relating to control of interstate ozone air pollution). The 1990 CAA amendments are found in the Clean Air Act Amendments of 1990, Pub. L. 101 – 549 (codified at 42 U.S.C.A. §§ 7401-7601q).

[6] The EPA's 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).

[7] The EPA promulgated ORVR system standards for light duty vehicles and trucks on April 6, 1994, 59 FR 16262.

[8] H. Lynn Dail et al., *Guidance on Removing Stage II Gasoline Vapor Control Programs from State Implementation Plans and assessing Comparable Measures*, U.S. Environmental Protection Agency, Research Triangle Park N.C., August 7, 2012.

emission reductions achieved by using Stage II vapor recovery systems to pump gasoline into vehicles not equipped with ORVR systems, because ORVR-equipped vehicles are a larger share of the highway vehicle fleet.

This final-form rulemaking prevents VOC emissions from the incompatibility of Stage II vacuum assist vapor recovery systems with ORVR systems and by improving the monitoring of leaks and fugitive air emissions at GDFs.

This final-form rulemaking meets a compelling public interest by avoiding excess emissions caused by continued operation of Stage II vacuum assist vapor recovery systems. Using the methodology under the EPA's Decommissioning Guidance to analyze incompatibility of Stage II vapor recovery systems in Pennsylvania, it was discovered that refueling emissions will begin to increase in 2021 in the 7-county Pittsburgh area, and in 2022 in the 5-county Philadelphia area. That is approximately 95% of the GDFs subject to Stage II vapor recovery requirements in these 12 counties, and 93% of GDFs statewide equipped with Stage II vacuum assist vapor recovery systems.

The EPA in its Decommissioning Guidance took into account the excess emissions that would be caused by the incompatibility of Stage II vapor recovery and ORVR systems, but did not take into account the excess emissions that would occur when GDF owners and operators, not subject to the testing requirements under the EPA's 2008 National emission standards for hazardous air pollutants from gasoline dispensing facilities (NESHAP) (40 CFR, Ch. 1, Part 63, Subpart CCCCCC (relating to National emission standards for hazardous air pollutants for source category: gasoline dispensing facilities)), are no longer required to perform vapor leak testing after decommissioning. Nor did the EPA take into account the excess emissions that would be caused by those GDF owners and operators who will test for vapor leaks only once in every three years under the NESHAP versus annually under current Stage II vapor recovery requirements.

For air quality protections beyond those accounted for by the EPA, through this final-form rulemaking the Board is updating the requirements for vapor recovery systems vapor leak protections in the 5-county Philadelphia and 7-county Pittsburgh areas and adding other measures, such as monthly inspections and an option to install continuous pressure monitoring, to help ensure that fugitive emissions from GDFs do not increase under sections 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). These measures reduce the likelihood of significant increases in VOC emissions that can occur from tank filling, tank venting, evaporation from hoses and nozzles, and spills from nozzles, currently minimized by the testing and equipment elements of the Stage II vapor recovery program.

The Department recognizes specific flaws in the EPA's Decommissioning Guidance that underestimate the actual effect of decommissioning. Importantly, the Department disagrees with the EPA's assertion under section 3.1 of the Decommissioning Guidance that "[t]he analysis further concluded that removing Stage II would neither increase nor decrease gasoline spillage during refueling and that with appropriate measures such as pressure/vacuum valves now widely employed on [UST] vent pipes,

breathing/emptying losses[9] from non-Stage II nozzles and [vapor] balance type[10] Stage II nozzles would be similar."[11]

Other State environmental agencies in Delaware, Maryland, and New Jersey also determined that the EPA Decommissioning Guidance on removing Stage II vapor recovery systems did not consider relevant factors when estimating potential emission reductions garnered by the Stage II vapor recovery program. For example, the EPA did not consider extra spills from conventional nozzles that would be used after GDFs decommission and extra evaporative emissions that would occur as a result of less frequent triennial vapor leak testing required by federal testing requirements, which is what GDFs owners would default to in the absence of this final-form rulemaking, versus the annual leak testing requirements contained in this final-form rulemaking. In addition, the EPA did not consider other types of technology available today that reduce emissions. If vapor leak testing, hose and nozzle requirements are altered or removed, emissions could increase.

States examined what components caused leaks and the frequency at which leaks developed at GDFs and determined that, even after decommissioning a Stage II vapor recovery system, the Stage II vapor recovery system leak testing regime would be beneficial for controlling emissions from tank breathing, emptying and filling losses, which are expelled vapors that occur when the UST is filled with gasoline from a delivery truck. States' examination of emissions indicated that even newly certified GDFs develop leaks, sometimes significant leaks, within a few months of starting operation.[12] Industry-standard leak testing for those leaks occurs at least annually. More frequent checks by GDF staff can reveal leaks before annual leak testing. The EPA's Decommissioning Guidance did not consider the effect of eliminating the required Stage II vapor recovery system annual leak testing. The absence of leak testing has the potential for increasing filling and breathing losses significantly.

Decommissioning Stage II vapor recovery systems without preserving effective pollution control elements of the program would likely lead to degradation of air quality. In this final-form rulemaking, the Board is incorporating requirements to preserve some vapor leak monitoring and testing and require new types of low permeation hoses and enhanced conventional (ECO) nozzles that control emissions from evaporation and spills while allowing GDFs to remove Stage II vapor recovery equipment.

For these reasons, this final-form rulemaking allows – and requires for Stage II vacuum assist vapor recovery systems – decommissioning of the Stage II systems while keeping other requirements that remain relevant and, in some instances, enhance the requirements to limit potential emission increases. For leak testing, this final-form rulemaking allows the GDFs to pursue a compliance alternative to annual leak testing by installing a continuous pressure monitor and performing the necessary management practices on the continuous pressure monitoring system. In addition, this final-form rulemaking requires ECO nozzles, if available, and low permeation hoses. One ECO nozzle is currently certified, and another is nearing completion of its California certification. Low permeation hoses are now available and will prevent a significant amount of evaporative VOC emissions from entering the atmosphere. Continuing leak testing, requiring low permeation hoses, and replacing nozzles when ECO nozzles become

[9] The term "breathing/emptying losses" refer to tank emissions that occur when air is ingested and expelled from the UST. Breathing losses in USTs occur daily and are attributable to gasoline evaporation and pressure changes. The frequency with which gasoline is withdrawn from the tank, allowing fresh air to enter to enhance evaporation, also has a major effect on the quantity of breathing loss emissions.

[10] A nozzle that is used on a Stage II vapor balance vapor recovery system.

[11] Decommissioning Guidance, p.8.

[12] *Draft Report Analysis of Future Options for Connecticut's Gasoline Dispensing Facility Vapor Control Program*, Rob Klausmeier de la Torre Klausmeier Consulting, Inc., December 8, 2011.

significantly available will help reduce VOC emissions in the 5-county Philadelphia and 7-county Pittsburgh areas - urban areas where ground-level ozone concentrations are highest.

The monitoring and testing requirements in this final-form rulemaking will also be more protective than those under the EPA's NESHAP, which only calls for triennial leak testing for GDFs with the largest throughputs, namely throughput of 1.2 million gallons annually. Note that the NESHAP is designed to curb hazardous air pollutants; however, not all VOCs are hazardous air pollutants. In addition to the NESHAP having less stringent monitoring and testing requirements than this final-form rulemaking, it does not require low permeation gasoline hoses or the dripless ECO nozzles at GDFs. Yet these are cost-effective measures that significantly reduce VOC emissions and small gasoline spills.

Anticipated emission reductions and who would benefit.

The Department worked with other State environmental agencies to examine the rate at which GDFs develop leaks and the amount of VOC emissions produced from the leaks. Two States – Massachusetts and Connecticut - commissioned studies that examined the potential for VOC emissions to increase when Stage II vapor recovery systems are decommissioned.[13,14] The amount of VOC emissions that would be avoided by only addressing Stage II vacuum assist-ORVR system incompatibility would be approximately 0.2 pounds for every 1,000 (0.2 lb./1,000) gallons[15] of fuel dispensed. Without the further protections under this final-form rulemaking, the amount of VOC emissions increases resulting from UST and other component leaks would be at least 0.9 lb./1,000 gallons of fuel dispensed.[16]

As a result of these efforts, the Department determined that it is necessary for Stage II vapor recovery system leak testing and facility self-inspections, or a suitable substitute such as continuous pressure monitoring, to continue at GDFs in the 5-county Philadelphia and 7-county Pittsburgh areas after decommissioning – and even if decommissioning does not occur - so that VOC emissions do not increase. The VOC emission increases would be detrimental to the air quality for both urban areas if the Department were to allow GDFs to revert to requirements under the NESHAP.

This final-form rulemaking keeps emissions lower than could be achieved under the Federal NESHAP. Emissions of VOC in 2021 will be lower by between 548 and 1,300 tons (or up to 3.5 tons per day), and by between 375 tons and 880 tons (or up to 2.4 tons per day), in the 5-county Philadelphia and 7-county Pittsburgh areas, respectively. This reduction in VOC emissions is attributed to annual leak testing and repair rather than triennial leak testing under the NESHAP. There will also be approximately an 86% control efficiency of hazardous air pollutants achieved by this final-form rulemaking.[17]

The general populations in the two areas, which are approximately 4.1 million people in the 5-county Philadelphia area and 2.3 million people in the 7-county Pittsburgh area, will benefit from reduced ozone

[13] *Air Program Support for Stage I and Stage II Programs in Massachusetts – Final Report,* Prepared by Eastern Research Group, Inc. de la Torre-Klausmeier Consulting, December 12, 2002.
[14] *Analysis of Future Options for Connecticut's Gasoline Dispensing Facility Vapor Control Equipment,* Prepared by Rob Klausmeier, de la Torre Klausmeier Consulting, Inc., December 8, 2011.
[15] Stage II Program Calculation spreadsheet developed by Michael Baker International for the Pennsylvania Department of Environmental Protection.
[16] This number is derived from the finding the effect of controls on the combination of uncontrolled filling losses, 7.0 lb. per 1,000 gallons of gasoline filled, plus breathing losses, 1.0 lb. per 1,000 gallons of gasoline pumped, and taking the difference between the control with annual inspections, 0.76, minus the control with triennial inspections, 0.65. (7.0 + 1.0) * (0.76 - 0.65) = 0.9 lb./1,000 gallons. This result does not include the savings from requiring low permeation hoses and ECO nozzles.
[17] Widespread use determination, 77 FR at p. 28774.

formation and the effects of hazardous air pollutants. Workers and other people at GDFs will benefit from reduced hazardous air pollutants. Neighborhoods around GDFs, employees at GDFs, and motorists who fill their vehicles at GDFs will benefit through a reduction in exposure to hazardous air pollution from GDFs that vent gasoline vapors.

Pennsylvania companies and their employees conducting installation, decommissioning, modification or repairing of vapor recovery equipment at GDFs will realize cost savings under this final-form rulemaking. Because this final-form rulemaking requires that a person performing this type of work be certified under sections 129.61a(q) and 129.82a(e), this may reduce overall costs to GDF owners and operators over time.

Collectively, GDFs in the 12 counties affected by the final-form rulemaking will avoid losing 400,000 to 700,000 gallons of gasoline into the air every year as a result of this final-form rulemaking. This translates conservatively into annual gasoline savings for the affected GDFs of between $1,342,218 and $2,302,584 based on a cost of $3.20 per gallon of gasoline.

Consumers will directly save money as a result of this final-form rulemaking. In the 12-county area, consumers using low permeation hoses will save approximately 67,000 gallons of gasoline, which amounts to a $213,558 annual cost benefit to consumers. Consumers using ECO nozzles will receive an economic benefit by eliminating spills and evaporation from the nozzle. In the 12-county area, consumers using ECO nozzles are anticipated to save approximately 60,000 gallons of gasoline, which amounts to a $193,267 annual cost benefit to consumers.

The use of low permeation hoses will reduce evaporative emissions in the 5-county Philadelphia and 7-county Pittsburgh areas by 200 tons per year. Using ECO nozzles will reduce annual evaporative emissions by 108 tons and 73 tons in the 5-county Philadelphia and 7-county Pittsburgh areas, respectively, by reducing spills more than conventional nozzles. In addition, an equal amount of gasoline from nozzle spills will be prevented from reaching sources of surface and ground water. This final-form rulemaking reduces toxic chemicals in the environment and reduces human exposure in the surrounding community, especially for those who work and fill their vehicles at GDFs.

Please see the response to Question 17, below, for more detailed information on benefits of this final-form rulemaking.

(11) Are there any provisions that are more stringent than federal standards? If yes, identify the specific provisions and the compelling Pennsylvania interest that demands stronger regulations.

Yes. Overall, this final-form rulemaking limits VOC emissions at GDFs to a level equivalent to the emissions that are produced under current State regulations, which are more stringent than Federal requirements. A key element of this proposal is the requirement for vapor leak testing to be performed at more facilities and more often than required under Federal regulations. A full description of the elements of this final-form rulemaking that are more stringent than the NESHAP (see description of NESHAP in response to Question 10, above) and the EPA's Stage II vapor recovery guidance (which exists in place of EPA regulations) are described below, along with compelling Pennsylvania interests to support the stringency.

Section 129.61

One requirement under section 129.61 (relating to Small gasoline storage tank control (Stage I control) – an existing requirement - could arguably be more stringent than the NESHAP requirements, but in practice, GDF owners or operators statewide likely already meet it. It is retained in this final-form rulemaking under section 129.61(b), which specifies that the submerged fill pipe must be within 6 inches of the bottom of the storage tank. The NESHAP has both a temporal and volume limitation on this requirement: it requires that all submerged fill pipes installed after November 9, 2006 at facilities with monthly through put of 10,000 gallons of gasoline or more be within 6 inches of the bottom of the storage tank. See 40 CFR 63.11117(b)(2) (relating to requirements for facilities with monthly throughput of 10,000 gallons of gasoline or more). It is likely all submerged fill pipes have been altered to comply with the requirement.

Section 129.61a

Under sections 129.61a(a)(1) and (a)(2), this final-form rulemaking specifies the applicability requirements for the vapor leak monitoring procedures and other requirements for small gasoline storage tank emission controls set forth under section 129.61a. These are expressed relative to monthly gasoline throughput for a GDF. A GDF that is an independent small business marketer of gasoline will have a higher throughput threshold, consistent with section 324 of the CAA (42 U.S.C.A. § 7625) (relating to vapor recovery for small business marketers of petroleum products), existing Stage II requirements under section 129.82 and new requirements under section 129.61a. The applicability of this final-form rulemaking is more stringent than the applicability of the NESHAP, as described here.

Section 129.61a applies to an owner and operator of a "small gasoline storage tank," which is defined in existing section 121.1 (relating to definitions) as a tank from which gasoline is dispensed to motor vehicle gasoline tanks. Through the limitation of applicability under section 129.61a(a) to a gasoline storage tank subject to section 129.61 in any of the 12 counties, section 129.61a applies to the owner and operator of a small gasoline storage tank with a capacity greater than 2,000 gallons in any of those counties. The applicability is further defined by throughput of gasoline at the GDF, which is more stringent than that under the NESHAP. The difference in throughput thresholds is the major difference between the NESHAP and this final-form rulemaking.

To explain further, the NESHAP requires vapor leak testing only for a GDF with a monthly gasoline throughput over 100,000 gallons (40 CFR 63.11118(e) (relating to requirements for facilities with monthly throughput of 100,000 gallons of gasoline or more), whereas this final-form rulemaking requires vapor leak testing for (1) a GDF with a monthly gasoline throughput over 10,000 gallons (as is currently required under section 129.82) and (2) a GDF that is an independent small business marketer of gasoline with a monthly gasoline throughput equal to or greater than 50,000 gallons. The lower gasoline throughput thresholds in this final-form rulemaking compared to those in the NESHAP will increase the number of GDFs subject to this final-form rulemaking relative to the NESHAP. Gasoline throughput at these GDFs accounts for approximately 30% of all gasoline throughput in the two areas. Therefore, this requirement in the final-form rulemaking is more stringent than the Federal requirements. The 10,000 gallon-per-month throughput threshold, which will cover most of gasoline throughput in the 5-county Philadelphia and 7-county Pittsburgh areas, supports the purpose of this final-form rulemaking, which is to continue to maintain the current level of emission controls on GDFs. Without keeping the threshold for vapor testing at 10,000 gallons per month, the control of emissions would be diminished by approximately 30%.

Section 129.61a(b) of this final-form rulemaking identifies more vapor leak tests to be performed at a GDF than are required under the NESHAP. This provision specifies four tests developed by the California Air Resources Board (CARB). Section 129.61a(d)(1) explains that three tests apply to all GDFs and the fourth test applies in limited circumstances. The tests and the applicability of the fourth test are listed here:

- **CARB TP-201.1E** – Leak Rate and Cracking Pressure of Pressure/Vacuum Vent Valves
- **CARB TP-201.3** – Determination of 2 Inch WC Static Pressure Performance of Vapor Recovery Systems of Dispensing facilities
- **CARB TP-201.3C** – Determination of Vapor Piping Connections to Underground Gasoline Storage Tanks (Tie-Tank Test)
- **CARB TP-201.1B** – Static Torque of Rotatable Phase I Adaptors. This test will only be required to be performed annually for GDFs that have rotatable adapters installed.

The NESHAP requires only two of these tests, the CARB TP-201.1E and CARB TP-201.3 tests, to be performed. Under the NESHAP the tests are performed less frequently (namely, once in every 3 years) than under section 129.61a, and only at the GDFs with the largest throughputs (namely, GDFs with monthly throughputs of 100,000 gallons or greater). See 40 CFR 63.11118 (relating to requirements for facilities with monthly throughput of 100,000 gallons of gasoline or more). The vapor leak testing requirements in this final-form rulemaking are more stringent than those under the NESHAP. Requiring the additional vapor leak tests provides a comprehensive, system-wide testing regime of UST components most likely to develop vapor leaks. Under the NESHAP, USTs could be leaking a larger volume of vapors from less frequently tested components.

Under section 129.61a(c)(1), this final-form rulemaking requires the vapor leak rate tests to be performed more frequently at a GDF than required by the NESHAP. Section 129.61a(c)(1), by cross-referencing section 129.61a(d), requires vapor leak testing with the CARB TP-201.1E, CARB TP-201.3 and CARB TP-201.3C tests (and the CARB TP-201.1B test if the Stage I vapor recovery system is equipped with a rotatable adaptor) once in every 12-month period. If the equipment were to fail the CARB TP-201.3 test, then this test will need to be performed once in every 6-month period. When the equipment passes two consecutive CARB TP-201.3 tests, the testing reverts to once in every 12-month period. This final-form rulemaking also offers a compliance option under section 129.61a(c)(2) for owners or operators of GDFs who want to forego most periodic testing by installing and operating a continuous pressure monitoring system. This option would most likely be selected by owners or operators of large GDFs, because continuous pressure monitoring may be a more convenient way of measuring emissions than periodic testing. The compliance option for installing continuous pressure monitors is the emission control equivalent to annual leak testing and periodic inspections and maintenance performed by GDF staff. Periodic inspections are required under section 129.61a(g)(1) and (2) (see below). On the other hand, the NESHAP requires testing only once every three years and only for the CARB TP-201.1E and CARB TP-201.3. See 40 CFR 63.11118(e). Analyses commissioned by other States have shown that new vapor leaks form sometimes only months after a GDF has successfully passed CARB TP-201.3. Requiring an increased testing frequency (every 6 months) after equipment fails a CARB TP-201.3 vapor leak test will encourage periodic leak inspections by GDF staff to avoid a vapor leak testing failure by identifying leaks close to the time they occur.

Under section 129.61a(g), this final-form rulemaking requires comparable inspections as the NESHAP on specific components that are more likely to be damaged during a fuel delivery, but requires the inspections at more GDFs than under the NESHAP as a result of the lower throughput thresholds in

section 129.61a(a) (see Table 2 of the NESHAP, 40 CFR, Part 63, Subpart CCCCCC, Table 2 (relating to applicability criteria and management practices for gasoline cargo tanks unloading at gasoline dispensing facilities with monthly throughput of 100,000 gallons of gasoline or more)) and requires the inspections immediately following a fuel delivery. This final-form rulemaking requires the inspection to occur immediately after the gasoline delivery because Department inspectors have identified that certain components of a UST often are either broken or inappropriately maintained immediately following a fuel delivery. Management practices under this final-form rulemaking are similar to the NESHAP, but as stated above, this final-form rulemaking is be applicable to GDFs with a throughput of 10,000 (or 50,000) gallons per month. Inspecting components of the UST is a commonsense approach to reducing leaks long before a vapor leak test is required and will limit fugitive emissions.

Section 129.61a(k) of this final-form rulemaking requires the installation of low permeation hoses and ECO nozzles at GDFs that do not have a Stage II vapor recovery system. The NESHAP does not require installation of low permeation hoses or ECO nozzles. Low permeation hoses and ECO nozzles will significantly reduce VOC emissions in the 5-county Philadelphia and 7-county Pittsburgh areas. Low permeation hoses and ECO nozzles are a reasonably cost-effective VOC control measure. The use of ECO nozzles can also reduce small gasoline spills that may cause cross-media impacts. These spills may contaminate surface or underground water supplies. These spills may add up to be a significant contributor to underground and surface water contamination in urban areas such as the 5-county Philadelphia and the 7-county Pittsburgh areas.

Section 129.61a(m) of this final-form rulemaking identifies the provisions under section 129.61a that require recordkeeping. These provisions describe with greater specificity than the NESHAP the information to be recorded for all of the records required under section 129.61a. See 40 CFR 63.11125 (relating to what are my recordkeeping requirements?). The greater specificity of information included in this section provides guidance to the regulated community on the items to record and provides air quality inspectors with better information for effective enforcement of this final-form rulemaking.

Section 129.82a

Section 129.82a(b)(1) of this final-form rulemaking requires the owner or operator of a GDF to decommission a Stage II vacuum assist vapor recovery system. This is more stringent than Federal requirements because the EPA has authorized but not required decommissioning. This final-form rulemaking requires the decommissioning of the Stage II vacuum assist vapor recovery systems due to the incompatibility issues that will cause excess air pollution and in response to requests from representatives of convenience store chains regarding the possibility of relieving them of the expense of installing and operating Stage II vapor recovery equipment. Please see response to Question 14, below, for more information about requests from representatives of convenience store chains.

Section 129.82a(d) of this final-form rulemaking prescribes the procedures to follow to decommission Stage II vapor recovery equipment. This is more stringent than Federal requirements because the EPA does not have corresponding requirements. In its Decommissioning Guidance, the EPA did not recommend one type of decommissioning procedure over another. The EPA recognized the Petroleum Equipment Institute's method as being "especially instructive as it was developed by industry experts with a focus on regulatory compliance and safety." Specifically, the Petroleum Equipment Institute's "Recommended Practices for Installation and Testing of Vapor-Recovery Systems at Vehicle-Fueling

Sites"[18] and the associated CARB tests contained within the EPA's Decommissioning Guidance comprises the prescribed method for decommissioning vapor recovery systems in this final-form rulemaking.

Under section 129.82a(d), this final-form rulemaking also requires that the GDF owner or operator upon decommissioning complete a form that notifies the appropriate Department Regional Air Program Manager that the decommissioning has been successfully completed. The notification requirement is not a Federal requirement. This final-form rulemaking requires notification to track the progress of decommissioning. If the decommissioning occurs in a county with an approved local air pollution control agency (currently, Philadelphia and Allegheny Counties), section 129.82a(d) requires that the GDF owner or operator notify the local air pollution control agency.

Section 129.82a(e) of this final-form rulemaking requires that the person performing the decommissioning work be certified to the appropriate classification as defined by the Commonwealth's storage tank regulations 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.) Although not specifically recommended in the EPA's Decommissioning Guidance, the Board recognizes the importance of having properly trained technicians working on these potentially explosive sources.

Section 129.82a(h), this final-form rulemaking provides for vapor leak protections that are not required by the EPA. Although the EPA in its Decommissioning Guidance considered the excess emissions that would be caused by the incompatibility of Stage II vapor recovery systems and ORVR systems, the EPA did not take into account the excess emissions that would occur when GDF owners and operators are no longer required to perform vapor leak testing after decommissioning Stage II vapor recovery systems. Section 129.82a(h) cross-references section 129.61a, which sets forth vapor leak testing requirements to ensure that emissions from vapor leaks do not increase.

(12) How does this regulation compare with those of the other states? How will this affect Pennsylvania's ability to compete with other states?

All of the Commonwealth's neighboring States that had Stage II vapor recovery requirements have amended their programs to authorize decommissioning of Stage II vapor recovery systems. They have also addressed vapor leak testing requirements. Neighboring States have taken varying courses of action. This final-form rulemaking contains elements of the various States' programs. Most of this proposal is similar to the regulations of most neighboring States in the Northeast, which are States with which Pennsylvania shares similar air quality challenges. Due to the favorable impacts of lowering gasoline evaporation at GDFs, this final-form rulemaking and neighboring States' rulemakings do not significantly increase costs to GDF owners and operators. Because of the similarities in the States' rulemakings, there should be minimal cost differences experienced by GDF owners and operators. Any cost differences are not be expected to affect Pennsylvania's ability to compete with other States.

Neighboring States that require GDFs to perform annual vapor leak testing after Stage II vapor recovery system decommissioning prescribe using CARB vapor leak test procedures in a similar manner to that which the Department has included in this final-form rulemaking. Please see the CARB test procedures referenced in the response to Question 11, above.

[18] See 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.

Delaware

Delaware adopted regulations on September 11, 2015. See volume 19, page 199 of the Delaware Register of Regulations. Compared to other neighboring States' regulations controlling vapor emissions at GDFs, Delaware's regulations are most like the Board's final-form rulemaking. As under the Board's final-form rulemaking, the Delaware regulations allow GDF owners and operators to decommission Stage II vapor recovery systems using best industry practices as contained in the PEI/RP300-09. See 7 Del. Code Regs. § 1124-36.0 (relating to vapor emission control at gasoline dispensing facilities), at 36.9.1. Decommissioning may only be performed by installers certified by the State of Delaware. See 7 Del. Code Regs. §1124-36.9.3. Delaware requires that annual leak testing be performed. 7 Del. Code Regs. § 1124-36.6.2.3. The tests Delaware requires are the three required for all subject GDFs under section 129.61a of this final-form rulemaking, namely CARB TP-201.1E, CARB TP-201.3 and CARB TP-201.3C. 7 Del. Code Regs. § 1124-36.6.2. Delaware requires that the latter two tests, however, be conducted under a more stringent protocol known as the San Diego Protocol;[19] it is slightly more stringent because it measures the air tightness of the UST at a higher pressure. See 7 Del. Code Regs. § 1124-36.6.2.1.1 and 36.6.2.1.2. Under this final-form rulemaking and Delaware's regulations, the GDFs subject to vapor leak monitoring procedures and related emission control requirements have a monthly throughput of at least 10,000 gallons and remain subject to the requirements even if their throughput later falls below the threshold. See 7 Del. Code Regs. § 1124-36.1.1.1.

Under Delaware's regulations, if a corrective action is needed because either CARB TP-201.1E or CARB TP-201.3 fails when performed under the San Diego protocol, the owner or operator of a GDF must perform quarterly leak testing instead of annual testing. See 7 Del. Code Regs. § 36.6.2.3. Section 129.61a(d)(1)(iv) of this final-form rulemaking requires once-in-every-6-month testing and only if CARB TP-201.3 were to fail. Under both Delaware's regulations and this final-form rulemaking, requiring a GDF owner or operator to perform vapor leak testing more frequently than annually after an annual vapor leak test fails will encourage GDF staff to perform the required periodic visual inspections to avoid failure. Unlike Delaware, however, the Department does not believe that a visual inspection of a pressure/vacuum vent valve will, in the vast majority of instances, inform the GDF staff that the valve is malfunctioning and encourage repair of the valve. Therefore, it would be unreasonable to require a GDF owner or operator to test more frequently if the CARB TP-201.1E, which tests the pressure/vacuum vent valve, were to fail. For this reason, this final-form rulemaking does not require more frequent than annual vapor leak testing if CARB TP-201.1E were to fail.

Delaware allows continuous pressure monitoring as a compliance alternative to leak testing, which this final-form rulemaking also allows. Delaware's regulations provided a trial period for allowing GDF owners and operators to install and use continuous pressure monitoring instead of performing annual vapor leak testing. See 7 Del. Code Regs. § 36.1.4.1.2. The purpose of the trial was to gather information on the performance of continuous pressure monitoring systems. Volume 19, page 200 of the Delaware Register of Regulations. Having collected the data, Delaware is now amending its regulations to finalize the phase-out of Stage II vapor recovery systems and to ensure effective controls on vapor emissions upon decommissioning of Stage II vapor recovery systems. (See https://dnrec.alpha.delaware.gov/air/permitting/under-development/).

[19] *San Diego County Air Pollution Control District Test Procedure TP-96-1*, Third Revision 3/1/96, Static Pressure Leak Test Procedure Volatile Fuel Vapor Recovery Installations Except Aspirator Assist Systems.

Delaware, like New Jersey, also requires any facility that is new or that decommissions to install a California enhanced vapor recovery system. See 7 Del. Code Regs. § 36.4.1 referencing 7 Del. Code Regs. § 36.10.2. In contrast, the Board's final-form rulemaking does not require CARB-certified enhanced Stage I vapor recovery systems.

Maryland

Maryland adopted regulations on November 23, 2015. See Volume 42, issue No. 23, page 1435 of the Maryland Register. Maryland's regulations, Md. Code Regs. 26.11.24 (relating to Stage II vapor recovery at gasoline dispensing facilities) apply to Baltimore City and 11 counties. See Md. Code Regs. 26.11.24.02. Owners and operators of GDFs in Maryland with a 1990 and 1991 average monthly throughput less than 10,000 gallons do not need to comply with Stage II vapor recovery requirements. See Md. Code Regs. 26.11.24.02. Maryland allows decommissioning after October 1, 2016 and requires that it be completed, as under the Board's final-form rulemaking, under industry best practices described in PEI/RP300-09. See Md. Code Regs. 26.11.24.03-1. In Maryland, decommissioned GDFs must perform CARB TP-201.3, CARB TP-201.1E, and CARB TP-201.3C annually. See Md. Code Regs. 26.11.24.04(A-1). The Board's final-form rulemaking also requires these test procedures to be completed. See section 129.61a(d). Unlike the Board's proposal, Maryland does not require the GDF to test a rotatable adapter if installed at a GDF. There is no requirement in Maryland's regulations to require once-in-every-6-month testing if CARB TP-201.3 fails on the day of a test, as there is under this final-form rulemaking. See section 129.61a(d)(1)(iv). Maryland does not allow the compliance option that this final-form rulemaking allows under section 129.61a(c)(2) for the installation and operation of a continuous pressure monitor. Recordkeeping requirements of a GDF owner and operator are similar in Maryland and under this final-form rulemaking. See Md. Code Regs. 26.11.24.07. Maryland does not require low permeation hoses or ECO nozzles to be installed as under section 129.61a(k) of this final-form rulemaking.

New Jersey

New Jersey adopted regulations on October 24, 2017. See volume 49, page 1762(a) of the New Jersey Register. New Jersey's regulations, codified in N.J. Admin. Code § 7:27-16.3 (relating to gasoline transfer operations), require decommissioning of Stage II vapor recovery systems that are not ORVR-compatible (in other words, it requires decommissioning of Stage II vacuum assist vapor recovery systems) by December 23, 2020. See N.J. Admin. Code § 7:27-16.3(e). The New Jersey regulations allow for maintaining or decommissioning other Stage II vapor recovery systems. See N.J. Admin. Code § 7:27-16.3(e). New Jersey requires GDF owners and operators to perform annual vapor leak testing after a GDF owner or operator decommissions a Stage II vapor recovery system. See N.J. Admin. Code § 7:27-16.3(h)(1) and Table 3A. During decommissioning, New Jersey requires GDF owners and operators to follow the industry accepted practice of decommissioning, as described in the Petroleum Equipment Institute's "Recommended Practices for Installation and Testing of Vapor Recovery Systems at Vehicle-Fueling Sites," PEI/RP300-09. See N.J. Admin. Code § 7:27-16.3(e) and (h)(1). Under section 129.82a(d)(1), Pennsylvania's final-form rulemaking also requires the use of PEI/RP 300-09 to decommission Stage II vapor recovery systems. As with this final-form rulemaking, New Jersey also requires that decommissioning be accomplished using certified contractors. See N.J. Admin. Code § 7:27-16.3(e) and (h)(2).

Perhaps the most significant requirement, in terms of its expense to GDF owners and operators, is that New Jersey is requiring GDFs, including all new GDFs, to install CARB-certified Stage I enhanced

vapor recovery systems unless the GDF is using a single-point vapor balance system.[20] See N.J. Admin. Code § 7:27-16.3 (d)(4)(i). This final-form rulemaking does not require owners or operators to install an enhanced vapor recovery system unless a continuous pressure monitor is used as an alternative option to performing annual vapor leak testing. See section 129.61a(e)(1). As in Pennsylvania's final-form rulemaking, New Jersey did not default to the NESHAP standard, which requires triennial leak testing of GDFs that have throughputs of over 100,000 gallons per month (1.2 million gallons per year). New Jersey requires CARB TP-201.1E, CARB TP-201.3, and CARB TP-201.1B tests to be performed annually for stations that have rotatable adaptors.

Unlike under the final-form rulemaking, New Jersey requires GDF owners and operators to inspect for leaks daily, according to the New Jersey Fuel Dispensing Facilities Compliance Calendar. See https://www.state.nj.us/dep/aqes/sbap/docs/2019%20New%20Jersey%20Fuel%20Dispensing%20Facilities.pdf. This final-form rulemaking requires monthly inspections of system components, including tank gauging electrical grommets, hoses, nozzles and the pressure/vacuum vent valve. See section 129.61a(g)(2). This final-form rulemaking requires other components, including pipe adapter, Stage I adaptor, Stage I dry break, and the automatic tank gauge cap to be inspected after a GDF receives a delivery of fuel. See section 129.61a(g)(1). As under this final-form rulemaking (section 129.61a(k)), New Jersey requires GDFs that decommission to replace hoses with low permeation hoses with ECO nozzles, if available (N.J. Admin. Code § 7:27-16.3(g)(3), (4)). Under New Jersey's regulations, GDFs that have decommissioned may replace hoses and nozzles when they need replacement from normal wear. See N.J. Admin. Code § 7:27-16.3(g)(3)(i). Under the Pennsylvania final-form rulemaking, the Department will publish a notice when two manufacturers have certified ECO nozzles that have been issued a CARB Executive Order. See section 129.61a(k). Under section 129.61a(k), owners and operators of GDFs in the 5-county Philadelphia and 7-county Pittsburgh areas are required to replace nozzles within two years after the notice.

New York

The New York State Department of Environmental Conservation has finalized regulations to allow for decommissioning of Stage II vapor recovery systems, but the regulations will not take effect until approved by the New York Governor's Regulatory Reform Unit. When implemented, the New York regulations will differ from this final-form rulemaking in that New York's leak testing requirements revert to the NESHAP's every-3-year leak testing requirements. The testing consists of two tests, namely the CARB TP-201.3 and CARB TP-201.1E tests. See 40 CFR 63.11118(e). Under section 129.61a(d) of the final-form rulemaking, vapor leak testing is required annually and involves all three vapor leak tests, namely CARB TP-201.3, CARB TP-201.1E, and CARB TP-201.3C, and also includes the CARB TP-201.1B test for stations that have rotatable adaptors.

The New York regulations would adopt many aspects of the NESHAP but would have a more stringent throughput threshold for requiring once-in-every- 3-year vapor leak testing. The NESHAP threshold is 100,000 gallons per month, whereas the New York threshold would be 66,667 gallons per month. The throughput threshold in the final-form rulemaking for requiring annual vapor leak testing is 10,000 gallons per month under section 129.61a(a)(1).

[20] New Jersey defines a "single-point vapor balance system" as, "… a type of vapor balance system in which the storage tank is equipped with one entry port for a gasoline fill pipe and the same port is used as an exit port for vapor recovery. A single-point vapor balance system utilizes a coaxial drop tube that consists of a pipe within a pipe." See N.J.A.C. 7:27-16.1 (relating to definitions).

New York's existing regulations require Stage II vapor recovery systems in the metropolitan New York City and lower Orange County metropolitan areas. See N.Y. Comp. Codes R. & Regs. Tit. 6, § 230.2 (relating to gasoline dispensing sites--prohibitions and requirements).

(13) Will the regulation affect any other regulations of the promulgating agency or other state agencies? If yes, explain and provide specific citations.

This regulation will not affect any other EQB regulations or regulations of other state agencies.

(14) Describe the communications with and solicitation of input from the public, any advisory council/group, small businesses and groups representing small businesses in the development and drafting of the regulation. List the specific persons and/or groups who were involved. ("Small business" is defined in Section 3 of the Regulatory Review Act, Act 76 of 2012.)

Prior to development of the proposed rulemaking, the Department had conversations with representatives of convenience store chains regarding the possibility of relieving them of the expense of installing Stage II vapor recovery equipment at new GDFs. The Department agreed that installing Stage II vapor recovery equipment was unnecessary because the Department planned to authorize decommissioning of Stage II vapor recovery equipment and because the associated emission reductions would diminish in the near future.

In developing the proposed rulemaking, the Department presented the draft Annex A for the proposed rulemaking to the Small Business Compliance Advisory Committee (SBCAC) on April 24, 2019. The SBCAC concurred with the Department's recommendation to present this proposed rulemaking to the Board for consideration. The SBCAC requested that additional cost information be presented to the Board, including information related to the number of small businesses affected and the cost to owners and operators of replacing current dispensing hoses and nozzles with currently allowable equipment. The Department completed these cost estimates and included them in the response to Question 17 in the proposed rulemaking's Regulatory Analysis Form.

The Department presented the draft Annex A for the proposed rulemaking to the Air Quality Technical Advisory Committee (AQTAC) on April 11, 2019. AQTAC concurred with the Department's recommendation move the proposed rulemaking forward to the Board for consideration.

The Department also conferred with the Citizens Advisory Council's (CAC) Policy and Regulatory Oversight Committee concerning the proposed rulemaking on May 5, 2019. On May 22, 2019, the CAC concurred with the Department's recommendation to advance the proposal to the Board for consideration.

The Board approved publication of the proposed rulemaking at its meeting on May 19, 2020. The proposed rulemaking was published on September 26, 2020. Three virtual public hearings were held on October 27, 28, and 29, 2020. The 66-day public comment period closed on November 30, 2020. Public comments were received from 5 public commentators and IRRC. 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. One trade association expressed support and indicated that the proposed rulemaking would contribute to cost savings to the businesses with GDFs. Commentators recommended that the timeline to

begin leak testing should be better described and that the final-form rulemaking should clarify that CARB Executive Orders and other records may be electronically stored at gasoline dispensing facilities for inspection. One commentator suggested that the Board should incorporate the 40 CFR Part 63, Subpart CCCCCC leak testing requirements for gasoline dispensing facilities in other areas of the Commonwealth into the final-form rulemaking. This requirement is already being enforced by the EPA and is outside the intended scope of the proposed rulemaking. One commentator suggested allowing only individuals obtaining a level of certification of either UTT (underground storage tank system tightness tester), UMX (underground storage tank system major modification), UMI (underground storage tank system minor modification), or IUM (inspection of underground storage tank system and facilities) from the Department's Storage Tank Program to qualify to perform leak testing. Two commentators expressed concerns that motorists may have difficulty operating ECO nozzles and that they cost more than other types of gasoline nozzles. One commentator stated that their company locations are reporting fewer minor drips and spills since converting to the ECO nozzles and another commentator stated that while some of their customers have had difficulty operating the ECO nozzles, the difficulty can be overcome with a little help from attendants.

The Department presented the draft final-form regulation to the Air Quality Technical Advisory Committee (AQTAC) on April 8, 2021, and to the Small Business Compliance Advisory Committee (SBCAC) on May 19, 2021, and briefed the committees on the comments received on the final-form rulemaking. The Department presented the draft final-form regulation 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 recommended that this final-form rulemaking be submitted to the Board for consideration. Advisory committee meetings are advertised, open to the public, and have designated times on the meeting agendas for public comments.

(15) Identify the types and number of persons, businesses, small businesses (as defined in Section 3 of the Regulatory Review Act, Act 76 of 2012) and organizations which will be affected by the regulation. How are they affected?

The amendments to section 129.61 will have no substantive impacts. The amendments to section 129.82 will have little to no impact because they merely codify existing Department enforcement practices and codify vapor recovery leak testing requirements in Federal guidance already applicable to the owners and operators. In fact, section 129.82 will save persons, businesses, small business and organizations money by removing the requirement to install Stage II vapor recovery systems. Section 129.82a will impose initial costs on GDF owners and operators to decommission Stage II vapor recovery systems but will save them money over time by reducing maintenance and repair of Stage II vapor recovery system components. Stage II vapor recovery system components are expensive to repair. Amendments included in section 129.61a of this rulemaking are the most impactful, as described below.

Small Businesses

This final-form rulemaking applies to owners and operators of GDFs statewide that operate Stage I or Stage II vapor recovery systems at GDFs. Types of small businesses affected may be airport/aviation companies, cemeteries, marinas, retail gas stations, service stations, and some fuel terminal operators. Companies that test, repair and install Stage I and Stage II vapor recovery equipment will also be affected.

Using the best available information, the Department estimated the number of small business facilities that operate with Stage I or Stage II vapor recovery equipment. These businesses vary greatly in function

and do not fall into distinct groups that can be described, for instance, by a North American Industry Classification System (NAICS) code. Three NAICS codes were explored as being representative of GDFs owned and operated by small businesses. There is a potential for a small business to fall outside of the three NAICS codes. For instance, a grocery store or a restaurant chain could be a small business that sells gasoline. There are probably very few, if any, small business GDFs that are like these.

The small business facilities subject to this final-form rulemaking that the Department assessed under 13 CFR Chapter 1, Part 121 (relating to small business regulations) are NAICS 447110 (Gasoline Stations with Convenience Stores, $29.5 million), 447190 (Other Gasoline Stations, $15.0 million), and NAICS 424720, Gasoline Merchant Wholesalers, fewer than 200 employees). The Department requested from the Pennsylvania Small Business Development Center (SBDC) the number of facilities within the 12 affected counties that were below the annual receipt and employee threshold for small businesses for the 3 NAICS codes. Upon further examination, the Department determined that Gasoline Merchant Wholesalers primarily distribute motor fuels and are not equipped to dispense gasoline into vehicles. Gasoline Merchant Wholesalers were eliminated from the relevant NAICS codes. The total number of affected small businesses that are in NAICS codes 447110 and 447190 are 5 and 915, respectively, for a total number of affected facilities of 920.

The number of small businesses that test Stage I and II vapor recovery equipment is not available by a NAICS category. The installation and testing of vapor recovery systems is almost entirely accomplished by larger companies. Small businesses that test vapor recovery systems exist, but it is impossible to determine their exact number. These companies are not required to be registered with the Department and do not have a specific NAICS code. This final-form rulemaking requires all individuals who decommission, install, make a modification, or repair, vapor recovery equipment be certified to the UMX or UMI category by the Department.

During the comment period, the IRRC asked the Board how the Department would notify small businesses that perform decommission, install, modify, test, or repair of the newly required level of certification. As a point of clarification, leak testers do not require certification. 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. Following the safety precautions specified in the pre-test procedures in 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 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.
Starting in 2012, the Department surveyed GDFs (the survey or 2012 GDF survey) with USTs to determine which GDFs had Stage II vapor recovery equipment installed, what type of equipment was installed and the gasoline throughput of each GDF. The survey was sent to approximately 2,500 GDFs in the Philadelphia and Pittsburgh areas. The survey response rate was slightly over 60%. Since completion of the survey in 2013, records of the Department's Storage Tanks Program indicate that 400 additional GDFs in both areas have started to operate. The Department performed research and used statistical methods to estimate the type and throughput for each GDF that did not respond to the survey or that started operating after completion of the survey. Department staff performed hundreds of web searches to determine the type of GDFs for those that did not complete the survey or that were new GDFs. A small number of GDFs could not be classified into a specific type. Unclassified GDF types were assigned a type and throughput based on the known distribution of types and average throughputs

of each type of GDF. Each GDF was categorized in one of three annual "throughput bins." Inclusion in a "throughput bin" indicates whether the GDF is be subject to this final-form rulemaking or the NESHAP or both (Table 1). The monthly requirements in this final-form rulemaking are made into annual throughput bins in Table 1 to align better with the requirements under the NESHAP and allow for better comparison of this final-form rulemaking and the NESHAP.

Table 1: Leak testing and follow-up repair requirements by throughput bin and regulatory requirements.

Throughput Bin	Final-form Rulemaking Leak Testing and Follow-Up Repair	Federal NESHAP Leak Testing and Follow-Up Repair
<120,000 gallons per year	No	No
120,000 and <1,200,000 gallons per year	Yes	No
≥1,200,000 gallons per year	Yes	Yes

Using the data obtained from the Department's survey, statistical methods, and the resulting estimates, the Department determined that approximately 278 of GDFs that are small businesses had a throughput below 120,000 gallons per year threshold for sections 129.61a and 129.82a. The GDFs that have low gasoline throughputs are most likely be small businesses that fall under NAICS codes 447190 (Other Gasoline Stations), because Gasoline Stations with Convenience Stores (NAICS 447110) typically have more customers, and hence a higher gasoline throughput. This is evident by the fact that only 5 convenience stores with GDFs are considered small businesses in the 5-county Philadelphia and 7-county Pittsburgh areas under 13 CFR Chapter 1, Part 121. 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 SBDC indicates that 642 small businesses will be affected by this final-form rulemaking.

Considering the types of businesses listed above, it is most likely that the 5 gasoline stations with convenience stores will be affected along with either service stations or retail gasoline stations. These are businesses that mostly sell gasoline and that fall under the NAICS code 447190 for Other Gasoline Stations. Other types of businesses sell gasoline, such as grocery stores and chain restaurants, but only a small percentage of grocery stores and restaurants sell gasoline. It is also likely that these types of businesses that sell gasoline are not small businesses so these were not considered.

The results of the Department's survey indicate that GDFs' throughputs for small business facilities with NAICS codes 447190 (Other Gasoline Stations) and 447110 (Gasoline Stations with Convenience Stores) are often much lower than throughputs of bigger retail chains. The survey also indicates that by over a 2-to-1 margin GDFs that are small businesses have throughput in the range of 120,000 gallons to 1,200,000 gallons per year. The exact number of employees that work at these facilities is unknown. Typically, a GDF that is a small business, whether a convenience store or a business that just sells gasoline, does not have more than 20 employees. This gives an estimate of 12,840 employees that work for the 642 small businesses.

Persons, businesses, small businesses and organizations

This final-form rulemaking applies to owners and operators of GDFs statewide that operate Stage I or Stage II vapor recovery systems at GDFs. Entity types that would be affected are airport/aviation companies, cemeteries, vehicle fleets, retail gas stations, governments, rental agencies, service stations

and fuel terminal operators. Companies that test, repair and install Stage I and Stage II vapor recovery equipment would also be affected.

The Department estimates from the 2012 GDF survey (referenced above under "Small Businesses") that 1,981 locations in the 5-county Philadelphia and 7-county Pittsburgh areas, combined, will be required to comply with this final-form rulemaking. The 5-county Philadelphia area is home to 1,118 locations and the 7-county Pittsburgh area is home to 863 locations. Approximately 2,906 GDFs are in the 5-county Philadelphia and 7-county Pittsburgh areas; however, only facilities that have a throughput over 120,000 gallons of gasoline per year will be subject to this final-form rulemaking. As stated above, Stage II vapor recovery controls went into effect in the 12 counties because these areas were originally designated nonattainment at moderate or above for the ozone NAAQS. Current ambient ozone concentrations in these areas either exceed or remain close to the current ozone NAAQS. The Department is keeping leak testing requirements in these counties. Large companies own and operate GDFs at many locations. For instance, the largest GDF owner in the two areas operates 128 locations. Therefore, the number of businesses affected is much lower than the number of locations. Approximately 538 and 368 businesses in the 5-county Philadelphia and 7-county Pittsburgh areas, respectively, are 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. Table 2, below, shows the affected types of business, organizations and employees that would be affected by this final-form rulemaking.

Table 2: Total Number of Businesses, Organizations and Employees Affected by Final-Form Rulemaking

	Philadelphia Area		Pittsburgh Area	
Type of Organizations	Number of Business Locations	Number of Employees	Number of Business Locations	Number of Employees
Aviation	0	0	9	90
Cemetery	0	0	1	10
Fleet	193	1,930	15	150
Gas Station	784	7,840	743	7,430
Government	0	0	4	400
Rental Agency	16	160	13	130
Service Station	89	534	62	372
Terminal Operator	14	700	6	300
Unknown	22	220	10	100
Total	**1,118**	**11,384**	**863**	**8,982**

How are they affected?

Under section 129.82a, the owners and operators of these GDFs, whether small businesses or not, will be required to decommission Stage II vapor recovery equipment by December 31, 2022, if they operate vacuum-assist vapor recovery equipment.

Under section 129.82, the owners and operators of the GDFs that are subject to the Stage II vapor recovery regulations will continue to be responsible to ensure that periodic inspections and annual leak testing of the vapor recovery equipment are performed as they are now, as long as the owner or operator retains the Stage II vapor recovery equipment. As a result of the amendments to section 129.82, an owner or operator of a GDF will no longer be required to install a Stage II vapor recovery system.

Under section 129.61a, after a GDF decommissions its Stage II vapor recovery system, the GDF owner or operator will be required to install low permeation hoses and ECO nozzles. Employees at individual GDFs will likely be required to perform leak checks on the equipment, which is a duty that they likely perform now. Business owners of GDFs will be required to perform 3 or 4 test procedures on an annual basis. If the vapor leak test procedure fails, the GDF will be required to perform that test procedure every six months until two consecutive once-in-every-6-month test procedure passes, and then the compliance period will revert to a once-in-every-12-month testing period. The other test procedures that are required to be performed annually are the Leak Rate Cracking Pressure/Vacuum Vent Valves and Determination of Vapor Piping Connections to Underground Gasoline Storage Tanks (Tie Test). Another annually performed test procedure may be required if the GDF UST has a rotatable adaptor installed. For GDFs so equipped, a Static Torque Rotatable Phase I Adaptor test procedure will need to be performed. A GDF owner or operator will largely be able to avoid the annual testing if the owner or operator chooses to install and maintain a continuous pressure monitoring system.

Companies that perform decommissioning, installation, modification, or repair of vapor recovery equipment will be affected by sections 129.61a and 129.82a. The number of these companies is small. These companies are mostly not small businesses. A new requirement of this final-form rulemaking is that employees at these companies must be certified either to the level of UST system minor modification (UMI) or underground storage tank system installation and modification (UMX) under Chapter 245, Subchapters A and B to perform decommissioning and repair tasks on a UST. The cost and time required to obtain certification may prove difficult for some of the smaller businesses to meet.

As for consumers, no changes should result. The equipment people use to refuel their vehicles will mostly be the same. This final-form rulemaking requires owners of GDFs to install ECO nozzles. ECO nozzles have an interlock device. The interlock device on Stage II vapor recovery equipment has proven cumbersome for motorists to operate. Consumers will need to familiarize themselves with the operation of the ECO nozzles. Two manufacturers will likely be marketing certified ECO nozzles by the time this final-form rulemaking becomes final. Department staff field tested one of the ECO nozzles and it did not seem difficult to operate.

(16) List the persons, groups or entities, including small businesses, that will be required to comply with the regulation. Approximate the number that will be required to comply.

Please see response to Question 15, and particularly Table 2 in the response to Question 15, for the list and approximate number of entity types that will be required to comply with this final-form rulemaking.

(17) Identify the financial, economic and social impact of the regulation on individuals, small businesses, businesses and labor communities and other public and private organizations. Evaluate the benefits expected as a result of the regulation.

Financial and Economic Impact

The financial and economic impact on businesses may be examined by looking at 5 different areas in which costs and savings will occur: decommissioning costs, savings achieved from reduced annual Stage II vapor recovery system repair costs due to decommissioning, costs of additional annual testing, costs of additional annual repair and savings from reduced gasoline evaporation due to the leak testing and repair requirements. All associated costs for the 5 different areas were obtained from industry experts and

applied to the number of GDFs in each throughput bin (please see response to Question 15 regarding "throughput bins"). The total estimated costs and savings are given in Tables 3 and 4, below. Overall, the estimated annual financial impact of this final-form rulemaking 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 costs of decommissioning, which will average approximately between $4,000 and $6,000 per GDF.

Methodology for Financial and Economic Estimates

For establishing costs to businesses, GDFs were divided into three throughput bins: less than 120,000 gallons per year, between 120,000 and less than 1,200,000 gallons per year, and over 1,200,000 gallons per year. These annual throughput bins correspond to monthly throughput values equal to or less than 10,000 gallons per month, greater than 10,000 and up to 100,000 gallons per month and equal to or greater than 100,000 gallons per month. These throughput bins represent the basis of differing requirements under the NESHAP. Categorizing the GDFs into these throughput bins allowed the Department to develop a cost analysis with which to compare the costs of this final-form rulemaking with the costs of the NESHAP.

The owners and operators of GDFs will need to comply with the NESHAP without this final-form rulemaking in effect. Unlike this final-form rulemaking, which requires annual leak testing under section 129.61a(d) for owners and operators who do not choose to use continuous pressure monitoring, the NESHAP requires owners and operators of GDFs in the over-100,000-gallons-per-month bin to perform leak testing every 3 years. Follow-up repairs for any leak testing failure for GDFs in this largest throughput bin are required by the NESHAP. This final-form rulemaking requires leak testing and repair for a GDF with a throughput over 10,000 gallons per month. No leak testing with follow-up repair requirements exists in Federal or State regulations for a GDF that has a throughout of less than 10,000 gallons per month (please see Table 1, above, in response to Question 15).

Costs of Decommissioning

The costs for decommissioning, as stated by industry sources, under section 129.82a includes costs for: dispenser decommissioning, low permeation hose kits with ECO nozzles, conventional adapters, vapor leak tests, tie tank tests, static torque tests if the GDFs are equipped with a rotatable adapter and administrative fees. The total decommissioning cost was reduced by an estimated amount that the business owner will receive 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 is approximately $4,000 to $6,000 per GDF, depending 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.

Savings due to Reduced Annual Stage II Vapor Recovery Repair Costs due to Decommissioning

Costs to repair Stage II vapor recovery components will be eliminated once Stage II vapor recovery equipment is decommissioned. These costs primarily pertain to replacing the vacuum pumps and connectors within the dispenser. The eliminated costs include the fuel benefit the GDF experiences due

to the Stage II vapor recovery system returning gasoline vapors to the UST. The eliminated annual Stage II vapor recovery system repair costs is approximately $600 per dispenser.[21]

Costs of Additional Annual Leak Testing

Annual testing requirements under section 129.61a of this final-form rulemaking include a CARB TP-201.3 test, CARB TP-201.1E test, CARB TP-201.3C test, and in some instances CARB TP-201.1B. According to industry sources, the first three tests combined cost approximately $400 to perform at a GDF and possibly more when the CARB TP-201.1B is included. This final-form rulemaking requires owners and operators of GDFs that fail an annual CARB TP-201.3 test to perform testing every 6 months until 2 consecutive tests are passed. This makes the average annual testing costs for these GDFs, during the every-6-month testing, approximately $800. Averaging these costs, the Department's analysis assumed $750 per year in testing costs for GDFs subject to this final-form rulemaking.

Costs of Additional Annual Repair

Additional repair costs will be primarily associated with repairs needed for upgraded, costlier equipment required by this final-form rulemaking that includes low permeation hoses and ECO nozzles instead of conventional hoses and nozzles. Pressure/vacuum vent valves and other components will be required to be tested and repaired on a more frequent periodic basis. More failures will be detected by annual leak testing and for a greater number of GDFs when this final-form rulemaking is in effect as a final regulation. GDFs with a gasoline monthly throughput of over 10,000 gallons (and GDFs that are independent small business marketers of gasoline with a gasoline monthly throughput of over 50,000 gallons) will be subject to section 129.61a. GDFs with a monthly throughput of 100,000 gallons per month are subject to the triennial leak testing requirements of the NESHAP. Because more GDFs will be subject to leak testing and repair under this final-form rulemaking, the GDF owners and operators will need to make more repairs. Hoses and nozzles are replaced on average every 3 years. The costs for an ECO hose kit equipped with a low permeation hose and ECO nozzle was assumed to be approximately $195 more than a conventional hose kit equipped with a conventional nozzle. If a hose kit needs to be replaced every 3 years, it would cost a GDF approximately $65.00 per year on average for each refueling point to replace a hose kit. Pressure/vacuum vent valves are replaced on average every 2 years. It was assumed that the average GDF had 2 vent stacks and two pressure/vacuum vent valves. Given this, it would cost the GDF approximately $140 per year to replace pressure/vacuum vent valves. Additional costs of repairs were also considered. These repairs could apply to any kind of equipment failure, such as fixing piping or valves that are stuck open. It was assumed that additional costs of repairs would be approximately $200 per year for each GDF based on Stage II vapor recovery repair costs.[22]

Cost Effectiveness of Enhanced Conventional Nozzles for Reducing Pollution

ECO nozzles potentially cost 3 times more than the conventional nozzle alternative, but at that price difference, the level of cost-effectiveness for VOC emission control provided by the ECO nozzle compares favorably to other potential VOC control measures. The total extra cost associated with supplying ECO nozzles to gasoline dispensing facilities in the subject areas is approximately $975,427 per year. Consumers using these ECO nozzles will save approximately $193,267, estimated by using a

[21] *Air Program Support for Stage I and Stage II Programs in Massachusetts, Final Report*, Eastern Research Group, Inc, de la Torre-Klausmeier Consulting, December 12, 2012, p. 3-7.
[22] *Analysis of Future Options for Connecticut's Gasoline Dispensing Facility Vapor Control Program, Final Report,* Rob Klausmeier, de la Torre Klausmeier Consulting Inc., June 4, 2012, p. 22.

gasoline price of $3.20 per gallon. The total cost to the public would be approximately $782,160 per year. The amount of gasoline that would be prevented from entering the environment will be at least 362 tons per year for this final-form rulemaking. The resulting cost-effectiveness of requiring ECO nozzles is $2,173 per ton averaged over all gasoline dispensing facilities. Considering that VOC emission credits are nearly unavailable in the two areas subject to this final-form rulemaking and would likely be priced at a premium, ECO nozzles are a cost-effective control measure.

Other Considerations

Decommissioning, installing, modification, or repairing of vapor recovery equipment at GDFs will be performed by a company that employs individuals certified to the UMX or UMI certification category. The costs experienced by the owner or operator of the GDFs to have work performed on their equipment will result in revenue for testing companies that operate in Pennsylvania and for Pennsylvanians they employ. Because this final-form rulemaking requires that a person performing this type of work be a certified under sections 129.61a(q) and 129.82a(e), the Department assumes that the work will be performed properly, which may reduce overall costs to GDF owners and operators over time.

Air Quality Benefit of Reduced Gasoline Evaporations

Reduced Emissions

This final-form rulemaking keeps emissions lower than could be achieved under the NESHAP. Emissions of VOC in 2021 will be lower by between 548 and 1,300 tons, and 375 tons and 880 tons, in the 5-county Philadelphia and 7-county Pittsburgh areas, respectively. This final-form rulemaking will also result in an approximate 86% control of hazardous air pollutants.[23]

Cost Savings Due to Reduced Gasoline Evaporation

The ranges of savings in Tables 4 and 5, below, are derived from the ranges in reduced emissions described in the preceding paragraph. Under this final-form rulemaking, GDFs will avoid losing approximately 400,000 to 700,000 gallons of gasoline into the air year every year. Annual gasoline savings for the affected GDFs in the 12 counties were conservatively assumed to be between $1,342,218 to $2,302,584 based on a cost of $3.20 per gallon of gasoline.

Methodology for Estimating Emissions Reductions and Benefits of Leak Testing and Repair

The EPA estimates that GDFs that are inspected for leaks less than annually in a Stage II vapor recovery program (without defining "less than annually") have an in-use control efficiency for controlling gasoline vapor emissions of 62%; that GDFs inspected for leaks annually achieve an in-use control efficiency of 86%; and that GDFs inspected for leaks semi-annually achieve an in-use control efficiency of 92%.[24] (The Department assumed that the same control efficiencies will similarly apply to GDFs without Stage II vapor control systems.) The in-use control efficiency of uninspected GDFs could be much lower than 62%, perhaps approaching an uncontrolled state with a control efficiency of zero. For instance, a GDF with a missing or non-functioning pressure vacuum vent valve would be in a mostly uncontrolled condition, especially when a gasoline tank truck is delivering gasoline to the GDF. The analysis of the benefits of this final-form rulemaking assumed that GDFs subject to this final-form rulemaking (in other

[23] Widespread use determination, 77 FR at p. 28774.
[24] Widespread use determination, 77 FR at p. 28774.

words, GDFs that have a gasoline throughput of over 120,000 gallons per year or more) will achieve 86% in-use control efficiency. This was compared to the vapor leak testing interval required under the NESHAP, which indicates, at best, a 62% in-use control efficiency according to EPA guidance.[25] The Department conservatively assumed that the best in-use control efficiency achievable was 65%. The EPA guidance was crafted with Stage II vapor recovery systems in mind, but Stage I and Stage II vapor recovery systems work hand in hand and have overlapping elements. Therefore, the control efficiency estimates based on the frequency of leak testing and repair are applicable to both. GDFs with a throughput of less than 1,200,000 gallons per year that are not be subject to leak testing and repair requirements under the NESHAP were assumed to have an in-use control efficiency range between 0 and 65%. This range in in-use control gives a range in savings from reduced gasoline evaporation. The last line of Tables 4 and 5 show the anticipated cost savings for owners and operators of GDFs based on this methodology.

Table 3: Costs and Savings to All Businesses

	Philadelphia Area	Pittsburgh Area
Stage II Decommissioning Costs (One-Time)	$5,424,849	$4,219,420
Reduced Stage II Repair Costs due to Decommissioning Stage II (Annual Savings)	$2,912,280	$2,260,440
Additional Testing Costs (Annual)	$535,206	$410,561
Additional Repair Costs (Annual)	$856,021	$661,938
Cost Savings for GDFs from Reduced Gasoline Evaporation (Annual Savings)	$802,982 – $1,374,062	$529,235 – $928,521

Table 4: Costs and Savings to Small Businesses

	Philadelphia Area	Pittsburgh Area
Decommissioning Costs (One-Time)	$1,575,539	1,411,436$
Reduced Stage II Repair Costs due to Decommissioning Stage II (Annual Savings)	$842,379	$752,630
Additional Testing Costs (Annual)	$178,120	$158,930
Additional Repair Costs (Annual)	$166,212	$148,213
Cost Savings for GDFs from Reduced Gasoline Evaporation (Annual Savings)	$206,821 - $408,138	$158,981 - $321,782

Cost Savings to Consumers

Consumers will directly save money from this final-form rulemaking. Low permeation hoses and ECO nozzles would reduce evaporation and spills. Consumers pay for the gasoline in the hose after the dispenser stops pumping. This gasoline does not make it into the vehicle's fuel tank, but the next consumer benefits by receiving the gasoline remaining in the hose. In conventional hoses, more gasoline evaporates after a consumer dispenses gasoline, which means the next consumer is paying partially for air. Consumers using low permeation hoses and ECO nozzles would receive an economic benefit by eliminating this air in the hose and nozzle. In the 12-county area, consumers using low permeation hoses will save approximately 67,000 gallons of gasoline annually, which amounts to a $213,558 annual cost benefit to consumers. Consumers using ECO nozzles will receive an economic benefit by eliminating spills and evaporation from the nozzle. In the 12-county area, consumers using ECO nozzles would save approximately 60,000 gallons of gasoline annually, which amounts to a $193,267 annual cost benefit to

[25] *Technical Guidance – Stage II Vapor Recovery System for Control of Vehicle Refueling Emissions at Gasoline Dispensing Facilities, Volume I: Chapters,* EPA – 450/3-91-022a, November 1991, Figure 4-15.

consumers. Conversely, in exchange for the consumer savings, the GDF sales would diminish similarly and their profits would be slightly diminished.

Social Impact

Gasoline vapors are comprised of a mixture of VOCs. As mentioned above in response to Question 10, VOCs are a precursor to the formation of ozone. Some VOCs are chemical compounds that are considered hazardous air pollutants. This final-form rulemaking keeps emissions of these VOCs at current levels, which keeps ozone formation in check and reduces human exposure to toxic compounds. Annual leak testing and repair rather than triennial leak testing will keep annual VOC emission between 548 and 1,300 tons lower in the 5-county Philadelphia area, and between 375 and 880 tons lower in the Pittsburgh area. In addition, low permeation hoses will reduce evaporative emissions in the 5-county Philadelphia and 7-county Pittsburgh areas by 200 tons per year.[26] ECO nozzles, by reducing spills more than conventional nozzles, will reduce annual evaporative emissions by 108 tons and 73 tons in the 5-county Philadelphia and 7-county Pittsburgh areas, respectively.[27] In addition, an equal amount of gasoline from nozzles spills will be prevented from reaching sources of surface and ground water. This final-form rulemaking reduces toxic chemicals in the environment and reduces human exposure in the surrounding community, especially for those who work and fill their vehicles at GDFs.

(18) Explain how the benefits of the regulation outweigh any cost and adverse effects.

This final-form rulemaking lowers emissions of ozone-contributing VOCs and air toxic pollution. The reduction of VOC emissions in heavily populated urban areas is especially beneficial for reducing the formation of atmospheric ozone. Typically, urban areas are VOC-limited, meaning that VOC emissions are more likely to be converted directly into atmospheric 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. The cost of control equipment is partially to totally offset, depending on the gasoline throughput of the GDF, by reducing evaporation and subsequent venting of gasoline into the atmosphere.

Fewer spills and less evaporation resulting from low permeation hoses and ECO nozzles will reduce contamination of sources of surface water and groundwater, and protect the ecology of Pennsylvania's streams and their surrounding ecosystems. Reduced spillage also means less gasoline would contact the skin of motorists refueling their vehicles. Chemical components of gasoline can, upon contact, penetrate human skin and the underlying tissue. Some of gasoline's components have carcinogenic and mutagenic properties.

As stated in response to Question 17, above, decommissioning Stage II vapor recovery equipment will cost between $4,000 and $6,000 per GDF, depending on the number of dispensers. The annual amount of costs 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

[26] Attachment 5, Proposed Emission Factor for Gasoline Dispensing Hose Permeation at California Gasoline Dispensing Facilities, ARB Monitoring and laboratory Division, December 23, 2013.
[27] Appendix G, ARB Cost Effectiveness Report: Estimated Emission Reductions and Costs of Enhanced Conventional (ECO) Nozzle Proposal, Prepared By: Engineering and Certification Branch Monitoring and Laboratory Division, January 20, 2015.

and adjusted for a 30% tax deduction). Decommissioning costs should be offset in 2 years by reducing Stage II repair costs.

The Department expects that annual vapor leak testing under section 129.61a will cost approximately $750 for each facility. The cost would be approximately $1.0 million a year more than the cost to comply with the NESHAP (($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). Repairs under this final-form rulemaking are estimated to cost the owners and operators $1.5 million more ($2.5 million for repairs for this final-form rulemaking minus $1.0 million for repairs associated with the NESHAP; repairs include replacement of P/V vent valves, low permeation hoses, ECO nozzles, and underground piping) than the repairs under the NESHAP. Most of the increase in repair costs will be attributed to increased replacement costs of low permeation hoses and ECO nozzles. The amount of gasoline that GDFs will save from reduced evaporation is in the range of $1.3 million to $2.3 million per year (the estimated gallons of gasoline saved from vapor leak testing and repair are 419,443 to 719,558 multiplied by an estimated cost of $3.20 a gallon of gasoline). In addition, consumers will benefit from the reduced evaporation from hoses and reduced evaporation and small spills from nozzles. Although requiring low permeation hoses and ECO nozzles is 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 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 gallon). In addition, ozone and hazardous air pollution will be reduced and surface and ground water contamination will be avoided.

A concern was raised by the IRRC during the comment period that the Board should address, in the Preamble and Regulatory Analysis Form (RAF), 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. First, no evidence collected by a study exists that suggest using ECO nozzles creates negative environmental impacts. CARB is considering tightening the emission factor associated with ECO nozzles because preliminary evidence suggests that ECO nozzles are exceeding the current performance standard of 0.12 lb/kgal. The current performance standard for ECO nozzles greatly limits spills when compared to conventional nozzles. Second, 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. 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.

Overall, this final-form rulemaking will pay for itself by authorizing or requiring, as applicable, the decommissioning of Stage II vapor recovery systems, because decommissioning Stage II vapor recovery systems will eliminate repair costs for Stage II vapor recovery systems. The cost of gasoline that will evaporate without this final-form rulemaking partially to totally offsets the cost of testing and repairs under section 129.61a, depending on the GDF's gasoline throughput. The consumer will experience savings from reduced gasoline losses that normally result from evaporate or spill from hoses and nozzles.

(19) Provide a specific estimate of the costs and/or savings to the regulated community associated with compliance, including any legal, accounting or consulting procedures which may be required. Explain how the dollar estimates were derived.

Types of Compliance Costs

Owners and operators of GDFs will require consultant services to perform annual vapor leak testing under this final-form rulemaking. Owner and operators of GDFs currently require consultant services to perform annual leak testing under section 129.82. In the absence of this final-form rulemaking, many GDF owners and operators would require consultant services to perform triennial vapor leak testing required by the NESHAP.

Methodology for Determining Number of Affected Parties

To determine how many owners and operators will be impacted by the need for consultant services, the Department conducted the 2012 GDF survey in the Philadelphia and Pittsburgh areas. Over 60% of the GDF owners or operators surveyed responded to the survey. This represented most of the gasoline throughput in the two areas given that retail GDFs had the highest response rate. The Department used web searches to identify GDFs that were unresponsive to the survey. Statistical methods were used to estimate the types of the unresponsive GDFs and their throughput to estimate costs and benefits. Costs and savings for all regulated businesses are given in Table 3, above.

Characterization of GDFs Affected

The Department estimates that a total of 1,981 GDF locations will be affected by this final-form rulemaking. These facilities each have a gasoline throughput above 120,000 gallons per year. The highest throughput retail GDFs sell over 8 million gallons of gasoline annually. The number of dispensers at each GDF normally ranges from 4 to 10, but most large GDFs average approximately 8 dispensers.

Decommissioning Costs and Savings

Decommissioning costs under section 129.82a will average approximately between $4,000 and $6,000 per GDF. A description of the items and actions included in the decommissioning costs is given in response to Question 17, above. After decommissioning, approximately $3,000 annual Stage II vapor recovery equipment repair costs will be eliminated for each GDF.

Vapor Leak Testing and Repair, Hoses and Nozzle Costs and Savings

The Department expects that annual vapor leak testing under section 129.61a will cost approximately $750 for each facility each year or approximately $1 million for all GDFs subject to this final-form rulemaking. 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 would increase approximately 2% per year. At retail GDFs, typically, the largest cost in repair is caused when drivers drive off with the nozzle still placed in the fill pipe. No data exists for how often the GDF recovers the costs of this activity from the GDF customer. The average 3-year replacement cycle for hose kits was assumed. This final-form rulemaking requires an additional cost of $64.50 per hose kit per year. Owners and operators of GDFs with more refueling points will pay more for hose kit repair. The total annual

repair costs for hose kits are estimated to be $1.1 million more than required for compliance under the NESHAP (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.) By Department estimates, vapor leak testing and performing necessary repairs will save the owner or operator of a GDF, depending on the throughput of the GDF, between $400 and $6,000 per year by reducing gasoline evaporation from USTs. The regulated community will save from $1.3 million to $2.3 million through reducing gasoline evaporation by reducing leaks.

The costs and savings described in this response were reduced 30% for the tax deductions that businesses are anticipated to receive from investing in capital and performing testing and repairs, although the tax benefit may be larger than 30% in some instances.

Potential Impacts on Consultation Services

Individuals who decommission, install, modify or repair gasoline vapor recovery equipment will need to be certified under Chapter 245, Subchapters A and B. This could increase training costs for these individuals and the companies they work for, but with the end goal of reducing mistakes and potentially dangerous situations. The Department anticipates that most of the people who will be required to have this certification already have it and will not bear new costs as a result of this requirement.

No legal, accounting or consulting costs or savings to the regulated community are anticipated from this final-form rulemaking beyond costs incurred from engaging companies that perform vapor leak testing.

(20) Provide a specific estimate of the costs and/or savings to local governments associated with compliance, including any legal, accounting or consulting procedures which may be required. Explain how the dollar estimates were derived.

Types of Compliance Costs

Operators of local government GDFs will need consultant services to perform annual vapor leak testing under this final-form rulemaking. Operators of local government GDFs currently require consultant services to perform annual leak testing under section 129.82. In the absence of this final-form rulemaking, local government GDF operators would require consultant services to perform triennial vapor leak testing required by the NESHAP.

Methodology for Determining Number of Affected Parties

To determine how many owners and operators will be impacted by the need for consultant services, the Department relied on the 2012 GDF survey to generate costs and/or savings associated with local governments, concluding that only one GDF operated by a local government will be subject to this final-form rulemaking. As described in response to Question 19, above, the response rate to the Department survey was over 60%. The response rate of government entities was much lower: approximately 30% of government facilities that operated USTs responded. Among those that responded, only one government-operated facility, a GDF operated by the Pennsylvania Turnpike Commission, will be subject to this final-form rulemaking. The operator of the facility indicated a facility throughput over the 120,000-gallon threshold to trigger this final-form rulemaking. The Pennsylvania Turnpike Commission facility is a State government-operated GDF, not a local government-operated GDF. To determine the

likely number of local government-operated GDFs, the distribution of survey responses was applied to the government GDFs that did not respond.

Characterization of GDFs Affected

In the Pittsburgh area, the distribution indicated that 3% of all government-operated GDFs, or 4 GDFs, likely had a throughput that would trigger compliance with this final-form rulemaking. The Department's statistical projection indicated that 1 of these facilities would likely be operated by a local government. The distribution indicated that no government-operated GDFs would exceed the throughput threshold in the 5-county Philadelphia area. The local government GDF projected to be affected by this final-form rulemaking would likely have a gasoline throughput in the 120,000 to 1.2 million-gallon range. The 2012 GDF survey indicated that local government GDF average throughput in the Pittsburgh area were approximately 540,000 gallons per year. It would most likely have 4 dispensers and 2 hose kits for each dispenser.

Decommissioning Costs and Savings

Decommissioning costs under section 129.82a will be approximately $5,700 for one local GDF. A description of the items and actions included in the decommissioning costs is given in response to Question 17, above; however, the 30% reduction in cost due to a tax deduction will not be applicable for a local government. After decommissioning, approximately $3,000 annual Stage II vapor recovery equipment repair costs will be eliminated for each GDF.

Vapor Leak Testing and Repair, Hoses and Nozzle Costs and Savings

The Department expects that annual vapor leak testing will cost approximately $750 for the one local government GDF. It was assumed that the vapor leak testing and repair costs would increase approximately 2% per year. Performing annual vapor leak testing instead of triennial testing required by the NESHAP would reduce gasoline evaporation at the GDF and save the GDF between $290 and $1,875 per year. These savings estimates were derived from comparing the minimum and maximum difference in emission between GDFs that would operate with and without performing leak testing. This final-form rulemaking will require vapor leak testing for the local government GDF, whereas the NESHAP would not because the GDF's throughput would be below the 1.2 million-gallon annual threshold.

The average amount of gasoline prevented from evaporating would be between 92 and 586 gallons per GDF, depending on the GDFs control efficiency of the in-use emissions control. For reduced gasoline evaporation and spills, these facilities should save $182 and $159 per year for having low permeation hoses and ECO nozzles, respectively. The total annual savings estimate from reduced evaporation and spills to this GDFs would be $341. The cost of gasoline was assumed to be $3.20 per gallon. Gasoline consumption in Pennsylvania has been declining for the last 7 years. It is projected to decline further. This decline would lower the savings of this final-form rulemaking in future years. It was assumed that the decline in gasoline use would decline by 1% per year for the short- to intermediate-term.

Typically, the largest dispenser-related expense for retail GDFs is replacing hose kits when motorists drive off with the nozzles still placed in the fill pipe. Replacements of hoses and nozzles would probably be less frequent at a government facility because government employees who work with vehicles are likely to be trained in vehicle operation and maintenance or to have received training regarding vehicle refueling. As noted in response to Question 19, above, the average cost estimates for all facilities assume a 3-year average lifespan for hoses and nozzles. That average lifespan accounts for the fact that retail GDF hose kits have a lifespan less than non-retail (such as government-operated) GDF hose kits.

Nonetheless, for purposes of this rulemaking analysis, it was conservatively assumed that the lifespan of a hose kit at a government-operated GDF would be 3 years. Hose kits would be replaced less frequently than at retail GDFs, but assuming the average 3-year replacement, this final-form rulemaking would require an additional cost of $64.50 per hose kit per year. Assuming 8 hose kits per facility, the facility would be required to pay $516 on average more than what would be required by the NESHAP. Other repairs made to equipment such as pressure/vacuum vent valves and leaking connections were estimated to cost the local GDF approximately $340 per year.

No legal, accounting or consulting costs or savings to the regulated community are anticipated from this final-form rulemaking beyond costs incurred from engaging companies that perform vapor leak testing under section 129.61a.

(21) Provide a specific estimate of the costs and/or savings to the state government associated with the implementation of the regulation, including any legal, accounting, or consulting procedures which may be required. Explain how the dollar estimates were derived.

Types of Compliance Costs

Operators of State government GDFs will require consultant services to perform annual vapor leak testing under this final-form rulemaking. Operators of local government GDFs currently require consultant services to perform annual leak testing under section 129.82. In the absence of this final-form rulemaking, State government GDF operators would require consultant services to perform triennial vapor leak testing required by the NESHAP.

Methodology for Determining Number of Affected Parties

To determine how many owners and operators will be impacted by the need for services of consulting, the Department relied on the 2012 GDF survey to generate costs and/or savings associated with State governments, concluding that only 3 GDF operated by the State government would be subject to this final-form rulemaking. As stated in the response to Question 19, the Department relied on the 2012 GDF survey to generate costs and/or savings associated to local governments. A characterization of the percentage of government GDF responses to the 2012 GDF survey was given in the response to Question 20. To determine the number of likely State government-operated GDFs, the distribution of responses was applied to the government GDFs that did not respond to the 2013 GDF survey.

Characterization of GDFs Affected

In the Pittsburgh area, the distribution indicated that 3% of all government-operated GDFs, or 4 GDFs, likely had a throughput that would trigger compliance with this final-form rulemaking. The Department's statistical projection indicated that 3 of these facilities would be a State government that operated in the Pittsburgh area. The distribution indicated that no government-operated GDFs would exceed the throughput threshold in the 5-county Philadelphia area. The local government GDF projected to be affected by this final-form rulemaking would likely have a gasoline throughput in the 120,000 to 1.2 million-gallon range. The 2013 GDF survey indicated that the average throughputs of GDFs in this range in the Pittsburgh area are approximately 540,000 gallons per year. It would most likely have 4 dispensers and 2 hose kits for each dispenser.

Decommissioning Costs and Savings

Decommissioning costs under section 129.82a will be approximately $5,700 per facility or $17,100 for 3 State GDFs. A description of the items and actions included in the decommissioning costs is given in

response to Question 17, above; however, the 30% reduction in cost due to a tax deduction would not be applicable for a state government. Annual Stage II vapor recovery equipment repair costs would be reduced by approximately $3,000 per government facility.

Vapor Leak Testing and Repair, Hoses and Nozzle Costs and Savings

The Department expects that annual testing would cost approximately $750 extra per facility or $2,250 for the 3 State GDFs. It was assumed that vapor leak testing and repair cost would increase by approximately 2% per year. Performing annual leak testing instead of triennial testing required by the NESHAP would save these GDFs between $290 and $1,875 per year per GDF. For three facilities, leak testing would save these facilities between $870 and $5,625 per year. These savings estimates were derived from comparing the minimum and maximum difference in emission between GDFs that would operate with and without performing leak testing. This final-form rulemaking requires vapor leak testing for the State government GDF, whereas the NESHAP would not because the GDF's throughput would be below the 1.2 million-gallon annual threshold.

The average amount of gasoline prevented from evaporating would be between 92 and 586 gallons per GDF, depending on the GDFs control efficiency of the in-use emissions control. For reduced gasoline evaporation and spills, each of these State facilities should save $182 and $159 per year for having low permeation hoses and ECO nozzles, respectively. The total annual savings estimate from reduced evaporation and spills to 3 State government GDFs would be $1,023. The cost of gasoline was assumed to be $3.20 per gallon. Gasoline consumption in Pennsylvania has been declining for the last 7 years. It is projected to decline further. This decline would lower the savings of this final-form rulemaking in the future. It was assumed that the decline in gasoline use would decline by 1% per year for the short- to intermediate term.

As previously stated, the largest dispenser-related expense, typically, for retail GDFs is due to replacing hose kits when motorists drive off with the nozzles still placed in the fill pipe. As previously stated, replacements of hoses and nozzles would probably be less frequent at a government facility (please see the response to Question 20 for explanation). The average cost estimates for all facilities assume a 3-year average lifespan for hoses and nozzles. Retail GDF hose kits would have a lifespan less than for non-retail GDFs, such as those owned by governments. It was conservatively assumed that the life cycle of a hose kit at a government GDF would be 3 years. Assuming a conservatively estimated 3-year replacement, this final-form rulemaking will require an additional cost of $64.50 per hose kit per year. Assuming 8 hose kits per facility, each facility would be required to pay $516 on average more than what would be required by the NESHAP or $1,548 for 3 State government GDFs. Other repairs made to equipment such as pressure/vacuum vent valves and leaking connections would cost each GDF approximately $340 per year or $1,020 per year for all three State government GDFs. It was assumed that the leak testing and repair costs would increase approximately 2% per year.

No legal, accounting or consulting costs or savings to the regulated community are anticipated from this final-form rulemaking beyond costs incurred from engaging companies that perform vapor leak testing under section 129.61a.

(22) For each of the groups and entities identified in items (19)-(21) above, submit a statement of legal, accounting or consulting procedures and additional reporting, recordkeeping or other paperwork, including copies of forms or reports, which will be required for implementation of the regulations and an explanation of measures which have been taken to minimize these requirements.

For both Stage I and Stage II vapor recovery equipment under sections 129.61a and 129.82, this final-form rulemaking clarifies and minimally expands recordkeeping and reporting requirements in existing section 129.82. This final-form rulemaking also adds minimal recordkeeping and reporting requirements for continuous pressure monitoring requirements under section 129.61a and a decommissioning requirement under section 129.82a. Owners and operators of GDFs should already be completing most of the recordkeeping in this final-form rulemaking because records and reporting are required under the existing Stage II vapor recovery regulations and for Stage I vapor recovery equipment under sections 63.11125 and 63.11126 of the NESHAP (relating to What are my recordkeeping requirements?; and What are my reporting requirements?). These records are useful as part of an environmental and business best practices program to track maintenance issues at their facility and limit gasoline evaporation.

In response to public comments received, the Board amended sections 129.61a, 129.82 and 129.82a to allow owners and operators of GDFs to store records electronically, as an alternative to keeping written records, for onsite examination. This change could help some GDF owners and operators who keep records electronically meet the recordkeeping requirements specified in this final-form rulemaking.

The owners or operators of GDFs will be required to perform additional recordkeeping. Section 129.61a(m) requires recordkeeping for 2 or 6 years, as specified, relating to vapor leak rate monitoring while using specified test procedures, results of the test procedures, the test procedures used when installing Stage I vapor recovery systems, inspecting Stage I vapor recovery system components and other gasoline dispensing components and any repairs made, results of continuous pressure monitoring, operability of the continuous pressure monitoring system and any associated failures and a continuous pressure monitor failure or alarm and the actions taken. The owner or operator of a GDF is be required to submit the records maintained under section 129.61a(m) upon Department request.

This final-form rulemaking also clarifies existing recordkeeping obligations under section 129.82(c)(3)(iv). Owners and operators of GDFs should already be completing most of the recordkeeping requirements.

This final-form rulemaking does not require recordkeeping or reporting of other entities identified in response to Questions 19-21.

No legal, accounting or consulting costs or savings to the regulated community are anticipated from this final-form rulemaking beyond costs incurred from engaging companies that perform vapor leak testing under section 129.61a. Most GDF owners and operators already contract for these vapor leak testing.

(22a) Are forms required for implementation of the regulation?

Yes. Owners or operators of GDFs that decommission Stage II vapor recovery equipment will have minimal new recordkeeping and reporting requirements under 129.82a(d)(4). Upon decommissioning under section 129.82a, the owner or operator is 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. The owner or operator will need to send this form to the appropriate DEP Regional Office, the Philadelphia Air Management Services or the Allegheny County Health Department.

(22b) If forms are required for implementation of the regulation, attach copies of the forms here. If your agency uses electronic forms, provide links to each form or a detailed description of the information required to be reported. Failure to attach forms, provide links, or provide a detailed description of the information to be reported will constitute a faulty delivery of the regulation.

The draft form, Stage II Vapor Recovery System Decommissioning Notification Form, is attached to this Regulatory Analysis Form.

(23) In the table below, provide an estimate of the fiscal savings and costs associated with implementation and compliance for the regulated community, local government, and State government for the current year and five subsequent years.

	Current FY Year	FY +1 Year	FY +2 Year	FY +3 Year	FY +4 Year	FY +5 Year
SAVINGS:	**$**	**$**	**$**	**$**	**$**	**$**
Regulated Community	0	6,505,559 – 7,462,823	6,595,433 – 7,543,124	6,685,307 – 7,623,426	6,775,181 – 7,703,727	6,865,055 – 7,784,029
Local Government	0	2,345 – 3,120	2,384 – 3,152	2,424 – 3,184	2,463 – 3,215	2,503 - 3,247
State Government	0	7,034 – 9,360	7,152 – 9,456	7,271 – 9,551	7,390 – 9,646	7,508 – 9,742
Total Savings	0	6,514,938 – 7,475,304	6,604,970 – 7,555,732	6,695,002 – 7,636,161	6,785,034– 7,716,589	6,875,066 – 7,797,018
COSTS:						
Regulated Community	0	12,079,382	2,488,216	2,537,983	2,588,747	2,646,529
Local Government	0	7,153	1,467	1,496	1,525	1,554
State Government	0	21,460	4,402	4,488	4,574	4,661
Total Costs	0	12,107,996	2,494,085	2,543,967	2,594,846	2,646,743
REVENUE LOSSES:						
Regulated Community	0	444,802	440,354	435,951	431,591	427,275
Local Government	0	-135,450	-138,159	-140,868	-143,577	-146,286
State Government	0	-24,686 – 151,481	-32,566 – 141,839	-40,447 – 132,197	-48,327 – 122,555	-56,207 – 112,914
Total Revenue Losses	0	284,666 – 460,833	269,629 – 444,034	254,636 – 427,280	239,688 – 410,570	224,783 – 393,903

(23a) Provide the past three-year expenditure history for programs affected by the regulation.

Program	FY -3 (18/19)	FY -2 (19/20)	FY -1 (20/21)	Current FY
Environmental Program Management (161-10382)	$30,932,000	$27,920,000	$32,041,000	$34,160,000
Clean Air Fund Major Emission Facilities (215-20077)	$17,878,000	$18,759,000	$20,801,000	$20,083,000
Clean Air Fund Mobile and Area Facilities (233-20084)	$9,369,000	$9,900,000	$11,290,000	$10,153,000

(24) For any regulation that may have an adverse impact on small businesses (as defined in Section 3 of the Regulatory Review Act, Act 76 of 2012), provide an economic impact statement that includes the following:

(a) An identification and estimate of the number of small businesses subject to the regulation.

The types of small businesses that will be subject to this final-form rulemaking include the owners and operators of GDFs statewide that operate Stage I or Stage II vapor recovery systems. Types of small businesses affected may be airport/aviation companies, cemeteries, marinas, retail gas stations, service stations and some fuel terminal operators. Companies that test, repair and install Stage I and Stage II vapor recovery equipment will also be affected.

To estimate numbers of small businesses subject to this final-form rulemaking, the Department assessed gasoline stations with convenience stores, other gasoline stations and gasoline merchant wholesalers identified under 13 CFR Chapter 1, Part 121 as small businesses. The Department estimated that 642 small businesses will be affected in this Commonwealth.

For more detail, please see the response to Question 15, above.

(b) The projected reporting, recordkeeping and other administrative costs required for compliance with the proposed regulation, including the type of professional skills necessary for preparation of the report or record.

The projected changes in reporting, recordkeeping and other administrative costs will be *de minimis* under this final-form rulemaking. The vapor leak rate inspections that will be required to be performed at the GDF under section 129.61a(d) only differ slightly from the vapor leak rate inspections required under existing section 129.82 and the NESHAP. Under existing section 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 section 129.61a(g)(2) will take one person less than 15 minutes to complete. Under section 129.61a(g)(1) GDF staff will be required 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 section 129.61a(g)(3). This will not take more than 5 minutes and could possibly be completed during the visual inspections. Training of staff at the GDF could be accomplished on-the-job. If the owner or operator were to choose to install a continuous pressure monitor under section 129.61a(c) instead of performing periodic vapor leak testing, the continuous pressure monitor would generate and store a report under section 129.61a(h), avoiding the staff time.

Under the amendments in the final-form rulemaking, individuals who perform vapor recovery system decommissioning, installation, modification 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. In the Department's Storage Tank Program's records, there are 358 individuals listed as being certified as UMX and 12 individuals certified as UMI UST installers throughout Pennsylvania. Many individuals with the appropriate certification are in or near the Philadelphia and Pittsburgh areas that are subject to this final-form rulemaking.

(c) A statement of probable effect on impacted small businesses.

Small businesses will benefit from decommissioning Stage II vapor recovery systems under section 129.82a because reduced costs from repairs to Stage II vapor recovery equipment offsets the cost of decommissioning Stage II vapor recovery equipment in less than 2 years. Leak testing and repair costs under section 129.61a will be partially to fully offset by reductions in gasoline evaporation that occurs from leak testing and repair. GDFs with a throughput that exceeds 1.2 million gallons of annual gasoline, some of which may be small businesses, should experience a savings due to leak testing and repair when the annual throughput exceeds 2.7 million gallons. GDFs with an annual throughput more than 120,000 gallons and less than 1.2 million gallons will not experience an increase in annual testing and repair costs of more than $1,414. The GDFs with throughputs in this range would not be required to receive vapor testing under the NESHAP. Without vapor leak testing, vapor leaks would likely become severe. Because of the requirement to test for vapor leaks, this final-form rulemaking provides a cost benefit to the GDF in the form of limiting the evaporation of gasoline. This offsets much of the additional testing and repair costs.

(d) A description of any less intrusive or less costly alternative methods of achieving the purpose of the proposed regulation.

There are no less intrusive or less costly alternative regulatory provisions available that have not been considered in developing this final-form rulemaking. This rulemaking provides an option under section 129.61a(c)(2) for the GDF owner or operator to install a continuous pressure monitoring system that eliminate the need for nearly all visual inspections and leak testing. The owner of the GDF will need to make an informed decision 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. In addition, a continuous pressure monitor system requires an enhanced Stage I vapor recovery system to be installed at the GDF. If the GDF already has an enhanced Stage I vapor recovery

system or is installing one at a new GDF or when USTs are being replaced, using a continuous pressure monitor system may be cost-effective. Retrofitting an existing GDF with an enhanced Stage I vapor recovery system to use a continuous pressure monitoring system is not cost-effective. 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.

(25) List any special provisions which have been developed to meet the particular needs of affected groups or persons including, but not limited to, minorities, the elderly, small businesses, and farmers.

No special provisions were developed or needed.

(26) Include a description of any alternative regulatory provisions which have been considered and rejected and a statement that the least burdensome acceptable alternative has been selected.

This final-form rulemaking requirements are based mostly on the current requirements in Pennsylvania's Stage I and Stage II vapor recovery regulations and surrounding States' Stage I and Stage II vapor recovery regulations. These requirements represent the least burdensome acceptable alternative. One alternative considered was to require Stage II vapor balance vapor recovery systems to be decommissioned under section 129.82a along with vacuum-assist vapor recovery systems. This alternative was rejected in favor of leaving the choice of continuing to operate a Stage II vapor balance vapor recovery system to the GDF owner and operator because no air quality incompatibility issues exist between vapor balance vapor recovery systems and ORVR systems on vehicles. Properly maintained vapor balance vapor recovery systems can reduce refueling emissions produced by pre-ORVR system vehicles.

Another alternative considered by the Department was to require CARB-certified Stage I enhanced vapor recovery systems at each GDF. Enhanced vapor recovery systems would increase in-use control efficiency by approximately 5% to 7% at each GDF, but these systems were found to be costly, with a minimum cost of over $20,000 to retrofit each GDF, and consequently, not very cost-effective. This alternative was rejected.

The final alternative considered by the Department was to require a vapor pressure management system. This type of system would increase in-use control efficiency by 5%. Vapor pressure management systems were also found to be costly, with a cost of $30,000 to install at each GDF, and consequently, not very cost-effective. The Department rejected this alternative.

(27) In conducting a regulatory flexibility analysis, explain whether regulatory methods were considered that will minimize any adverse impact on small businesses (as defined in Section 3 of the Regulatory Review Act, Act 76 of 2012), including:

a) The establishment of less stringent compliance or reporting requirements for small businesses;

The compliance and reporting requirements are necessary for any GDF to limit vapor leaks and spills. Many small businesses, however, will be exempted outright from the vapor leak monitoring and related

requirements under section 129.61a of the final-form rulemaking because their monthly gasoline throughput is less than 10,000 gallons a month. Owners and operators of GDFs that are independent small business marketers of gasoline with a gasoline monthly throughput of over 50,000 gallons will likewise be exempted from the vapor leak monitoring and related requirements under section 129.61a. A monthly throughput of less than 10,000 gallons (or 50,000 gallons) is the current applicability threshold in the Stage II vapor recovery regulations under section 129.82 and is used as the applicability threshold under section 129.61a.

b) The establishment of less stringent schedules or deadlines for compliance or reporting requirements for small businesses;

This final-form rulemaking does not include less stringent schedules, deadlines or reporting requirements for small businesses because owners and operators of GDFs should be able to meet the deadlines and requirements, including the compliance deadline for decommissioning Stage II vacuum-assist vapor recovery systems. Less stringent reporting requirements are not warranted because reporting requirements under section 129.82a are minimal and will be part of the decommissioning process that is mostly be carried out by the company performing the decommissioning as a one-time event.

c) The consolidation or simplification of compliance or reporting requirements for small businesses;

Consolidation or simplification of compliance or reporting or recordkeeping requirements for small businesses is not necessary or appropriate in this final-form rulemaking. The primary purpose of this final-form rulemaking is to require owners and operators of GDFs to check for leaks on a regular basis. The periodic inspection and associated recordkeeping requirements for small businesses need to be the same as for larger businesses. A small business owner or operator of a GDF could have more gasoline throughput than a chain-owned or chain-operated GDF, and therefore, release as many emissions. This protective factor warrants equal compliance and reporting requirements.

d) The establishment of performance standards for small businesses to replace design or operational standards required in the regulation; and

This final-form rulemaking does not include performance standards for anyone because it does not include design or operational standards that could be replaced by a performance standard.

e) The exemption of small businesses from all or any part of the requirements contained in the regulation.

Please see the answer in subsection (a) of this question.

(28) If data is the basis for this regulation, please provide a description of the data, explain <u>in detail</u> how the data was obtained, and how it meets the acceptability standard for empirical, replicable and testable data that is supported by documentation, statistics, reports, studies or research. Please submit data or supporting materials with the regulatory package. If the material exceeds 50 pages, please provide it in a searchable electronic format or provide a list of citations and internet links that, where possible, can be accessed in a searchable format in lieu of the actual material. If other data was considered but not used, please explain why that data was determined not to be acceptable.

Air Quality: Widespread Use for Onboard Vapor Recovery and Stage II Waiver, Fed. Reg. Volume 77, No. 55, May 16, 2012. See https://www.govinfo.gov/content/pkg/FR-2012-05-16/pdf/2012-11846.pdf

Guidance on Removing Stage II Gasoline Vapor Control Programs from State Implementation Plans and Assessing Comparable Measures, United States Environmental Protection Agency, H. Lynn Dail et. al., EPA-457/B-12-001, August 7, 2012. See https://www3.epa.gov/ttn/naaqs/aqmguide/collection/cp2/20120807_page_stage2_removal_guidance.pdf

Analysis of Future Options for Connecticut's Gasoline Dispensing Facility Vapor Control Program, Final Report, Rob Klausmeier, de la Torre-Klausmeier Consulting, Inc., June 4, 2012. See https://www.ct.gov/deep/lib/deep/air/stageii/final-report_future_options_gdf_vapor-control-program_(dkc-finalreport).pdf

Air Program Support for Stage I and Stage II Program in Massachusetts, Final Report, Eastern Research Group, Inc. de la Torre-Klausmeier Consulting, December 12, 2012. Copy is attached.

Journal of Contaminant Hydrology 170(2014) 39-52, Infiltration and evaporation of small hydrocarbon spills at gas stations, Marcus Hilpert et. al., Department of Environmental Health Sciences, Johns Hopkins University, 2014. Copy is attached.

Stage II Vapor Recovery System for Control of Vehicle Refueling Emissions at Gasoline Dispensing Facilities, Volume I: Chapters, EPA – 450/3-91-022a, November 1991. See https://www3.epa.gov/ttn/ctg_act/199111_voc_epa450_3-91-022a_stage2_gasoline_dispensing(v1).pdf

Attachment 5, Proposed Emission Factor for Gasoline Dispensing Hose Permeation at California Gasoline Dispensing Facilities, ARB Monitoring and Laboratory Division, December 23, 2013. See https://ww3.arb.ca.gov/vapor/gdf-emisfactor/attachment5.pdf

Appendix G, ARB Cost Effectiveness Report: Estimated Emission Reductions and Costs of Enhanced Conventional (ECO) Nozzle Proposal, Prepared By: Engineering and Certification Branch Monitoring and Laboratory Division, January 20, 2015.
See https://ww3.arb.ca.gov/regact/2015/vapor2015/vapor15appg.pdf

(29) Include a schedule for review of the regulation including:

A. The length of the public comment period:	66 days
B. The date or dates on which any public meetings or hearings will be held:	Public hearings held October 27, 28 & 29, 2020
C. The expected date of delivery of the final-form regulation:	Quarter 4, 2021
D. The expected effective date of the final-form regulation:	Upon publication in the *Pennsylvania Bulletin*
E. The expected date by which compliance with the final-form regulation will be required:	Upon publication in the *Pennsylvania Bulletin*
F. The expected date by which required permits, licenses or other approvals must be obtained:	Upon publication in the *Pennsylvania Bulletin*

(30) Describe the plan developed for evaluating the continuing effectiveness of the regulations after its implementation.

The Department will closely monitor this final-form rulemaking after publication in the *Pennsylvania Bulletin* for its effectiveness and recommend updates to the Board as necessary.