

# RULES AND REGULATIONS

## Title 25—ENVIRONMENTAL PROTECTION

### ENVIRONMENTAL QUALITY BOARD

[ 25 PA. CODE CH. 129 ]

#### Control of Volatile Organic Compound Emissions from Automobile and Light-Duty Truck Assembly Coating Operations and Heavier Vehicle Coating Operations

The Environmental Quality Board (Board) amends Chapter 129 (relating to standards for sources) to read as set forth in Annex A. This final-form rulemaking adds § 129.52e (relating to control of VOC emissions from automobile and light-duty truck assembly coating operations and heavier vehicle coating operations) to adopt reasonably available control technology (RACT) requirements and RACT emission limitations for stationary sources of volatile organic compound (VOC) emissions from automobile and light-duty truck assembly coating operations and heavier vehicle coating operations including primer, primer-surfacer, topcoat and final repair coating materials, as well as VOC emissions from additional coatings applied during the vehicle assembly process and related cleaning activities. This final-form rulemaking also adds terms and definitions to § 129.52e to support the interpretation of the final-form measures and amends § 129.51 (relating to general) to support the addition of § 129.52e.

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

This final-form rulemaking is given under Board order at its meeting of June 21, 2016.

#### A. Effective Date

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

#### B. Contact Persons

For further information, contact Kirit Dalal, Chief, Division of Air Resource Management, Bureau of Air Quality, Rachel Carson State Office Building, P.O. Box 8468, Harrisburg, PA 17105-8468, (717) 772-3436; or Jesse C. Walker, Assistant Counsel, Bureau of Regulatory Counsel, Rachel Carson State Office Building, P.O. Box 8464, Harrisburg, PA 17105-8464, (717) 787-7060. Persons with a disability may use the Pennsylvania AT&T Relay Service, (800) 654-5984 (TDD users) or (800) 654-5988 (voice users). This final-form rulemaking is available on the Department of Environmental Protection's (Department) web site at [www.dep.pa.gov](http://www.dep.pa.gov) (select "Public Participation," then "Environmental Quality Board (EQB)").

#### C. Statutory Authority

This final-form rulemaking is authorized under section 5(a)(1) of the Air Pollution Control Act (act) (35 P.S. § 4005(a)(1)), which grants the Board the authority to adopt rules and regulations for the prevention, control, reduction and abatement of air pollution in this Commonwealth. Section 5(a)(8) of the act grants the Board the

authority to adopt rules and regulations designed to implement the provisions of the Clean Air Act (CAA) (42 U.S.C.A. §§ 7401—7671q).

#### D. Background and Purpose

The purpose of this final-form rulemaking is to implement control measures to reduce VOC emissions from automobile and light-duty truck assembly coating operations and, when elected, certain other vehicle-related surface coating operations. These processes include the application of an automobile assembly coating or a light-duty truck assembly coating, or both, to a new automobile body or a new light-duty truck body, to a body part for a new automobile or for a new light-duty truck, or to another part that is coated along with the new automobile body or body part or new light-duty truck body or body part, as well as the application of coatings to a body or body part for a new heavier vehicle. A heavier vehicle is a self-propelled vehicle designed for transporting persons or property on a street or highway that has a gross vehicle weight rating over 8,500 pounds.

VOCs are precursors for ground-level ozone formation. Ground-level ozone, a public health and welfare hazard, is not emitted directly to the atmosphere from these sources, but forms from a photochemical reaction between VOCs and nitrogen oxides (NO<sub>x</sub>) in the presence of sunlight. In accordance with sections 172(c)(1), 182(b)(2)(A) and 184(b)(1)(B) of the CAA (42 U.S.C.A. §§ 7502(c)(1), 7511a(b)(2)(A) and 7511c(b)(1)(B)), this final-form rulemaking establishes VOC emission limitations and other requirements consistent with the recommendations of the EPA 2008 Automobile and Light-Duty Truck Assembly Coatings Control Techniques Guidelines (2008 ALDT CTG) for these sources in this Commonwealth. See "Consumer and Commercial Products, Group IV: Control Techniques Guidelines in Lieu of Regulations for Miscellaneous Metal Products Coatings, Plastic Parts Coatings, Auto and Light-Duty Truck Assembly Coatings, Fiberglass Boat Manufacturing Materials, and Miscellaneous Industrial Adhesives," 73 FR 58481, 58483 (October 7, 2008); and *Control Techniques Guidelines for Automobile and Light-Duty Truck Assembly Coatings*, EPA 453/R-08-006, Office of Air Quality Planning and Standards, EPA, September 2008.

The EPA is responsible for establishing National Ambient Air Quality Standards (NAAQS) for six criteria pollutants considered harmful to public health and welfare, including the environment: ground-level ozone, particulate matter, NO<sub>x</sub>, carbon monoxide, sulfur dioxide and lead. Section 109 of the CAA (42 U.S.C.A. § 7409) established two types of NAAQS: primary standards, which are limits set to protect public health; and secondary standards, which are limits set to protect public welfare and the environment, including protection against visibility impairment and from damage to animals, crops, vegetation and buildings. The EPA established primary and secondary ground-level ozone NAAQS to protect public health and welfare.

Ground-level ozone is a highly reactive gas, which at sufficiently high concentrations can produce a wide variety of harmful effects. At elevated concentrations, ground-level ozone can adversely affect human health, animal health, vegetation, materials, economic values, and personal comfort and well-being. It can cause damage to important food crops, forests, livestock and wildlife. Repeated exposure to ground-level ozone pollution may

cause a variety of adverse health effects for both healthy people and those with existing conditions, including difficulty in breathing, chest pains, coughing, nausea, throat irritation and congestion. It can worsen bronchitis, heart disease, emphysema and asthma, and reduce lung capacity. Asthma is a significant and growing threat to children and adults. High levels of ground-level ozone adversely affect animals in ways similar to humans. High levels of ground-level ozone can also cause damage to buildings and synthetic fibers, including nylon, and reduced visibility on roadways and in natural areas. The implementation of additional measures to address ozone air quality nonattainment in this Commonwealth is necessary to protect the public health and welfare, animal and plant health and welfare, and the environment.

In July 1997, the EPA promulgated primary and secondary ozone NAAQS at a level of 0.08 part per million (ppm) averaged over 8 hours. See 62 FR 38856 (July 18, 1997). In 2004, the EPA designated 37 counties in this Commonwealth as 8-hour ozone nonattainment areas for the 1997 8-hour ozone NAAQS. Based on the ambient air monitoring data for the 2014 and 2015 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 NAAQS. In accordance with the CAA, the maintenance plans include permanent and enforceable control measures that will provide for the maintenance of the ozone NAAQS for at least 10 years following the EPA's redesignation of the areas to attainment. Eight years after the EPA redesignates an area to attainment, additional maintenance plans approved by the EPA must also provide for the maintenance of the ozone NAAQS for another 10 years following the expiration of the initial 10-year period.

In March 2008, the EPA lowered the primary and secondary ozone NAAQS to 0.075 ppm averaged over 8 hours to provide even greater protection for children, other at-risk populations and the environment against the array of ground-level ozone-induced adverse health and welfare effects. See 73 FR 16436 (March 27, 2008). In April 2012, the EPA designated five areas in this Commonwealth as nonattainment for the 2008 ozone NAAQS. See 77 FR 30088, 30143 (May 21, 2012). These areas include all or a portion of Allegheny, Armstrong, Berks, Beaver, Bucks, Butler, Carbon, Chester, Delaware, Fayette, Lancaster, Lehigh, Montgomery, Northampton, Philadelphia, Washington and Westmoreland Counties. The Department's analysis of 2014 ambient air ozone concentrations showed that all ozone samplers in this Commonwealth, except the Harrison sampler in Allegheny County, were monitoring attainment of the 2008 ozone NAAQS. The certified 2015 ozone season monitoring data indicate that all areas of this Commonwealth, including the Harrison sampler, are monitoring attainment of the 2008 ozone NAAQS as well. As with the 1997 ozone NAAQS, the Department must ensure that the 2008 ozone NAAQS are attained and maintained by implementing permanent and enforceable control measures. At the Department's request, the EPA granted 1-year attainment date extensions for the 2008 ozone NAAQS in the Philadelphia and Pittsburgh-Beaver Valley Areas due to air monitor violations in New Jersey and Maryland.

On October 1, 2015, the EPA again lowered the ozone NAAQS, this time to 0.070 ppm averaged over 8 hours. See 80 FR 65292 (October 26, 2015). Based on ambient air monitoring data for the 2013-2015 ozone seasons, eight monitors in this Commonwealth have design values

that violate the 2015 ozone NAAQS. The samplers are located in Allegheny, Armstrong, Bucks, Delaware, Indiana, Lebanon, Montgomery and Philadelphia Counties. The Commonwealth submitted designation recommendations for the 2015 ozone NAAQS to the EPA on October 3, 2016. The EPA's final designations for attainment and nonattainment areas for the 2015 ozone NAAQS are expected to take effect in December 2017.

Reductions in VOC emissions that are achieved following the adoption and implementation of VOC RACT emission control measures for source categories covered by Control Techniques Guidelines (CTG), including automobile and light-duty truck assembly coating operations and heavier vehicle coating operations, will allow the Commonwealth to make progress in achieving and maintaining the 1997, 2008 and 2015 8-hour ozone NAAQS.

There are Federal regulatory limits for VOC emissions from automobile and light-duty truck assembly coatings for several of the coating categories. In 1977, the EPA issued a CTG document entitled *Control of Volatile Organic Emissions from Existing Stationary Sources Volume II: Surface Coating of Cans, Coils, Paper, Fabrics, Automobiles, and Light-Duty Trucks*, EPA-450/2-77-008 (1977 CTG). The 1977 CTG provided RACT recommendations for controlling VOC emissions from automobile and light-duty truck assembly surface coating operations. The recommendations were for VOC emission limits calculated on a daily basis for each electrodeposition primer operation, primer-surfacer operation, topcoat operation and final repair operation. The limits of § 129.52 (relating to surface coating processes), Table I, category 6, regarding automobile and light duty truck coating subcategories of prime coat, top coat and repair, were promulgated at 9 Pa.B. 1447 (April 28, 1979) to implement RACT measures consistent with the recommendations in the 1977 CTG for the automobile and light duty truck coating categories.

The EPA promulgated New Source Performance Standards (NSPS) in 1980 (1980 NSPS) for surface coating of automobile and light-duty trucks in 40 CFR Part 60, Subpart MM (relating to standards of performance for automobile and light duty truck surface coating operations). The 1980 NSPS established VOC emission limits calculated on a monthly basis for each electrodeposition primecoat operation, guidecoat (primer-surfacer) operation and topcoat operation located in an automobile or light-duty truck assembly plant constructed, reconstructed or modified after October 5, 1979. See 45 FR 85415 (December 24, 1980) and 59 FR 51383 (October 11, 1994). The NSPS limits and the 1977 CTG recommendations for primer-surfacer and topcoat cannot be directly compared because of differences in the compliance period (monthly for the NSPS limits and daily for the 1977 CTG recommendations) and how transfer efficiency is considered (table values for the NSPS limits and actual transfer efficiency testing for the 1977 CTG recommendations).

In addition to establishing the 1980 NSPS VOC content limits, in 2004 the EPA promulgated 40 CFR Part 63, Subpart IIII (relating to National emission standards for hazardous air pollutants: surface coating of automobiles and light-duty trucks) (2004 NESHAP). See 69 FR 22602, 22623 (April 26, 2004). The 2004 NESHAP established organic hazardous air pollutant (HAP) emissions limitations calculated on a monthly basis for existing sources. More stringent limits apply to new sources that began construction after December 24, 2002. The 2004 NESHAP also specified work practices to minimize organic HAP emissions from the storage, mixing and conveying of coatings, thinners and cleaning materials, and from han-

dling waste materials generated by the coating operation. Many HAPs are VOCs, but not all VOCs are HAPs. The requirements of the 2004 NESHAP apply to "major sources" of HAP from surface coatings applied to bodies or body parts for new automobiles or new light-duty trucks. For the purpose of regulating HAP emissions, a "major source" is considered to be a stationary source or group of stationary sources located within a contiguous area and under common control that emits or has the potential to emit considering controls, in the aggregate, 10 tons per year (tpy) or more of any single listed HAP or 25 tpy or more of any combination of HAPs. See section 112(a)(1) of the CAA (42 U.S.C.A. § 7412(a)(1)) and 69 FR 22602, 22603.

When developing the VOC emission reduction RACT measures included in its 2008 ALDT CTG, the EPA took into account the VOC emission limitations of the 1980 NSPS as well as the VOC control recommendations of the 1977 CTG and the HAP emission reduction measures in the 2004 NESHAP for the automobile and light-duty truck assembly coating industries. Additionally, in 2008, the Alliance of Automobile Manufacturers, an industry trade association representing the majority of these facilities, provided the EPA with information from its member companies. Nonmember companies also submitted information to the EPA. The EPA reviewed and evaluated this information in conjunction with developing the 2008 ALDT CTG. The information included VOC emission rates for electrodeposition primer operations, primer-surfacer operations and topcoat operations on a daily and monthly average for calendar years 2006 and 2007. The VOC emission limits recommended in the 2008 ALDT CTG are based on 2006 and 2007 data from then-operating automobile and light-duty truck assembly coating operations. The resulting recommended VOC emission limits in the 2008 ALDT CTG for electrodeposition primer operations, primer-surfacer operations and topcoat operations are more stringent than the 1977 CTG and the 1980 NSPS limits. The recommended VOC emission limit for final repair operation in the 2008 ALDT CTG is the same as the 1977 CTG recommended limit for this category. The work practices recommendations in the 2008 ALDT CTG mirror those in the 2004 NESHAP.

This final-form rulemaking is designed to adopt VOC emission limitations and requirements consistent with the standards and recommendations in the 2008 ALDT CTG to meet the requirements of sections 172(c)(1), 182(b)(2) and 184(b)(1)(B) of the CAA. This final-form rulemaking applies these VOC emission limitations and requirements across this Commonwealth, as required under section 184(b)(1)(B) of the CAA. The VOC content and emission rate limitations and other requirements in this final-form rulemaking are not more stringent than the recommendations included in the EPA 2008 ALDT CTG upon which this final-form rulemaking is based. Consistent with section 4.2 of the act (35 P.S. § 4004.2(a)), the measures in this final-form rulemaking are reasonably required to achieve and maintain the health-based and welfare-based 8-hour ozone NAAQS in this Commonwealth and to satisfy related CAA requirements.

State regulations to control VOC emissions from automobile and light-duty truck assembly coating operations, as well as VOC emissions from the related cleaning activities, are required under Federal law. The Commonwealth's regulation will be approved by the EPA as a revision to the Commonwealth's SIP if the provisions meet the RACT requirements of the CAA and its implementing regulations. See 73 FR 58481, 58483. The EPA defines RACT as "the lowest emission limitation that a

particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility." See "State Implementation Plans; General Preamble for Proposed Rulemaking on Approval of Plan Revisions for Nonattainment Areas-Supplement (on Control Techniques Guidelines)," 44 FR 53761 (September 17, 1979).

Section 110(a) of the CAA (42 U.S.C.A. § 7410(a)) provides that each state shall adopt and submit to the EPA a plan to implement measures (a SIP) to enforce the NAAQS or revision to the NAAQS promulgated under section 109(b) of the CAA. Section 172(c)(1) of the CAA provides that SIPs for nonattainment areas must include "reasonably available control measures," including RACT, for sources of emissions of VOC and NO<sub>x</sub>. Section 182(b)(2) of the CAA provides that for moderate ozone nonattainment areas, states must revise their SIPs to include RACT for sources of VOC emissions covered by a CTG document issued by the EPA prior to the area's date of attainment of the applicable ozone NAAQS. More importantly, section 184(b)(1)(B) of the CAA requires that states in the Ozone Transport Region (OTR), including the Commonwealth, submit a SIP revision requiring implementation of RACT for all sources of VOC emissions in the state covered by a specific CTG and not just for those sources that are located in designated nonattainment areas of the state.

Section 183(e) of the CAA (42 U.S.C.A. § 7511b(e)) directs the EPA to list for regulation those categories of products that account for at least 80% of the aggregate VOC emissions from consumer and commercial products in ozone nonattainment areas. Section 183(e)(3)(C) of the CAA further provides that the EPA may issue a CTG document in place of a National regulation for a product category on the section 183(e) list when the EPA determines that the CTG will be "substantially as effective as [National] regulations" in reducing emissions of VOC in ozone nonattainment areas. In 1995, the EPA listed automobile and light-duty truck assembly coatings on its section 183(e) list and, in 2008, issued a CTG for this product category. See 60 FR 15264, 15267 (March 23, 1995); 73 FR 58481; and *Control Techniques Guidelines for Automobile and Light-Duty Truck Assembly Coatings*, EPA 453/R-08-006, Office of Air Quality Planning and Standards, EPA, September 2008. The 2008 ALDT CTG is available on the EPA's web site at <https://www.epa.gov/stationary-sources-air-pollution/clean-air-act-guidelines-and-standards-solvent-use-and-surface>.

In the 2008 notice of final determination and availability of final CTGs, the EPA determined that the RACT recommendations of the 2008 ALDT CTG would be substantially as effective as National regulations in reducing VOC emissions from the automobile and light-duty truck assembly coatings product category in ozone nonattainment areas. See 73 FR 58481. The 2008 ALDT CTG provides states with the EPA's recommendations of what constitutes RACT for the covered category. States may use the Federal recommendations provided in the 2008 ALDT CTG to inform their own determination as to what constitutes RACT for VOC emissions from the covered category. State air pollution control agencies may implement other technically-sound approaches that are consistent with the CAA requirements and the EPA's implementing regulations or guidelines.

The Department reviewed the RACT recommendations included in the 2008 ALDT CTG for their applicability to the ground-level ozone reduction measures necessary for this Commonwealth. The Bureau of Air Quality determined that VOC emission reduction measures consistent

with the recommendations provided in the 2008 ALDT CTG are appropriate to be implemented in this Commonwealth as RACT for this category.

This final-form rulemaking applies to the owner and operator of an automobile and light-duty truck assembly coating operation that applies an automobile assembly coating or a light-duty truck assembly coating, or both, to a new automobile body or a new light-duty truck body, to a body part for a new automobile or for a new light-duty truck, or to another part that is coated along with the new automobile body or body part or new light-duty truck body or body part. The owner or operator of a separate coating line at an automobile and light-duty truck assembly coating facility, and the owner or operator of a facility that coats a body or body part for a new heavier vehicle, have the option to elect to be regulated under this final-form rulemaking instead of final-form § 129.52d (relating to control of VOC emissions from miscellaneous metal parts surface coating processes, miscellaneous plastic parts surface coating processes and pleasure craft surface coatings). These options are provided to allow these owners and operators flexibility in complying with their permit conditions and to optimize their operations.

This final-form rulemaking also applies to the owner and operator of a facility that performs a coating operation subject to this final-form rulemaking on a contractual basis.

This final-form rulemaking does not apply to the use or application of an automobile and light-duty truck assembly coating by an owner or operator at a plastic or composites molding facility. The VOC content limits in this final-form rulemaking do not apply to an assembly coating supplied in a container with a net volume of 16 ounces or less or a net weight of 1 pound or less.

The Board is aware of 61 businesses in this Commonwealth, all of which are likely to be small businesses, whose owners and operators may be subject to this final-form rulemaking. The Board estimates that of this projected total of 61 potentially subject owners and operators, as many as 47 of the potentially subject facility owners and operators may have actual VOC emissions at or above the applicability threshold of 15 pounds (6.8 kilograms) per day of total actual VOC emissions, including VOC emissions from related cleaning activities, before consideration of controls. These owners and operators will be subject to the final-form VOC content limit requirements, work practice requirements, compliance monitoring and daily recordkeeping requirements, and, if requested by the Department, reporting requirements. The owners and operators of the remaining potentially subject 14 facilities will only be subject to compliance monitoring and daily recordkeeping requirements and, if requested by the Department, reporting requirements.

Of the 61 owners and operators who may potentially be subject to this final-form rulemaking, the Department identified the owners and operators of 13 of these facilities from its databases. The owners and operators of 12 of these 13 facilities manufacture or surface coat, or both, bodies or body parts for new heavier vehicles such as fire trucks, ambulances and tow trucks and will only be subject to this final-form rulemaking if they elect to comply with this final-form rulemaking instead of complying with § 129.52d. The owner and operator of the remaining facility may potentially be subject based on previous surface coating operations. For purposes of discussing the potential impacts of this final-form rulemaking, however, the Board assumed that the owners and operators of all 13 facilities will elect to be subject to

this final-form rulemaking. The Commonwealth's Small Business Development Center's Environmental Management Assistance Program (SBDC EMAP) reviewed the list of 13 potentially subject facilities reporting VOC emissions in 2013 identified by the Department from its databases and determined that all 13 of the facilities are considered a small business under the Federal Small Business Administration small business size regulations.

The owners and operators of the 13 facilities identified by the Department from its databases reported actual VOC emissions in 2013 totaling approximately 320 tons. The owners and operators of the ten facilities that may emit 15 pounds (6.8 kilograms) or more of total actual VOC emissions per day, including VOC emissions from related cleaning activities, before consideration of controls, reported actual VOC emissions equal to or greater than 2.7 tpy, totaling approximately 319 tons. Implementation of the recommended control measures by these ten potentially subject facility owners and operators could generate reductions of as much as 111 tons of VOC emissions per year from the ten facilities, depending on the level of compliance already being achieved by these owners and operators. The estimated total maximum annual costs to these ten owners and operators could be up to \$195,138. The range of cost per regulated facility owner and operator for implementing the final-form VOC emission control measures is estimated to be approximately \$10,500 to \$19,514 per facility. The range of cost effectiveness to the regulated facility owners and operators is approximately \$946 per ton of VOC emissions reduced to \$1,758 per ton of VOC emissions reduced on an annual basis.

Similarly, the Board estimates that implementation of the final-form VOC control measures and work practice requirements could generate potential VOC emission reductions of as much as 413 tpy from the 37 potentially subject small business-sized facilities identified by the SBDC EMAP that are likely to be subject at or above the applicability threshold of 15 pounds (6.8 kilograms) per day of total actual VOC emissions, including VOC emissions from related cleaning activities, before consideration of controls, depending on the level of compliance already being achieved by the owners and operators of these facilities. The estimated annual cost to the owners and operators of these 37 potentially subject nonpermitted small business-sized facilities is \$726,054. The estimated maximum annual cost per facility owner and operator is approximately \$19,623.

The ground-level ozone reduction measures included in this final-form rulemaking may achieve VOC emission reductions locally and may also reduce the transport of VOC emissions and ground-level ozone to downwind states. Adoption of VOC emission requirements for sources subject to this final-form rulemaking is part of the Commonwealth's strategy, in concert with other OTR jurisdictions, to further reduce the transport of VOC ozone precursors and ground-level ozone throughout the OTR to attain and maintain the 8-hour ground-level ozone NAAQS.

This final-form rulemaking is required under the CAA and, consistent with section 4.2(a) of the act, is reasonably required to achieve and maintain the health-based and welfare-based 8-hour ground-level ozone NAAQS and to satisfy related CAA requirements in this Commonwealth. Once published in the *Pennsylvania Bulletin*, this

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

On February 11, 2016, the Air Quality Technical Advisory Committee (AQTAC) was briefed on this final-form rulemaking and the comments received on the proposed rulemaking, and they had no concerns. The AQTAC voted 16-0-1 (yes; no; abstain) to concur with the Department's recommendation to move this final-form rulemaking forward to the Board for consideration. This final-form rulemaking was discussed with the Citizens Advisory Council's (CAC) Policy and Regulatory Oversight Committee on March 2, 2016. On the recommendation of the CAC's Policy and Regulatory Oversight Committee, on March 15, 2016, the CAC concurred with the Department's recommendation to forward this final-form rulemaking to the Board. The Small Business Compliance Advisory Committee (SBCAC) was briefed on this final-form rulemaking on April 27, 2016. The SBCAC voted unanimously to concur with the Department's recommendation to move this final-form rulemaking forward to the Board for consideration.

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

##### *§ 129.51. General*

Subsection (a) is amended to establish that compliance with § 129.52e may be achieved by alternative methods.

Subsection (a)(3) is amended to establish that compliance by a method other than the use of a low-VOC content coating, adhesive, sealant, adhesive primer, sealant primer, surface preparation solvent or cleanup solvent or ink which meets the applicable emission limitation in § 129.52e shall be determined on the basis of equal volumes of solids.

Subsection (a)(6) is amended to establish that the alternative compliance method is incorporated into a plan approval or operating permit, or both, reviewed by the EPA, including the use of an air cleaning device to comply with § 129.52e.

Changes were not made to subsection (a) and subsection (a)(3) and (6) from the proposed rulemaking.

##### *§ 129.52e. Control of VOC emissions from automobile and light-duty truck assembly coating operations and heavier vehicle coating operations*

This final-form rulemaking adds § 129.52e to regulate VOC emissions from automobile and light-duty truck assembly coating operations and heavier vehicle coating operations. As explained in subsection (c), § 129.52e supersedes the requirements of a RACT permit already issued under §§ 129.91—129.95 (relating to stationary sources of NO<sub>x</sub> and VOCs) to the owner or operator to control, reduce or minimize VOC emissions from a process or coating subject to § 129.52e, except to the extent the RACT permit contains more stringent requirements.

Subsection (a)(1) establishes that this final-form rulemaking applies, as specified, to the owner and operator of an automobile and light-duty truck assembly coating operation that applies an automobile assembly coating or a light-duty truck assembly coating, or both, to a new automobile body or a new light-duty truck body, a body part for a new automobile or a new light-duty truck, or another part that is coated along with the new automobile body or body part or new light-duty truck body or body part.

Subsection (a)(2) establishes that this final-form rulemaking applies, as specified, to the owner and operator of an automobile and light-duty truck assembly coating

operation that operates a separate coating line at the facility on which a coating is applied to another part intended for use in a new automobile or new light-duty truck or an aftermarket repair or replacement part for an automobile or light-duty truck if the owner or operator elects to comply with § 129.52e instead of § 129.52d. The separate coating of another part for use in a new automobile or new light-duty truck or an aftermarket repair or replacement part for an automobile or light-duty truck is included in the Miscellaneous Metal Products and Plastic Parts Coatings categories under section 183(e) of the CAA and covered in the 2008 Miscellaneous Metal and Plastic Parts Coatings CTG (2008 MMPP CTG). The election occurs when the owner or operator notifies the Department by submitting a written statement to the appropriate Department regional office Air Quality Program Manager that specifies the intent to comply with § 129.52e instead of § 129.52d.

Subsection (a)(3) establishes that this final-form rulemaking applies, as specified, to the owner and operator of a heavier vehicle coating operation that coats a body or body part for a new heavier vehicle if the owner or operator elects to comply with § 129.52e instead of § 129.52d. Heavier vehicle coatings are included in the Miscellaneous Metal Products and Plastic Parts Coatings categories under section 183(e) of the CAA and are covered in the 2008 MMPP CTG. The election occurs when the owner or operator notifies the Department by submitting a written statement to the appropriate Department regional office Air Quality Program Manager that specifies the intent to comply with § 129.52e instead of § 129.52d.

Providing the election option under subsection (a)(2) and (3) effectuates the recommendations in the EPA 2008 ALDT CTG that a state consider giving an owner or operator of a separate coating line at an automobile and light-duty truck assembly coating facility the option of complying with the state's regulation adopted under the 2008 ALDT CTG instead of the 2008 MMPP CTG; and that a state give an owner or operator of a facility that coats bodies or body parts for new heavier vehicles the option to comply with either the state's regulation adopted under the 2008 MMPP CTG or the 2008 ALDT CTG. The separate coating of another part for use in a new automobile or new light-duty truck or an aftermarket repair or replacement part for an automobile or light-duty truck as well as heavier vehicle coatings are included in the Miscellaneous Metal Products and Plastic Parts Coatings categories under section 183(e) of the CAA and are therefore covered in the 2008 MMPP CTG. See 2008 ALDT CTG, page 4, and 2008 MMPP CTG, page 4.

Subsection (a)(4) establishes that this final-form rulemaking applies, as specified, to the owner and operator of a facility that performs a coating operation subject to § 129.52e on a contractual basis.

Subsection (a)(5) establishes that this final-form rulemaking does not apply to the use or application of an automobile and light-duty truck assembly coating by an owner or operator at a plastic or composite molding facility.

Subsection (b) establishes 25 definitions to support § 129.52e. The definition of "heavier vehicle" is included upon the request of the AQTAC at its April 3, 2014, meeting to improve the clarity of this final-form rulemaking and further delineate the types of vehicle coating operations subject to this final-form rulemaking.

Subsection (c) establishes that the requirements of this section supersede the requirements of a RACT permit

issued under §§ 129.91–129.95 to the owner or operator of a source subject to this section prior to January 1, 2017, except to the extent the RACT permit contains more stringent requirements. The proposed compliance date was January 1, 2016. However, this final-form rulemaking was not finalized by January 1, 2016. The Board revised the compliance date in this final-form rulemaking to January 1, 2017. January 1, 2017, is the mandated deadline required under the EPA's final rule pertaining to the Implementation of the 2008 National Ambient Air Quality Standards for Ozone: State Implementation Plan Requirements. See 80 FR 12264, 12279 (March 6, 2015). The EPA stated that the RACT measures for the 2008 ozone NAAQS must be implemented "as expeditiously as practicable, but no later than January 1 of the 5th year after the effective date of a nonattainment designation." The nonattainment designations across the United States were effective for the 2008 ozone NAAQS on July 20, 2012. See 77 FR 30088, 30143. Consequently, RACT measures for the 2008 8-hour ozone standard must be implemented by January 1, 2017.

Subsection (d)(1) establishes that beginning January 1, 2017, the VOC content limits specified in Tables I and II (relating to VOC content limits for primary assembly coatings; and VOC content limits for additional assembly coatings (grams of VOC per liter of coating excluding water and exempt compounds) as applied) apply to an owner and operator of a facility that has total actual VOC emissions equal to or greater than 15 pounds (6.8 kilograms) per day, before consideration of controls, from all operations at the facility that apply an assembly coating subject to this section, including VOC emissions from related cleaning activities. As with all RACT regulations, an owner or operator remains subject to the regulation even if the throughput or VOC emissions fall below the applicability threshold.

Subsection (d)(2) establishes that the VOC content limits specified in Tables I and II do not apply to an owner and operator of a facility that has total actual VOC emissions below 15 pounds (6.8 kilograms) per day, before consideration of controls, from all operations at the facility that apply an assembly coating subject to this section, including VOC emissions from related cleaning activities. This subsection also specifies that the VOC content limits in Tables I and II do not apply to an assembly coating supplied in a container with a net volume of 16 ounces or less or a net weight of 1 pound or less.

Subsection (e) establishes that beginning January 1, 2017, an owner and operator subject to the VOC content limits specified in Tables I and II shall comply with specified work practices for coating-related activities and cleaning materials.

Subsection (f) establishes compliance monitoring and recordkeeping requirements.

Subsection (g) establishes measurement, calculation, sampling and testing methodologies. The Automobile Topcoat Protocol specified in subsection (g)(2)(i) for calculation of VOC emissions and rates applies not only to the owner and operator of an automobile and light-duty truck assembly coating operation, but also to the owner and operator of a facility that coats a body or body part for a new heavier vehicle that elects to comply with § 129.52e instead of § 129.52d.

Final-form § 129.52e contains two tables. Table I specifies VOC content limits for primary assembly coatings. The primary assembly coatings are applied to new automobile or new light-duty truck bodies, or to body parts for

new automobiles or new light-duty trucks, as well as to other parts that are coated along with these bodies or body parts. These primary coatings are electrodeposition primer, primer-surfacer, topcoat and final repair. The Automobile Topcoat Protocol specified in subsection (g)(2)(i) and referenced in Table I applies not only to the owner and operator of an automobile and light-duty truck assembly coating operation, but also to the owner and operator of a facility that coats a body or body part for a new heavier vehicle that elects to comply with § 129.52e instead of § 129.52d. Table II specifies VOC content limits for additional assembly coatings. These additional coatings are applied during the vehicle assembly process and include glass bonding primer, adhesive, cavity wax, sealer, deadener, gasket/gasket sealing material, underbody coating, trunk interior coating, bedliner, lubricating wax/compound and weatherstrip adhesive. The EPA VOC emission control recommendations included in the 2008 ALDT CTG, and reflected in this final-form rulemaking, include the VOC content limits for the listed coatings.

The Board specifically requested comment on the proposed emission limit in Table II of 900 grams per liter of coating less water and exempt compounds for automobile and light-duty truck glass bonding primer. A limit of 700 grams per liter of coating less water and exempt compounds applies to a similar category, called automotive glass adhesive primer, in the existing adhesives regulations. See §§ 121.1, 129.77 and 130.702 (relating to definitions; control of emissions from the use or application of adhesives, sealants, primers and solvents; and emission standards). However, the EPA wrote in its notice of availability of the final 2008 ALDT CTG that the cost of the testing required to confirm material performance and compliance with Federal crash safety standards and windshield integrity requirements would be unreasonable compared to the small emission reduction that would be achieved by the 700 grams per liter limit it had proposed for the 2008 ALDT CTG. See 73 FR 58481, 58486. The EPA explained that the small amount of additional emission reductions achieved by the 700 grams per liter limit are negligible compared to reductions potentially achieved by the 900 grams per liter limit and are more technically difficult to implement. See 73 FR 58481, 58486. The EPA concluded that the less stringent limit of 900 grams per liter for automobile and light-duty truck glass bonding primer is appropriate and satisfies RACT for automobile and light-duty truck assembly coating operations. See 73 FR 58481, 58486. The Board did not receive comments on this issue and the limit of 900 grams per liter limit of coating less water and exempt compounds is retained for the automobile and light-duty truck glass bonding primer category in final-form Table II.

Changes were not made to subsections (a), (b), (f) and (g) and Tables I and II from the proposed rulemaking. The only changes to § 129.52e from proposed are the changes from the January 1, 2016, compliance date to the January 1, 2017, compliance date in subsections (c), (d) and (e).

#### F. Summary of Major Comments and Responses

The Board approved publication of the proposed rulemaking at its meeting of April 21, 2015. The proposed rulemaking was published at 45 Pa.B. 4351 (August 8, 2015). Three public hearings were held on September 8, 9 and 10, 2015, in Norristown, Harrisburg and Pittsburgh, respectively. The public comment period closed on October 13, 2015, for a 67-day public comment period. No public comments were received. The Independent Regulatory Review Commission (IRRC) provided comments on the

proposed rulemaking. The comments received on the proposed rulemaking are summarized in this section and are also addressed in a comment and response document which is available from the Department.

#### *Compliance date*

IRRC recommended that the Board establish a compliance date that allows for the proper development of a final-form regulation and full compliance by the regulated community. The Board agrees and revised the compliance date in this final-form rulemaking to January 1, 2017. The new compliance date of January 1, 2017, is the mandated deadline required under the EPA's final rule pertaining to the Implementation of the 2008 National Ambient Air Quality Standards for Ozone: State Implementation Plan Requirements. See 80 FR 12264, 12279.

#### *Option to comply with proposed miscellaneous metal parts surface coating processes, miscellaneous plastic part surface coating processes, and pleasure craft surface coatings requirements*

IRRC noted that the owner or operator of a separate coating line at an automobile and light-duty truck assembly coating facility and the owner or operator of a facility that coats a body or body part for a new heavier vehicle have the option to be regulated under this final-form rulemaking or under § 129.52d for the control of VOC emissions from miscellaneous metal parts surface coating processes, miscellaneous plastic parts surface coating processes and pleasure craft surface coatings. IRRC asked the Board to ensure that the two final-form rulemakings are adopted on the same date. The Board agrees and notes that it intends to consider the two final-form rulemakings concurrently.

### *G. Benefits, Costs and Compliance*

#### *Benefits*

The Statewide implementation of the VOC emission control measures in this final-form rulemaking will benefit the health and welfare of approximately 12.7 million residents and the numerous animals, crops, vegetation and natural areas of this Commonwealth by reducing emissions of VOCs, which are precursors to the formation of ground-level ozone air pollution. Exposure to high concentrations of ground-level ozone is a serious human and animal health threat, causing respiratory illnesses and decreased lung function as well as other adverse health effects, leading to a lower quality of life. Reduced ambient concentrations of ground-level ozone would reduce the incidences of hospital admissions for respiratory ailments including asthma and improve the quality of life for citizens overall. While children, the elderly and those with respiratory problems are most at risk, even healthy individuals may experience increased respiratory ailments and other symptoms when they are exposed to high levels of ambient ground-level ozone while engaged in activities that involve physical exertion. High levels of ground-level ozone affect animals, including pets, livestock and wildlife, in ways similar to humans.

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

the foliage of trees and other plants can decrease the aesthetic value of ornamental species used in residential landscaping, as well as the natural beauty of parks and recreation areas.

The economic value of some welfare losses due to high concentrations of ground-level ozone can be calculated, such as crop yield loss from soybeans due to both decreased seed production and reduced size and quality of seeds and from visible injury to some leaf crops, including lettuce, spinach and tobacco, as well as visible injury to ornamental plants, including grass, flowers and shrubs. Other types of welfare loss may not be quantifiable, such as the reduced aesthetic value of trees growing in heavily visited parks. This Commonwealth's 59,000 farm families are the stewards of more than 7.7 million acres of farmland, with \$7.5 billion in cash receipts annually from production agriculture. In addition to production agriculture, the industry also raises revenue and supplies jobs through support services such as food processing, marketing, transportation and farm equipment. In total, production agriculture and agribusiness contributes nearly \$75 billion to the economy in this Commonwealth (source: Department of Agriculture).

The Department of Conservation and Natural Resources (DCNR) is the steward of State-owned forests and parks. DCNR awards millions of dollars in construction contracts each year to build and maintain the facilities in these parks and forests. Timber sales on State forest lands contribute to the \$5 billion-a-year timber industry. Hundreds of concessions throughout the park system help complete the park experience for both State and out-of-State visitors (source: DCNR). Further, this Commonwealth leads the Nation in growing volume of hardwood species, with 17 million acres in forest land. As the leading producer of hardwood lumber in the United States, the Commonwealth also leads in the export of hardwood lumber, exporting nearly \$800 million annually in lumber, logs, furniture products and paper products to more than 70 countries around the world. Recent United States Forest Service data show that the forest growth-to-harvest rate in this Commonwealth is better than 2 to 1. This vast renewable resource puts the hardwoods industry at the forefront of manufacturing in this Commonwealth. Through 2006, the total annual direct economic impact generated by the Commonwealth's wood industry was \$18.4 billion. The industry employed 128,000 people, with \$4.7 billion in wages and salaries earned. Production was 1.1 billion board feet of lumber annually (source: Strauss, Lord, Powell; Pennsylvania State University, June 2007, cited in Pennsylvania Hardwoods Development Council Biennial Report, 2009-2010).

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

This final-form rulemaking is designed to adopt VOC emission standards and emission limitations consistent with the standards and recommendations in the EPA's 2008 ALDT CTG to meet the requirements of sections 172(c)(1), 182(b)(2) and 184(b)(1)(B) of the CAA. This final-form rulemaking applies these standards and limitations across this Commonwealth, as required under section 184(b)(1)(B) of the CAA. Consistent with section 4.2 of the act, the measures in this final-form rulemaking are reasonably required to achieve and maintain the health-based and welfare-based 8-hour ozone NAAQS in this Commonwealth.

The Statewide implementation of the VOC emission control measures in this final-form rulemaking may generate reductions of as much as 111 tons of VOC emissions per year from the ten potentially affected facilities identified by the Department in its databases that are likely to be subject at or above the applicability threshold of 15 pounds (6.8 kilograms) per day of total actual VOC emissions, including VOC emissions from related cleaning activities, before consideration of controls. The owners and operators of these ten facilities will be required to implement the VOC control measures in this final-form rulemaking, depending on the level of compliance already being achieved by the owners and operators of these potentially affected facilities. These projected estimated reductions in VOC emissions and the subsequent reduced formation of ground-level ozone will help ensure that the owners and operators of businesses, citizens and the environment of this Commonwealth experience the benefits of improved health and welfare resulting from lowered concentrations of ground-level ozone. Commonwealth residents will also potentially benefit from improved groundwater quality through reduced quantities of VOCs and HAPs from the use of low-VOC content and low-HAP content automobile and light-duty truck assembly coatings and implementation of work practices for coating-related and cleaning-related activities.

Although this final-form rulemaking is designed primarily to address ozone air quality, the reformulation of high-VOC content coating materials to low-VOC content coating materials or the substitution of low-VOC content coating materials for high-VOC content coating materials to meet the VOC content limits applicable to users may also result in reduction of HAP emissions, which are also a serious health threat. The reduced levels of high-VOC content and high-HAP content solvents will benefit groundwater quality through reduced loading on water treatment plants and in reduced quantities of high-VOC content and high-HAP content solvents leaching into the ground and streams and rivers.

The Statewide implementation of the control measures in this final-form rulemaking will assist the Commonwealth in reducing VOC emissions locally and the resultant local formation of ground-level ozone in this Commonwealth from surface coating processes subject to this final-form rulemaking as well as assist in reducing the transport of VOC emissions and ground-level ozone to downwind states. Statewide implementation will also facilitate implementation and enforcement of this final-form rulemaking in this Commonwealth. The measures in this final-form rulemaking are reasonably necessary to attain and maintain the health-based and welfare-based 8-hour ground-level ozone NAAQS and to satisfy related CAA requirements in this Commonwealth.

This final-form rulemaking may create economic opportunities for coating formulators and VOC emission control technology innovators, manufacturers and distributors through an increased demand for new or reformulated

coating materials or for new or improved application or control equipment. In addition, the owners and operators of regulated facilities may choose to install and operate an emissions monitoring system or equipment necessary for an emissions monitoring method to comply with this final-form rulemaking, thereby creating an economic opportunity for the emissions monitoring industry.

#### *Compliance costs*

The Department reviewed its air quality databases and identified 13 facilities in this Commonwealth whose owners and operators may be subject to this final-form rulemaking. The owners and operators of 12 of these 13 facilities manufacture or surface coat, or both, bodies or body parts for new heavier vehicles such as fire trucks, ambulances and tow trucks and will only be subject to this final-form rulemaking if they elect to comply with this final-form rulemaking instead of § 129.52d. The owner and operator of the remaining facility may potentially be subject based on previous surface coating operations. For purposes of discussing the potential impacts of this final-form rulemaking, the Board assumed that the owners and operators of all 13 facilities will elect to be subject to this final-form rulemaking. According to the Department databases, the actual VOC emissions from these 13 facilities assumed to be subject to this final-form rulemaking totaled 320 tons in 2013. Of the 13 facilities reporting VOC emissions in 2013, the owners and operators of 10 of these facilities reported VOC emissions totaling 2.7 tons or more; their combined reported emissions totaled 319 tons in 2013. Accordingly, the owners and operators of these ten facilities are assumed to emit 15 pounds (6.8 kilograms) or more of total actual VOC emissions per day, including VOC emissions from related cleaning activities, before consideration of controls, and will be required to implement the final-form VOC emission reduction measures, which include coating VOC content limits, work practice standards for coatings, development and implementation of a written work practice plan for cleaning materials, and compliance monitoring and daily recordkeeping requirements. The owners and operators of the remaining three facilities each reported VOC emissions below 2.7 tons; their combined reported VOC emissions totaled approximately 1 ton in 2013. The owners and operators of these three facilities are assumed to emit less than 15 pounds (6.8 kilograms) per day of total actual VOC emissions, including VOC emissions from related cleaning activities, before consideration of controls, and will be subject only to the compliance monitoring and daily recordkeeping requirements.

For all subject owners and operators, the daily records are required to be maintained onsite for 2 years, unless a longer period is required under Chapter 127 (relating to construction, modification, reactivation and operation of sources) or a plan approval, operating permit or order issued by the Department. Records shall be submitted to the Department in an acceptable format upon receipt of a written request from the Department.

The recommended RACT VOC emission reduction measures included in the 2008 ALDT CTG are largely based on the 2006 and 2007 data supplied by the Alliance of Automobile Manufacturers member companies and non-member companies, the VOC emission limitations of the 1980 NSPS, the VOC control recommendations of the 1977 CTG and the 2004 NESHAP HAP emission reduction measures. While the owner or operator of an automobile and light-duty truck assembly coating or heavier vehicle surface coating facility area source of HAP may not meet the threshold for implementing the HAP emis-



sion reduction measures of the 2004 NESHAP (10 tpy of any single listed HAP or 25 tpy of any combination of HAPs), the owner or operator may meet the applicability threshold limit for implementing the RACT control measures of this final-form rulemaking to control VOC emissions.

The costs estimated by the EPA to implement the recommended RACT measures are largely based on the 1980 NSPS VOC emission limitations and 2004 NESHAP HAP emission reduction measures and costs. The owner and operator of an automobile and light-duty truck assembly coating facility that is already implementing the requirements of the 1980 NSPS or 2004 NESHAP and is potentially subject to the measures of this final-form rulemaking will likely not have additional costs to comply with the measures of this final-form rulemaking. The EPA therefore projected an estimated cost of \$0 to the owners and operators of automobile and light-duty truck assembly coating facilities potentially subject to regulations implementing requirements consistent with the recommended RACT measures of the 2008 ALDT CTG.

However, the owners and operators of none of the 13 permitted facilities identified by the Department as potentially subject to this final-form rulemaking have permits implementing the 1980 NSPS or 2004 NESHAP requirements. The Department also determined that 12 of the 13 facility owners and operators are likely surface coating bodies and body parts for heavier vehicles. Consistent with a recommendation in the 2008 ALDT CTG and the 2008 MMPP CTG, this final-form rulemaking provides the owner or operator of a facility that coats a body or body part for a new heavier vehicle the option to elect to be regulated under this final-form rulemaking instead of § 129.52d. The EPA wrote in the 2008 ALDT CTG and the 2008 MMPP CTG that an owner or operator making this election will achieve at least equivalent, and perhaps greater, control of VOC emissions.

The cost to the potentially affected population will be about the same whether the owners and operators choose to comply with this final-form rulemaking or § 129.52d. The Board developed its estimate of costs for the potentially subject owners and operators implementing the measures of this final-form rulemaking by using the cost estimates for implementing the recommended RACT measures of the 2008 MMPP CTG. The Board likewise used the EPA's estimate from the 2008 MMPP CTG for the amount of VOC emission reductions implementation of the recommended control measures may achieve.

The EPA estimated that the annual cost to owners and operators to comply with regulations based on the 2008 MMPP CTG to be \$10,500 per facility and estimated the cost effectiveness for controlling the VOC emissions to be \$1,758 per ton of VOC emissions reduced. The EPA also estimated that implementing the RACT measures of the 2008 MMPP CTG will achieve VOC emission reductions of 35%. Both the 2008 ALDT CTG and the 2008 MMPP CTG also recommend work practices for reducing VOC emissions from coatings and cleaning materials. The EPA believes that the work practice recommendations in both the 2008 ALDT CTG and the 2008 MMPP CTG will result in a net cost savings for affected owners and operators for coating and cleaning materials. Implementing the required work practices for coating-related activities and cleaning materials will reduce the amounts of VOC emissions overall from coating operations by reducing the amounts of VOC-containing coating and cleaning materials that are lost to evaporation, spillage and waste, and reducing or eliminating associated VOC emissions, thereby reducing the costs of purchasing coating and

cleaning materials for use in the operation as well as decreasing the amount of annual emissions fees that must be paid for VOC emissions.

The Board estimates that the maximum potential amount of actual annual VOC emission reductions that may be achieved by implementing this final-form rulemaking is approximately 111 tons, based on the 2013 reported VOC emissions of 319 tons by the ten potentially subject permitted facility owners and operators identified from the Department's databases that may be required to implement the VOC control measures of this final-form rulemaking (35% reduction  $\times$  319 tons VOC emissions = 111 tons of VOC emissions reduced), depending on the level of compliance already being achieved by these owners and operators. The estimated annual cost to the owners and operators of these ten potentially subject permitted facilities could be a total of \$195,138 (111 tons reduced  $\times$  \$1,758 per ton of VOC emissions reduced = \$195,138). The cost per facility owner and operator could be approximately \$19,514 ( $\$195,138/10$  facilities = \$19,514), which is higher than the EPA's estimated cost per facility of \$10,500 for implementing the recommended RACT measures of the 2008 MMPP CTG. This difference in cost may be due in part to the Commonwealth-specific emission data used in the calculation.

The Board also calculated the cost effectiveness for the owners and operators of the ten potentially subject facilities in this Commonwealth using the EPA's cost of \$10,500 per facility. The estimated total maximum anticipated annual costs to the potentially subject ten facility owners and operators could be up to \$105,000 ( $\$10,500 \times 10$  facilities = \$105,000). The cost effectiveness for the reductions of 111 tons of VOC emissions could be as little as \$946 per ton of VOC emissions reduced ( $\$105,000/111$  tons of VOC emissions reduced = \$946 per ton of VOC emissions reduced) on an annual basis. This is less than the cost effectiveness of \$1,758 per ton of VOC emissions reduced estimated by the EPA for implementing the recommended RACT measures of the 2008 MMPP CTG. Again, this difference may be due in part to the Commonwealth-specific emission data used in the calculation.

The Board estimates that the range of cost effectiveness to these ten facility owners and operators for implementing this final-form rulemaking is \$946/ton of VOC emissions reduced to \$1,758/ton of VOC emissions reduced on an annual basis. The range of cost to this group for implementing the final-form VOC emission control measures is estimated to be \$10,500 to \$19,514 per year per facility. The estimated total annual cost of implementing this final-form rulemaking for this group of potentially subject owners and operators ranges from \$105,000 to \$195,138. The Board expects that the annual costs to the regulated industry in this Commonwealth will be at the lower end of these ranges because low-VOC content coating materials are likely to be readily available at a cost that is not significantly greater than the high-VOC content coatings they replace as a result of the development of 1980 NSPS-compliant low-VOC content coating materials and 2004 NESHAP-compliant low-HAP content coating materials, since lower HAP content usually means lower VOC content. Therefore, the research and development of low-VOC content coating materials should already be complete and these expenses should not be a factor in the cost of complying with the VOC emission control measures of this final-form rulemaking.

Further, the Board expects that the annual financial impact to these owners and operators will be less than the estimated maximum costs due to flexibility in choos-

ing compliance options. This final-form rulemaking provides for compliance through the use of complying coating materials and through work practice standards for coating-related activities and cleaning materials. Flexibility in compliance is provided for an owner or operator of a separate coating line at an automobile and light-duty truck assembly coating facility and an owner or operator of a facility that coats bodies or body parts for new heavier vehicles by the option to remain subject to the requirements of § 129.52d or to elect to be subject to this final-form rulemaking. This final-form rulemaking provides flexibility to all of the potentially affected owners and operators by amending § 129.51(a) to extend its applicability to the owner and operator of a coating operation subject to this final-form rulemaking. Section 129.51(a) authorizes the owner or operator to achieve compliance through an alternative method, which would achieve VOC emission reductions equal to or greater than those of this final-form rulemaking, by submitting the alternative method to the Department for review and approval in an applicable plan approval or operating permit, or both.

The VOC emission limitations established by this final-form rulemaking will not require the submission of applications for amendments to existing operating permits. These requirements will be incorporated as applicable requirements at the time of permit renewal, if less than 3 years remain in the permit term, as specified under § 127.463(c) (relating to operating permit revisions to incorporate applicable standards). If 3 years or more remain in the permit term, the requirements will be incorporated as applicable requirements in the permit within 18 months of the promulgation of this final-form rulemaking, as required under § 127.463(b). Most importantly, § 127.463(e) specifies that “[r]egardless of whether a revision is required under this section, the permittee shall meet the applicable standards or regulations promulgated under the Clean Air Act within the time frame required by standards or regulations. . . .” Consequently, upon promulgation as a final-form rulemaking, the requirements will apply to affected owners and operators irrespective of a modification to the operating permit.

New legal, accounting or consulting procedures are not required.

#### *Compliance assistance plan*

The Department plans to educate and assist the public and regulated community in understanding the requirements of this final-form rulemaking and how to comply with them. This will be accomplished through the Department’s ongoing compliance assistance program. The Department will also work with the Pennsylvania Small Business Assistance Program to aid the owners and operators of facilities less able to handle permitting matters with in-house staff.

#### *Paperwork requirements*

The recordkeeping and reporting requirements for owners and operators of affected facilities at, above or below the threshold for control measures are minimal because the records required under this final-form rulemaking are consistent with what the industry currently tracks for inventory purposes or is required in current permits. The owner or operator of a facility subject to this final-form rulemaking is required to maintain records sufficient to demonstrate compliance with the applicable requirements. Records maintained for compliance demonstrations may include purchase, use, production and other records. The records shall be maintained onsite for 2 years, unless a longer period is required by an order, plan

approval or operating permit issued under Chapter 127 and submitted to the Department in an acceptable format upon receipt of a written request from the Department.

#### *H. Pollution Prevention*

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

Statewide implementation of the VOC emission control measures in this final-form rulemaking may generate reductions of as much as 111 tons of VOC emissions per year from the 10 potentially subject facilities identified by the Department in its databases that are likely to be subject at or above the applicability threshold of 15 pounds (6.8 kilograms) per day of total actual VOC emissions, including VOC emissions from related cleaning activities, before consideration of controls. The owners and operators of these ten facilities will be required to implement the VOC control measures of this final-form rulemaking depending on the level of compliance already demonstrated by the owners and operators of these facilities. These projected estimated reductions in VOC emissions and the subsequent reduced formation of ground-level ozone will help ensure that the owners and operators of businesses, citizens and the environment of this Commonwealth experience the benefits of improved ground-level ozone air quality. Commonwealth residents will also potentially benefit from improved groundwater quality through reduced quantities of VOCs and HAPs from the use of low-VOC content and low-HAP content automobile and light-duty truck assembly coatings, heavier vehicle coatings and cleaning materials.

Although this final-form rulemaking is designed primarily to address ozone air quality, the reformulation of high-VOC content coating materials to low-VOC content coating materials or the substitution of low-VOC content coating materials for high-VOC content materials to meet the VOC content limits applicable to users may also result in reduction of HAP emissions, which are also a serious health threat. The reduced levels of high-VOC content and high-HAP content solvents will benefit groundwater quality through reduced loading on water treatment plants and in reduced quantities of high-VOC content and high-HAP content solvents leaching into the ground, streams and rivers.

This final-form rulemaking provides for compliance through the use of complying coating materials and through work practice standards for coating-related activities and cleaning materials. Flexibility in compliance is provided for an owner or operator of a separate coating line at an automobile and light-duty truck assembly coating facility and an owner or operator of a facility that coats bodies or body parts for new heavier vehicles by the option to remain subject to the requirements of § 129.52d or to elect to be subject to this final-form rulemaking. This final-form rulemaking provides flexibility to all of the potentially affected owners and operators by amending § 129.51(a) to extend its applicability to the owner and operator of a coating operation subject to this final-form rulemaking. Section 129.51(a) authorizes the

owner or operator to achieve compliance through an alternative method, which will achieve VOC emission reductions equal to or greater than those of this final-form rulemaking, by submitting the alternative method to the Department for review and approval in an applicable plan approval or operating permit, or both.

The development and implementation of a written work practice standard for the use and application of cleaning materials, as well as implementation of work practices for coating-related activities, is expected to result in a net cost savings for coating and cleaning materials and related activities for affected owners and operators. Implementing the required work practices for coating-related activities and cleaning materials should reduce the amounts of VOC emissions overall from coating operations by reducing the amounts of VOC-containing coating and cleaning materials that are lost to evaporation, spillage and waste, and reducing or eliminating associated VOC emissions, thereby reducing the costs of purchasing coating and cleaning materials for use in the operation as well as decreasing the amount of annual emissions fees that must be paid for VOC emissions.

*I. Sunset Review*

This final-form rulemaking will be reviewed in accordance with the sunset review schedule published by the Department to determine whether it effectively fulfills the goals for which it was intended.

*J. Regulatory Review*

Under section 5(a) of the Regulatory Review Act (71 P.S. § 745.5(a)), on July 13, 2015, the Department submitted a copy of the notice of proposed rulemaking, published at 45 Pa.B. 4351, to IRRC and the Chairpersons of the House and Senate Environmental Resources and Energy Committees for review and comment.

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

Under section 5.1(j.2) of the Regulatory Review Act (71 P.S. § 745.5a(j.2)), on August 17, 2016, this final-form rulemaking was deemed approved by the House and Senate Committees. Under section 5.1(e) of the Regulatory Review Act, IRRC met on August 18, 2016, and approved this final-form rulemaking.

*K. Findings*

The Board finds that:

- (1) Public notice of proposed rulemaking was given under sections 201 and 202 of the act of July 31, 1968 (P.L. 769, No. 240) (45 P.S. §§ 1201 and 1202) and regulations promulgated thereunder, 1 Pa. Code §§ 7.1 and 7.2.
- (2) At least a 60-day public comment period was provided as required by law and all comments were considered.
- (3) This final-form rulemaking does not enlarge the purpose of the proposed rulemaking published at 45 Pa.B. 4351.
- (4) These regulations are necessary and appropriate for administration and enforcement of the authorizing acts identified in Section C of this preamble.
- (5) These regulations are reasonably necessary to attain and maintain the ozone NAAQS and to satisfy related CAA requirements.

*L. Order*

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

(a) The regulations of the Department, 25 Pa. Code Chapter 129, are amended by adding § 129.52e and amending § 129.51 to read as set forth in Annex A.

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

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

(d) The Chairperson of the Board shall certify this order and Annex A and deposit them with the Legislative Reference Bureau as required by law.

(e) This final-form rulemaking will be submitted to the EPA as an amendment to the Pennsylvania SIP.

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

PATRICK McDONNELL,  
*Acting Chairperson*

*(Editor's Note: See 46 Pa.B. 6758 (October 22, 2016) for a related final-form rulemaking adopting § 129.52d.)*

*(Editor's Note: See 46 Pa.B. 5790 (September 3, 2016) for IRRC's approval order.)*

**Fiscal Note:** Fiscal Note 7-490 remains valid for the final adoption of the subject regulations.

**Annex A**

**TITLE 25. ENVIRONMENTAL PROTECTION  
PART I. DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**Subpart C. PROTECTION OF NATURAL RESOURCES**

**ARTICLE III. AIR RESOURCES**

**CHAPTER 129. STANDARDS FOR SOURCES**

**SOURCES OF VOCs**

**§ 129.51. General.**

(a) *Equivalency.* Compliance with §§ 129.52, 129.52a, 129.52b, 129.52c, 129.52d, 129.52e, 129.54—129.67, 129.67a, 129.67b, 129.68, 129.69, 129.71—129.73 and 129.77 may be achieved by alternative methods if the following exist:

- (1) The alternative method is approved by the Department in an applicable plan approval or operating permit, or both.
- (2) The resulting emissions are equal to or less than the emissions that would have been discharged by complying with the applicable emission limitation.
- (3) Compliance by a method other than the use of a low VOC coating, adhesive, sealant, adhesive primer, sealant primer, surface preparation solvent, cleanup solvent, cleaning solution, fountain solution or ink which meets the applicable emission limitation in §§ 129.52, 129.52a, 129.52b, 129.52c, 129.52d, 129.52e, 129.67, 129.67a, 129.67b, 129.73 and 129.77 shall be determined on the basis of equal volumes of solids.

(4) Capture efficiency testing and emissions testing are conducted in accordance with methods approved by the EPA.

(5) Adequate records are maintained to ensure enforceability.

(6) The alternative compliance method is incorporated into a plan approval or operating permit, or both, reviewed by the EPA, including the use of an air cleaning device to comply with § 129.52, § 129.52a, § 129.52b, § 129.52c, § 129.52d, § 129.52e, § 129.67, § 129.67a, § 129.67b, § 129.68(b)(2) and (c)(2), § 129.73 or § 129.77.

(b) *New source performance standards.* Sources covered by new source performance standards which are more stringent than those contained in this chapter shall comply with those standards in lieu of the standards in this chapter.

(c) *Demonstration of compliance.* Unless otherwise set forth in this chapter, test methods and procedures used to monitor compliance with the emission requirements of this section are those specified in Chapter 139 (relating to sampling and testing).

(d) *Records.* The owner or operator of a facility or source subject to one or more of the VOC emission limitations and control requirements in this chapter shall keep records to demonstrate compliance with the applicable limitation or control requirement.

(1) The records shall provide sufficient data and calculations to clearly demonstrate that the applicable emission limitation or control requirement is met. Data or information required to determine compliance with an applicable limitation shall be recorded and maintained in a time frame consistent with the averaging period of the standard.

(2) The records shall be maintained onsite for 2 years, unless a longer period is required by a plan approval or operating permit issued under Chapter 127 (relating to construction, modification, reactivation and operation of sources). The records shall be made available to the Department on request.

(e) *Demonstration of exempt status.* The owner or operator of a facility or source claiming that the facility or source is exempt from the VOC control provisions of this chapter shall maintain records that clearly demonstrate to the Department that the facility or source is not subject to the VOC emission limitations or control requirements of this chapter.

**§ 129.52e. Control of VOC emissions from automobile and light-duty truck assembly coating operations and heavier vehicle coating operations.**

(a) *Applicability.*

(1) This section applies to the owner and operator of an automobile and light-duty truck assembly coating operation that applies an automobile assembly coating or a light-duty truck assembly coating, or both, to one or more of the following:

(i) A new automobile body or a new light-duty truck body.

(ii) A body part for a new automobile or for a new light-duty truck.

(iii) Another part that is coated along with the new automobile body or body part or new light-duty truck body or body part.

(2) This section applies to the owner and operator of an automobile and light-duty truck assembly coating operation that operates a separate coating line at the facility on which a coating is applied to another part intended for use in a new automobile or new light-duty truck or an aftermarket repair or replacement part for an automobile

or light-duty truck if the owner or operator elects to comply with this section instead of § 129.52d (relating to control of VOC emissions from miscellaneous metal parts surface coating processes, miscellaneous plastic parts surface coating processes and pleasure craft surface coatings). The election occurs when the owner or operator notifies the Department by submitting a written statement to the appropriate Department regional office Air Quality Program Manager that specifies the intent to comply with this section instead of § 129.52d.

(3) This section applies to the owner and operator of a facility that coats a body or body part for a new heavier vehicle if the owner or operator elects to comply with this section instead of § 129.52d. The election occurs when the owner or operator notifies the Department by submitting a written statement to the appropriate Department regional office Air Quality Program Manager that specifies the intent to comply with this section instead of § 129.52d.

(4) This section applies to the owner and operator of a facility that performs a coating operation subject to this section on a contractual basis.

(5) This section does not apply to the use or application of an automobile and light-duty truck assembly coating by an owner or operator at a plastic or composites molding facility.

(b) *Definitions.* The following words and terms, when used in this section, have the following meanings, unless the context clearly indicates otherwise:

*Adhesive*—A chemical substance that is applied for the purpose of bonding two surfaces together by other than mechanical means.

*Assembly coating*—The term includes the primary and additional surface coatings applied during the vehicle assembly process.

(i) Primary coatings include the following:

- (A) Electrodeposition primer.
- (B) Primer-surfacer (including anti-chip coatings).
- (C) Topcoat (including basecoat and clearcoat).
- (D) Final repair.

(ii) Additional coatings include the following:

- (A) Glass bonding primer.
- (B) Adhesives.
- (C) Cavity wax.
- (D) Sealer.
- (E) Deadener.
- (F) Gasket/gasket sealing material.
- (G) Underbody coating.
- (H) Trunk interior coating.
- (I) Bedliner.
- (J) Weatherstrip adhesive.
- (K) Lubricating waxes and compounds.

(iii) The term does not include aerosol coatings.

*Automobile*—

(i) A motor vehicle designed to carry up to eight passengers.

(ii) The term does not include vans, sport utility vehicles and motor vehicles designed primarily to transport light loads of property.

*Automobile and light-duty truck adhesive*—An adhesive, including glass bonding adhesive, used at an automobile

and light-duty truck assembly coating operation, applied for the purpose of bonding two vehicle surfaces together without regard to the substrates involved.

*Automobile and light-duty truck assembly coating operation*—An operation that applies an assembly coating to a new automobile body or a new light-duty truck body, or both, or a body part for a new automobile or for a new light-duty truck, or both, or another part that is coated along with the new automobile body or body part or new light-duty truck body or body part. The operation consists of one or more of the following processes:

- (i) Surface preparing.
- (ii) Priming, including application of either of the following:
  - (A) Electrodeposition primer.
  - (B) Primer-surfacer.
- (iii) Topcoating.
- (iv) Final repairing.
- (v) Cleaning activities related to the vehicle coating operations.

*Automobile and light-duty truck bedliner*—A multi-component coating, used at an automobile and light-duty truck assembly coating operation, applied to a cargo bed after the application of topcoat and outside of the topcoat operation to provide additional durability and chip resistance.

*Automobile and light-duty truck cavity wax*—A coating, used at an automobile and light-duty truck assembly coating operation, applied into the cavities of the vehicle primarily for the purpose of enhancing corrosion protection.

*Automobile and light-duty truck deadener*—A coating, used at an automobile and light-duty truck assembly coating operation, applied to selected vehicle surfaces primarily for the purpose of reducing the sound of road noise in the passenger compartment.

*Automobile and light-duty truck gasket/gasket sealing material*—

- (i) A fluid, used at an automobile and light-duty truck assembly coating operation, applied to coat a gasket or replace and perform the same function as a gasket.
- (ii) The term includes room temperature vulcanization seal material.

*Automobile and light-duty truck glass bonding primer*—

- (i) A primer, used at an automobile and light-duty truck assembly coating operation, applied to windshield or other glass, or to body openings, to prepare the glass or body opening for the application of glass bonding adhesives or the installation of adhesive bonded glass.
- (ii) The term includes glass bonding and cleaning primers that perform both functions (cleaning and priming of the windshield or other glass, or body openings) prior to the application of adhesive or the installation of adhesive bonded glass.

*Automobile and light-duty truck lubricating wax/compound*—A protective lubricating material, used at an automobile and light-duty truck assembly coating operation, applied to vehicle hubs and hinges.

*Automobile and light-duty truck sealer*—

- (i) A high viscosity material, used at an automobile and light-duty truck assembly coating operation, generally, but not always, applied in the paint shop after the body has received an EDP coating and before the application of subsequent coatings (for example, primer-surfacer). The

primary purpose of the material is to fill body joints completely so that there is no intrusion of water, gases or corrosive materials into the passenger area of the body compartment.

- (ii) The term is also known as sealant, sealant primer or caulk.

*Automobile and light-duty truck trunk interior coating*—A coating, used at an automobile and light-duty truck assembly coating operation outside of the primer-surfacer and topcoat operations, applied to the trunk interior to provide chip protection.

*Automobile and light-duty truck underbody coating*—A coating, used at an automobile and light-duty truck assembly coating operation, applied to the undercarriage or firewall to prevent corrosion or provide chip protection, or both.

*Automobile and light-duty truck weatherstrip adhesive*—An adhesive, used at an automobile and light-duty truck assembly coating operation, applied to weatherstripping materials for the purpose of bonding the weatherstrip material to the surface of the vehicle.

*Automobile Topcoat Protocol*—A guidance document by the United States Environmental Protection Agency for determining the daily volatile organic compound emission rate of automobile and light-duty truck primer-surfacer and topcoat operations (EPA-453/R-08-002, September 2008, or revisions).

*Body part*—

- (i) An exterior part of a motor vehicle including the hood, fender, door, roof, quarter panel, deck lid, tail gate and cargo bed.
- (ii) The term does not include a bumper, fascia or cladding.

*EDP—Electrodeposition primer*—

- (i) A process of applying a protective, corrosion-resistant waterborne primer on exterior and interior surfaces that provides thorough coverage of recessed areas. It is a dip coating method that uses an electrical field to apply or deposit the conductive coating onto the part. The object being painted acts as an electrode that is oppositely charged from the particles of paint in the dip tank.

- (ii) The term is also known as E-Coat, Uni-Prime and ELPO primer.

*Final repair*—The operations performed and coating or coatings applied to completely assembled motor vehicles or to parts that are not yet on a completely assembled vehicle to correct damage or imperfections in the coating. The curing of the coatings applied in these operations is accomplished at a lower temperature than that used for curing primer-surfacer and topcoat. This lower temperature cure avoids the need to send parts that are not yet on a completely assembled vehicle through the same type of curing process used for primer-surfacer and topcoat and is necessary to protect heat sensitive components on completely assembled vehicles.

*Heavier vehicle*—A self-propelled vehicle designed for transporting persons or property on a street or highway that has a gross vehicle weight rating over 8,500 pounds.

*In-line repair*—

- (i) The operation performed and coating or coatings applied to correct damage or imperfections in the topcoat on parts that are not yet on a completely assembled vehicle. The curing of the coatings applied in these operations is accomplished at essentially the same tem-

perature as that used for curing the previously applied topcoat. This operation is considered part of the topcoat operation.

(ii) The term is also known as high bake repair or high bake reprocess.

*Light-duty truck*—A van, sport utility vehicle or motor vehicle designed primarily to transport light loads of property with a gross vehicle weight rating of 8,500 pounds or less.

*Primer-surfacer*—

(i) An intermediate protective coating applied over the EDP and under the topcoat. The coating provides adhesion, protection and appearance properties to the total finish.

(ii) The coating operation may include one or more other coatings, including antichip, lower-body antichip, chip-resistant edge primer, spot primer, blackout, deadener, interior color, basecoat replacement coating or other coating, that is applied in the same spray booth.

(iii) The term is also known as guide coat or surfacer.

*Solids turnover ratio ( $R_T$ )*—The ratio of total volume of coating solids that is added to the EDP system in a calendar month divided by the total volume design capacity of the EDP system.

*Topcoat*—

(i) The final coating system applied to provide the final color or a protective finish, or both. The coating may be a monocoat color or basecoat/clearcoat system.

(ii) The coating operation may include one or more other coatings including blackout, interior color or other coating that is applied in the same spray booth.

(iii) The term includes in-line repair and two-tone.

(c) *Existing RACT permit*. The requirements of this section supersede the requirements of a RACT permit issued under §§ 129.91—129.95 (relating to stationary sources of NO<sub>x</sub> and VOCs) to the owner or operator of a source subject to this section prior to January 1, 2017, except to the extent the RACT permit contains more stringent requirements.

(d) *VOC content limits*.

(1) Beginning January 1, 2017, the VOC content limits specified in Tables I and II apply to an owner and operator of a facility that has total actual VOC emissions equal to or greater than 15 pounds (6.8 kilograms) per day, before consideration of controls, from all operations at the facility that apply an assembly coating subject to this section, including related cleaning activities.

(2) Beginning January 1, 2017, the VOC content limits specified in Tables I and II do not apply to the following:

(i) An owner and operator of a facility that has total actual VOC emissions below 15 pounds (6.8 kilograms) per day, before consideration of controls, from all operations at the facility that apply an assembly coating subject to this section, including related cleaning activities.

(ii) An assembly coating supplied in a container with a net volume of 16 ounces or less or a net weight of 1 pound or less.

(e) *Work practice requirements*. Beginning January 1, 2017, an owner and operator subject to subsection (d)(1) shall comply with the following work practices for:

(1) Coating-related activities. An owner and operator shall:

(i) Store all VOC-containing coatings, thinners and coating-related waste materials in closed containers.

(ii) Ensure that mixing and storage containers used for VOC-containing coatings, thinners and coating-related waste materials are kept closed at all times except when depositing or removing these materials.

(iii) Minimize spills of VOC-containing coatings, thinners and coating-related waste materials and clean up spills immediately.

(iv) Convey VOC-containing coatings, thinners and coating-related waste materials from one location to another in closed containers or pipes.

(v) Minimize VOC emissions from cleaning of storage, mixing and conveying equipment.

(2) *Cleaning materials*. An owner and operator shall develop and implement a written work practice plan to minimize VOC emissions from cleaning and purging of equipment associated with all coating operations for which emission limits are required. The written plan must specify practices and procedures to ensure that VOC emissions from the following operations are minimized:

(i) Vehicle body wiping.

(ii) Coating line purging.

(iii) Flushing of coating systems.

(iv) Cleaning of spray booth grates.

(v) Cleaning of spray booth walls.

(vi) Cleaning of spray booth equipment.

(vii) Cleaning external spray booth areas.

(viii) Other housekeeping measures, including:

(A) Storing all VOC-containing cleaning materials and used shop towels in closed containers.

(B) Ensuring that mixing and storage containers used for VOC-containing cleaning materials are kept closed at all times except when depositing or removing these materials.

(C) Minimizing spills of VOC-containing cleaning materials and cleaning up spills immediately.

(D) Conveying VOC-containing cleaning materials from one location to another in closed containers or pipes.

(E) Minimizing VOC emissions from cleaning of storage, mixing and conveying equipment.

(f) *Compliance monitoring and recordkeeping*. An owner or operator subject to this section shall maintain records sufficient to demonstrate compliance with this section.

(1) The owner or operator shall maintain daily records of the following parameters for each coating, thinner, component or cleaning material as supplied:

(i) The name and identification number.

(ii) The volume used.

(iii) The mix ratio.

(iv) The density or specific gravity.

(v) The weight percent of total volatiles, water, solids and exempt solvents.

(vi) The volume percent of solids for each EDP coating.

(vii) The VOC content.

(2) The owner or operator shall maintain a daily record of the VOC content of each as applied coating or cleaning material.

(3) The owner or operator shall:

(i) Maintain the records onsite for 2 years, unless a longer period is required under Chapter 127 (relating to

construction, modification, reactivation and operation of sources) or a plan approval, operating permit or order issued by the Department.

(ii) Submit the records to the Department in an acceptable format upon receipt of a written request from the Department.

(4) The owner or operator subject to subsection (e) shall maintain the written work practice plan specified in subsection (e)(2) onsite and make it available to the Department upon request.

(g) *Measurement, calculation, sampling and testing methodologies.* The following measurement, calculation, sampling and testing methodologies shall be used to determine the amount of VOC emissions from automobile and light-duty truck assembly coating operations and heavier vehicle coating operations, as appropriate:

(1) Measurements of the volatile fraction of coatings shall be performed according to the following, as applicable:

(i) EPA Reference Method 24.

(ii) Appendix A of 40 CFR Part 63, Subpart PPPP (relating to National emission standards for hazardous air pollutants for surface coating of plastic parts and

products), regarding determination of weight volatile matter content and weight solids content of reactive adhesives.

(iii) Manufacturer's formulation data.

(2) Calculations of the VOC emissions and rates shall be performed according to the following, as applicable:

(i) Automobile Topcoat Protocol—*Protocol for Determining the Daily Volatile Organic Compound Emission Rate of Automobile and Light-Duty Truck Primer-Surfacer and Topcoat Operations*, EPA-453/R-08-002, including updates and revisions. This protocol applies to the owner and operator of a facility that coats a body or body part for a new heavier vehicle that elects under subsection (a)(3) to comply with this section instead of § 129.52d.

(ii) *A Guideline for Surface Coating Calculations*, EPA-340/1-86-016, including updates and revisions.

(iii) *Procedures for Certifying Quantity of Volatile Organic Compounds Emitted by Paint, Ink, and Other Coatings*, EPA-450/3-84-019, including updates and revisions.

(3) Sampling and testing shall be performed according to the procedures and test methods specified in Chapter 139 (relating to sampling and testing).

(4) Another method or procedure that has been approved in writing by the Department and the EPA.

**Table I. VOC Content Limits for Primary Assembly Coatings**

<i>Assembly Coating</i>	<i>VOC Emission Limit</i>		
	When $R_T^1 < 0.040$	When $0.040 \leq R_T^1 < 0.160$	When $R_T^1 \geq 0.160$
	No VOC emission limit	$0.084 \times 350^{0.160-R_T}$ kg VOC/liter coating solids applied or $0.084 \times 350^{0.160-R_T} \times 8.34$ lb VOC/gal coating solids applied	0.084 kg VOC/liter coating solids applied or 0.7 lb VOC/gal coating solids applied
Primer-surfacer operations (including application area, flash-off area, and oven)	1.44 kg VOC/liter of deposited solids or 12.0 lbs VOC/gal deposited solids  on a daily weighted average basis as determined by following the procedures in the revised Automobile Topcoat Protocol.		
Topcoat operations (including application area, flash-off area, and oven)	1.44 kg VOC/liter of deposited solids or 12.0 lbs VOC/gal deposited solids  on a daily weighted average basis as determined by following the procedures in the revised Automobile Topcoat Protocol.		
Final repair operations	0.58 kg VOC/liter less water and less exempt solvents or 4.8 lbs VOC/gallon of coating less water and less exempt solvents  on a daily weighted average basis or as an occurrence weighted average.		
Combined primer-surfacer and topcoat operations	1.44 kg VOC/liter of deposited solids or 12.0 lbs VOC/gal deposited solids  on a daily weighted average basis as determined by following the procedures in the revised Automobile Topcoat Protocol.		
<sup>1</sup> $R_T$ is the solids turnover ratio. "Solids turnover ratio" is defined in subsection (b).			

**Table II. VOC Content Limits for Additional Assembly Coatings  
(grams of VOC per liter of coating excluding water and exempt compounds) as Applied**

<i>Material<sup>2</sup></i>	<i>g VOC/liter coating less water and exempt compounds</i>	<i>lb VOC/gal coating less water and exempt compounds</i>
Automobile and Light-duty Truck Glass Bonding Primer	900	7.51
Automobile and Light-duty Truck Adhesive	250	2.09
Automobile and Light-duty Truck Cavity Wax	650	5.4
Automobile and Light-duty Truck Sealer	650	5.4
Automobile and Light-duty Truck Deadener	650	5.4
Automobile and Light-duty Truck Gasket/Gasket Sealing Material	200	1.7
Automobile and Light-duty Truck Underbody Coating	650	5.4
Automobile and Light-duty Truck Trunk Interior Coating	650	5.4
Automobile and Light-duty Truck Bedliner	200	1.7
Automobile and Light-duty Truck Lubricating Wax/Compound	700	5.8
Automobile and Light-duty Truck Weatherstrip Adhesive	750	6.26

<sup>2</sup> The owner and operator of a facility that coats a body or body part, or both, for a new heavier vehicle that elects under subsection (a)(3) to comply with this section instead of § 129.52d shall comply with these limits for equivalent coating materials.

[Pa.B. Doc. No. 16-1846. Filed for public inspection October 21, 2016, 9:00 a.m.]

## ENVIRONMENTAL QUALITY BOARD [ 25 PA. CODE CH. 129 ]

### Control of Volatile Organic Compound Emissions from Miscellaneous Metal Parts Surface Coating Processes, Miscellaneous Plastic Parts Surface Coating Processes and Pleasure Craft Surface Coatings

The Environmental Quality Board (Board) amends Chapter 129 (relating to standards for sources) to read as set forth in Annex A. This final-form rulemaking adds § 129.52d (relating to control of VOC emissions from miscellaneous metal parts surface coating processes, miscellaneous plastic parts surface coating processes and pleasure craft surface coatings) to adopt reasonably available control technology (RACT) requirements and RACT emission limitations for stationary sources of volatile organic compound (VOC) emissions from miscellaneous metal parts surface coating processes, miscellaneous plastic parts surface coating processes and pleasure craft surface coatings. These processes include surface coating of miscellaneous metal parts or products, miscellaneous plastic parts or products, automotive and transportation plastic parts, business machine plastic parts, pleasure craft (recreational boats), and bodies or body parts for new heavier vehicles, and surface coating performed on a separate coating line at an automobile and light-duty truck assembly coating facility on which coatings are applied to other parts intended for use in new automobiles or new light-duty trucks or to aftermarket repair or replacement parts for automobiles or light-duty trucks, as well as related cleaning activities. This final-form rulemaking adds terms and definitions to § 129.52d to support the interpretation of the measures and amends §§ 129.51, 129.52, 129.67 and 129.75 to support the addition of § 129.52d.

This final-form rulemaking will be submitted to the United States Environmental Protection Agency (EPA) for

approval as a revision to the Commonwealth's State Implementation Plan (SIP) following promulgation of this final-form rulemaking.

This final-form rulemaking is given under Board order at its meeting of June 21, 2016.

#### A. *Effective Date*

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

#### B. *Contact Persons*

For further information, contact Kirit Dalal, Chief, Division of Air Resource Management, Bureau of Air Quality, Rachel Carson State Office Building, P.O. Box 8468, Harrisburg, PA 17105-8468, (717) 772-3436; or Jesse C. Walker, Assistant Counsel, Bureau of Regulatory Counsel, Rachel Carson State Office Building, P.O. Box 8464, Harrisburg, PA 17105-8464, (717) 787-7060. Persons with a disability may use the Pennsylvania AT&T Relay Service, (800) 654-5984 (TDD users) or (800) 654-5988 (voice users). This final-form rulemaking is available on the Department of Environmental Protection's (Department) web site at [www.dep.pa.gov](http://www.dep.pa.gov) (select "Public Participation," then "Environmental Quality Board (EQB)").

#### C. *Statutory Authority*

This final-form rulemaking is authorized under section 5(a)(1) of the Air Pollution Control Act (act) (35 P.S. § 4005(a)(1)), which grants the Board the authority to adopt rules and regulations for the prevention, control, reduction and abatement of air pollution in this Commonwealth. Section 5(a)(8) of the act grants the Board the authority to adopt rules and regulations designed to implement the provisions of the Clean Air Act (CAA) (42 U.S.C.A. §§ 7401—7671q).

#### D. *Background and Purpose*

The purpose of this final-form rulemaking is to implement control measures to reduce VOC emissions from miscellaneous metal parts surface coating processes, mis-



cellaneous plastic parts surface coating processes and pleasure craft surface coatings. These processes include surface coating of miscellaneous metal parts or products, miscellaneous plastic parts or products, automotive and transportation plastic parts, business machine plastic parts, pleasure craft (recreational boats), and bodies or body parts for new heavier vehicles, and surface coating performed on a separate coating line at an automobile and light-duty truck assembly coating facility on which coatings are applied to other parts intended for use in new automobiles or new light-duty trucks or to aftermarket repair or replacement parts for automobiles or light-duty trucks, as well as related cleaning activities.

Miscellaneous metal parts and products and miscellaneous plastic parts and products include metal and plastic components of the following types of products as well as the products themselves: fabricated metal products; molded plastic parts; small and large farm machinery; commercial and industrial machinery and equipment; automotive or transportation equipment; interior or exterior automotive parts; construction equipment; motor vehicle accessories; bicycles and sporting goods; toys; recreational vehicles; pleasure craft (recreational boats); extruded aluminum structural components; railroad cars; heavier vehicles; lawn and garden equipment; business machines; laboratory and medical equipment; electronic equipment; steel drums; metal pipes; and numerous other industrial and household products.

VOCs are precursors for ground-level ozone formation. Ground-level ozone, a public health and welfare hazard, is not emitted directly to the atmosphere from these sources, but forms from a photochemical reaction between VOCs and nitrogen oxides ( $\text{NO}_x$ ) in the presence of sunlight. In accordance with sections 172(c)(1), 182(b)(2)(A) and 184(b)(1)(B) of the CAA (42 U.S.C.A. §§ 7502(c)(1), 7511a(b)(2)(A) and 7511c(b)(1)(B)), this final-form rulemaking establishes VOC emission limitations and other requirements consistent with the recommendations of the EPA 2008 Miscellaneous Metal and Plastic Parts Coatings Control Techniques Guidelines (2008 MMPP CTG) for these sources in this Commonwealth. See "Consumer and Commercial Products, Group IV: Control Techniques Guidelines in Lieu of Regulations for Miscellaneous Metal Products Coatings, Plastic Parts Coatings, Auto and Light-Duty Truck Assembly Coatings, Fiberglass Boat Manufacturing Materials, and Miscellaneous Industrial Adhesives," 73 FR 58481, 58483 (October 7, 2008).

The EPA is responsible for establishing National Ambient Air Quality Standards (NAAQS) for six criteria pollutants considered harmful to public health and welfare, including the environment: ground-level ozone, particulate matter,  $\text{NO}_x$ , carbon monoxide, sulfur dioxide and lead. Section 109 of the CAA (42 U.S.C.A. § 7409) established two types of NAAQS: primary standards, which are limits set to protect public health; and secondary standards, which are limits set to protect public welfare and the environment, 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.

Ground-level ozone is a highly reactive gas, which at sufficiently high concentrations can produce a wide variety of harmful effects. At elevated concentrations, ground-level ozone can adversely affect human health, animal health, vegetation, materials, economic values, and personal comfort and well-being. It can cause damage to

important food crops, forests, livestock and wildlife. Repeated exposure to ground-level ozone pollution may cause a variety of adverse health effects for both healthy people and those with existing conditions, including difficulty in breathing, chest pains, coughing, nausea, throat irritation and congestion. It can worsen bronchitis, heart disease, emphysema and asthma, and reduce lung capacity. Asthma is a significant and growing threat to children and adults. High levels of ground-level ozone adversely affect animals in ways similar to humans. High levels of ground-level ozone can also cause damage to buildings and synthetic fibers, including nylon, and reduced visibility on roadways and in natural areas. The implementation of additional measures to address ozone air quality nonattainment in this Commonwealth is necessary to protect the public health and welfare, animal and plant health and welfare, and the environment.

In July 1997, the EPA promulgated primary and secondary ozone NAAQS at a level of 0.08 part per million (ppm) averaged over 8 hours. See 62 FR 38856 (July 18, 1997). In 2004, the EPA designated 37 counties in this Commonwealth as 8-hour ozone nonattainment areas for the 1997 8-hour ozone NAAQS. Based on the ambient air monitoring data for the 2014 and 2015 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 NAAQS. In accordance with the CAA, the maintenance plans include permanent and enforceable control measures that will provide for the maintenance of the ozone NAAQS for at least 10 years following the EPA's redesignation of the areas to attainment. Eight years after the EPA redesignates an area to attainment, additional maintenance plans approved by the EPA must also provide for the maintenance of the ozone NAAQS for another 10 years following the expiration of the initial 10-year period.

In March 2008, the EPA lowered the primary and secondary ozone NAAQS to 0.075 ppm averaged over 8 hours to provide even greater protection for children, other at-risk populations and the environment against the array of ground-level ozone-induced adverse health and welfare effects. See 73 FR 16436 (March 27, 2008). In April 2012, the EPA designated five areas in this Commonwealth as nonattainment for the 2008 ozone NAAQS. See 77 FR 30088, 30143 (May 21, 2012). These areas include all or a portion of Allegheny, Armstrong, Berks, Beaver, Bucks, Butler, Carbon, Chester, Delaware, Fayette, Lancaster, Lehigh, Montgomery, Northampton, Philadelphia, Washington and Westmoreland Counties. The Department's analysis of 2014 ambient air ozone concentrations showed that all ozone samplers in this Commonwealth, except the Harrison sampler in Allegheny County, were monitoring attainment of the 2008 ozone NAAQS. The certified 2015 ozone season monitoring data indicate that all areas of this Commonwealth, including the Harrison sampler, are monitoring attainment of the 2008 ozone NAAQS as well. As with the 1997 ozone NAAQS, the Department must ensure that the 2008 ozone NAAQS are attained and maintained by implementing permanent and enforceable control measures. At the Department's request, the EPA granted 1-year attainment date extensions for the 2008 ozone NAAQS in the Philadelphia and Pittsburgh-Beaver Valley Areas due to air monitor violations in New Jersey and Maryland.

On October 1, 2015, the EPA again lowered the ozone NAAQS, this time to 0.070 ppm averaged over 8 hours. See 80 FR 65292 (October 26, 2015). Based on ambient

air monitoring data for the 2013–2015 ozone seasons, eight monitors in this Commonwealth have design values that violate the 2015 ozone NAAQS. The samplers are located in Allegheny, Armstrong, Bucks, Delaware, Indiana, Lebanon, Montgomery and Philadelphia Counties. The Commonwealth submitted designation recommendations for the 2015 ozone NAAQS to the EPA on October 3, 2016. The EPA's final designations for attainment and nonattainment areas for the 2015 ozone NAAQS are expected to take effect in December 2017.

Reductions in VOC emissions that are achieved following the adoption and implementation of VOC RACT emission control measures for source categories covered by Control Techniques Guidelines (CTG), including miscellaneous metal parts surface coating processes, miscellaneous plastic parts surface coating processes and pleasure craft surface coatings, will allow the Commonwealth to make progress in achieving and maintaining the 1997, 2008 and 2015 8-hour ozone NAAQS.

This final-form rulemaking, which is consistent with the RACT recommendations in the EPA's 2008 MMPP CTG, will reduce VOC emissions from the miscellaneous metal parts surface coating processes, miscellaneous plastic parts surface coating processes and pleasure craft surface coatings categories in ozone nonattainment and maintenance areas in this Commonwealth for those affected sources that do not already comply with the control measures. These final-form VOC emission reduction control measures will assist the Commonwealth in achieving and maintaining the ozone NAAQS Statewide.

There are no Federal statutory or regulatory RACT limits for VOC emissions from these miscellaneous metal parts surface coating processes, miscellaneous plastic parts surface coating processes and pleasure craft surface coatings. In 2004, however, the EPA promulgated 40 CFR Part 63, Subparts M and P (relating to National emission standards for hazardous air pollutants for surface coating of miscellaneous metal parts and products; and National emission standards for hazardous air pollutants for surface coating of plastic parts and products) (collectively referred to as 2004 NESHAPs). See 69 FR 130 (January 2, 2004) and 69 FR 20968 (April 19, 2004). These 2004 NESHAPs established organic hazardous air pollutant (HAP) emission limits based on low-HAP content coatings and low-volatile-emitting (nonatomizing) coating application technology for the respective surface coating categories.

When developing the control measure recommendations included in its 2008 MMPP CTG for reducing VOC emissions from these sources, the EPA took into account the HAP emission reduction measures of the 2004 NESHAPs for the metal parts and products and the plastic parts and products coating industries. Many HAPs are also VOCs, but not all VOCs are HAPs. The requirements of the 2004 NESHAPs apply to "major sources" of HAP emissions from miscellaneous metal parts and products coating facilities and plastic parts and products coating facilities. For the purpose of regulating HAPs, a "major source" is considered to be a stationary source or group of stationary sources located within a contiguous area and under common control that emits or has the potential to emit considering controls, in the aggregate, 10 tons per year (tpy) or more of any single listed HAP or 25 tpy or more of any combination of HAPs. See section 112(a)(1) of the CAA (42 U.S.C.A. § 7412(a)(1)). See 69 FR 130, 131 and 69 FR 20968, 20969. Most of the Federal recommendations for control of VOC emissions included in the 2008 MMPP CTG are based on the HAP content

and emission rate limits for surface coating of miscellaneous metal parts and products and surface coating of plastic parts and products and other requirements in the 2004 NESHAPs for these categories.

For pleasure craft surface coatings, the EPA took into account California regulations when developing the 2008 MMPP CTG. California was the only state at that time with regulations governing VOC emissions from pleasure craft surface coatings. After the EPA finalized the 2008 MMPP CTG, the pleasure craft coatings industry asserted to the EPA that three of the VOC emission limits in the CTG were too low considering the performance requirements of the pleasure craft coatings and that the VOC emission limits recommended did not represent RACT for the National pleasure craft coatings industry. The industry suggested several options for revision. The EPA did not take action on the concerns, but left it up to the states to address the concerns. On June 1, 2010, the EPA issued a memorandum entitled "Control Technique Guidelines for Miscellaneous Metal and Plastic Part Coatings—Industry Request for Reconsideration" in which the EPA stated that each state could determine what would be appropriate for the pleasure craft coatings industry in its jurisdiction.

State regulations to control VOC emissions from miscellaneous metal parts surface coating processes, miscellaneous plastic parts surface coating processes and pleasure craft surface coatings, as well as VOC emissions from the related cleaning activities, are required under Federal law. The Commonwealth's regulation will be approved by the EPA as a revision to the Commonwealth's SIP if the provisions meet the RACT requirements of the CAA and its implementing regulations. See 73 FR 58481, 58483. The EPA defines RACT as "the lowest emission limitation that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility." See "State Implementation Plans; General Preamble for Proposed Rulemaking on Approval of Plan Revisions for Nonattainment Areas—Supplement (on Control Techniques Guidelines)," 44 FR 53761 (September 17, 1979).

Section 110(a) of the CAA (42 U.S.C.A. § 7410(a)) provides that each state shall adopt and submit to the EPA a plan to implement measures (a SIP) to enforce the NAAQS or revision to the NAAQS promulgated under section 109(b) of the CAA. Section 172(c)(1) of the CAA provides that SIPs for nonattainment areas must include "reasonably available control measures," including RACT, for sources of emissions of VOC and NO<sub>x</sub>. Section 182(b)(2) of the CAA provides that for moderate ozone nonattainment areas, states must revise their SIPs to include RACT for sources of VOC emissions covered by a CTG document issued by the EPA prior to the area's date of attainment of the applicable ozone NAAQS. More importantly, section 184(b)(1)(B) of the CAA requires that states in the Ozone Transport Region (OTR), including the Commonwealth, submit a SIP revision requiring implementation of RACT for all sources of VOC emissions in the state covered by a specific CTG and not just for those sources that are located in designated nonattainment areas of the state.

Section 183(e) of the CAA (42 U.S.C.A. § 7511b(e)) directs the EPA to list for regulation those categories of products that account for at least 80% of the aggregate VOC emissions from consumer and commercial products in ozone nonattainment areas. Section 183(e)(3)(C) of the CAA further provides that the EPA may issue a CTG document in place of a National regulation for a product

category on the section 183(e) list when the EPA determines that the CTG will be “substantially as effective as [National] regulations” in reducing emissions of VOC in ozone nonattainment areas. In 1995, the EPA listed miscellaneous metal products coatings and plastic parts coatings on its section 183(e) list and, in 2008, issued a CTG for these product categories. See 60 FR 15264, 15267 (March 23, 1995) and 73 FR 58481. See *Control Techniques Guidelines for Miscellaneous Metal and Plastic Parts Coatings*, EPA-453/R-08-003, Office of Air Quality Planning and Standards, EPA, September 2008. The 2008 MMPP CTG document is available on the EPA’s web site at <https://www.epa.gov/stationary-sources-air-pollution/clean-air-act-guidelines-and-standards-solvent-use-and-surface>.

In the 2008 notice of final determination and availability of final CTGs, the EPA determined that the RACT recommendations of the 2008 MMPP CTG would be substantially as effective as National regulations in reducing VOC emissions from the miscellaneous metal products coatings and plastic parts coatings product categories, as well as pleasure craft surface coatings, in ozone nonattainment areas. See 73 FR 58481. The 2008 MMPP CTG provides states with the EPA’s recommendation of what constitutes RACT for the covered categories. States may use the Federal recommendations provided in the CTG to inform their own determination as to what constitutes RACT for VOC emissions from the covered categories. State air pollution control agencies may implement other technically-sound approaches that are consistent with the CAA requirements and the EPA’s implementing regulations or guidelines.

The Department reviewed the RACT recommendations included in the 2008 MMPP CTG for their applicability to the ground-level ozone reduction measures necessary for this Commonwealth. The Bureau of Air Quality determined that VOC emission reduction measures consistent with the recommendations provided in the 2008 MMPP CTG are appropriate to be implemented in this Commonwealth as RACT for these categories. The Bureau of Air Quality determined that three VOC content limits applicable to the pleasure craft coatings industry should be revised from the limits in the CTG to represent RACT for that industry, based on the June 1, 2010, memorandum from the EPA entitled “Control Technique Guidelines for Miscellaneous Metal and Plastic Part Coatings-Industry Request for Reconsideration.” The EPA wrote the memorandum in response to input from the pleasure craft coatings industry following the EPA’s publication of the CTG.

This final-form rulemaking applies to the owner and operator of a facility that manufactures miscellaneous metal parts or products or miscellaneous plastic parts or products, including automotive and transportation plastic parts, business machine plastic parts, pleasure craft (recreational boats), or bodies or body parts for new heavier vehicles, on which subject surface coatings are applied by the owner and operator, as well as to the owner and operator of a facility that applies subject surface coatings to affected parts and products on a contractual basis. This final-form rulemaking also applies to the owner and operator of a separate coating line at an automobile and light-duty truck assembly coating facility on which subject surface coatings are applied to other parts intended for use in new automobiles or new light-duty trucks or to aftermarket repair or replacement parts for automobiles or light-duty trucks.

The Board is aware of 160 manufacturing facilities in this Commonwealth whose owners and operators may be subject to the final-form VOC emission reduction mea-

asures. The owners and operators of as many as 139 of these facilities may emit 2.7 tons or more of actual VOC emissions per 12-month rolling period threshold, including VOC emissions from related cleaning activities, before consideration of controls, and will likely be required to implement the final-form VOC emission control measures, work practice standards and recordkeeping requirements. The owners and operators of the remaining 21 affected facilities with actual VOC emissions below the 2.7 tons per 12-month rolling period threshold, including VOC emissions from related cleaning activities, before consideration of controls, are subject only to the recordkeeping requirements and, if requested by the Department, reporting requirements of this final-form rulemaking. It is possible that the owners and operators of additional facilities that have not been identified could be subject to the final-form rulemaking control measures.

Implementation of the recommended control measures could generate reductions of as much as 1,586 tons of VOC emissions per 12-month rolling period from the 139 facilities. The estimated total maximum annual costs to the affected regulated industry could be up to \$2.8 million. The range of cost per regulated facility for implementing the final-form VOC emission control measures is estimated to be \$10,500 to \$20,000 annually per facility. The range of cost effectiveness to the regulated industry would be approximately \$920 per ton of VOC emissions reduced to \$1,758 per ton of VOC emissions reduced on an annual basis.

The ground-level ozone reduction measures included in this final-form rulemaking may achieve VOC emission reductions locally and may also reduce the transport of VOC emissions and ground-level ozone to downwind states, if implemented for sources of VOC emissions from surface coating processes subject to this final-form rulemaking, as well as for the VOC emissions from related cleaning activities. Adoption of VOC emission control requirements for these sources is part of the Commonwealth’s strategy, in concert with other OTR jurisdictions, to further reduce transport of VOC ozone precursors and ground-level ozone throughout the OTR to attain and maintain the 8-hour ground-level ozone NAAQS.

This final-form rulemaking is required under the CAA and, consistent with section 4.2(a) of the act (35 P.S. § 4004.2(a)), is reasonably required to achieve and maintain the health-based and welfare-based 8-hour ground-level ozone NAAQS and to satisfy related CAA requirements in this Commonwealth. Once published in the *Pennsylvania Bulletin*, this final-form rulemaking will be submitted to the EPA as a revision to the Commonwealth’s SIP.

On February 11, 2016, the Air Quality Technical Advisory Committee (AQTAC) was briefed on this final-form rulemaking and the comments received on the proposed rulemaking, and they had no concerns. The AQTAC voted unanimously to concur with the Department’s recommendation to move this final-form rulemaking forward to the Board for consideration. This final-form rulemaking was discussed with the Citizens Advisory Council’s (CAC) Policy and Regulatory Oversight Committee on March 2, 2016. On the recommendation of the CAC’s Policy and Regulatory Oversight Committee, on March 15, 2016, the CAC concurred with the Department’s recommendation to forward this final-form rulemaking to the Board. The Small Business Compliance Advisory Committee (SBCAC) was briefed on this final-form rulemaking on April 27, 2016. The SBCAC voted unanimously to concur with the Department’s recommendation to move this final-form rulemaking forward to the Board for consideration.

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

§ 129.51. *General*

The final-form rulemaking amends § 129.51(a) (relating to general) to extend coverage to the owner and operator of a miscellaneous metal part surface coating process or miscellaneous plastic part surface coating process covered by this final-form rulemaking. Section 129.51(a) provides an alternative method for the owner and operator of an affected facility to achieve compliance with air emission limits. There are no changes to § 129.51 from proposed to final-form rulemaking.

§ 129.52. *Surface coating processes*

The final-form rulemaking amends § 129.52(g) (relating to surface coating processes) to clarify that the required records shall be maintained onsite for 2 years, unless a longer period is required by an order, plan approval or operating permit issued under Chapter 127 (relating to construction, modification, reactivation and operation of sources). The records shall be submitted to the Department in an acceptable format on a schedule reasonably prescribed by the Department. There are no changes to § 129.52(g) from proposed to final-form rulemaking. The Board received comments from the Independent Regulatory Review Commission (IRRC) recommending that clarity be provided in regard to what constitutes submitting records to the Department “in an acceptable format” and “on a schedule reasonably prescribed.” However, the Board did not make these changes because the conditions of applicable permits include recordkeeping and reporting requirements, including the format and schedule for submittal to the Department. Similarly, the Department specifies the format and schedule in its request for records from those owners and operators of subject sources that do not have permits, tailoring the request to the individual source. Keeping the regulatory language provides flexibility for these conditions to be made specific to different sources by inclusion in the applicable permit.

Subsection (k) was not in the proposed rulemaking. This subsection is added in response to comments received during the public comment period. This amendment to the final-form rulemaking establishes that § 129.52d(a)(5)(i) applies to surface coating processes regulated under Table I, Category 10, miscellaneous metal parts and products. Aerosol coatings shall meet the requirements of 40 CFR Part 59, Subpart E (relating to National volatile organic compound emission standards for aerosol coatings). Subsection (k) is added to provide clarity on the applicability of the requirements of § 129.52, Table I, Category 10, miscellaneous metal parts and products, to the use of aerosol coatings including hand-held aerosol cans.

§ 129.52d. *Control of VOC emissions from miscellaneous metal parts surface coating processes, miscellaneous plastic parts surface coating processes and pleasure craft surface coatings*

The final-form rulemaking adds § 129.52d to regulate VOC emissions from miscellaneous metal parts surface coating processes, miscellaneous plastic parts surface coating processes and pleasure craft surface coatings. As explained in subsection (c), § 129.52d supersedes the requirements of a RACT permit already issued under §§ 129.91–129.95 (relating to stationary sources of NO<sub>x</sub> and VOCs) to the owner or operator to control, reduce or minimize VOC emissions from a process or coating subject to § 129.52d(a), except to the extent the RACT permit contains more stringent requirements.

The applicability of § 129.52d is described in subsection (a). Under subsection (a)(1), this final-form rulemaking applies to the owner and operator of a miscellaneous metal part surface coating process or miscellaneous plastic part surface coating process, or both, if the total actual VOC emissions from all miscellaneous metal part coating units and miscellaneous plastic part coating units, including related cleaning activities, at the facility are equal to or greater than 2.7 tons per 12-month rolling period, before consideration of controls. As with all RACT regulations, an affected owner or operator remains subject to the applicable requirements even if the throughput or VOC emissions fall below the applicability threshold of subsection (a)(1).

Subsection (a)(2) establishes that this final-form rulemaking applies, as specified, to the owner and operator of a miscellaneous metal part surface coating process or miscellaneous plastic part surface coating process, or both, if the total actual VOC emissions from all miscellaneous metal part coating units and miscellaneous plastic part coating units, including related cleaning activities, at the facility are below 2.7 tons per 12-month rolling period, before consideration of controls. The only requirements that apply to an owner or operator subject to subsection (a)(2) are recordkeeping requirements and, if requested by the Department, reporting requirements.

Subsection (a)(3) specifies that compliance with the VOC emission limits and other requirements of this section assures compliance with the VOC emission limits and other requirements of § 129.52 (relating to surface coating processes) for the miscellaneous metal parts and products surface coating processes as specified in § 129.52, Table I, Category 10.

Subsection (a)(4) specifies that if an owner or operator elects to comply with § 129.52e (relating to control of VOC emissions from automobile and light-duty truck assembly coating operations and heavier vehicle coating operations) under subsection (a)(2) or (3), then § 129.52e instead of this section applies to the separate coating line at the facility, or to the coating of a body or body part for a new heavier vehicle at the facility, or both, for which the election is made. This effectuates the recommendations in the EPA's *Control Techniques Guidelines for Automobile and Light-Duty Truck Assembly Coatings*, EPA-453/R-08-006, Office of Air Quality Planning and Standards, EPA, September 2008, that a state consider giving an owner or operator of a separate coating line at an automobile and light-duty truck assembly coating facility the option of complying with the state's regulation adopted under the 2008 Automobile and Light-Duty Truck Assembly Coatings CTG (2008 ALDT CTG) instead of the 2008 MMPP CTG, and that a state give an owner or operator of a facility that coats bodies or body parts for new heavier vehicles the option to comply with the state's regulation adopted under the 2008 MMPP CTG or the 2008 ALDT CTG. See 2008 ALDT CTG, page 4, and 2008 MMPP CTG, page 4.

Subsection (a)(5) specifies that this final-form rulemaking does not apply to an affected owner or operator in the use or application of coatings under certain circumstances. Proposed subsection (a)(5)(i) simply specified aerosol coatings. Subsection (a)(5)(i) is amended to clarify that this section does not apply to an owner or operator in the use or application of aerosol coatings that meet the requirements of 40 CFR Part 59, Subpart E. This amendment is added in response to comments received during the public comment period to provide clarity on the applicability of the requirements of § 129.52d to the use of aerosol coatings including hand-held aerosol cans.

Subsection (b) establishes 72 definitions to support this section.

Subsection (c) establishes that the requirements of this section supersede the requirements of a RACT permit issued under §§ 129.91—129.95 to the owner or operator of a source subject to subsection (a) prior to January 1, 2017, except to the extent the RACT permit contains more stringent requirements. The proposed compliance date was January 1, 2016. However, this final-form rulemaking was not finalized by January 1, 2016. The Board revised the compliance date in this final-form rulemaking to January 1, 2017. January 1, 2017, is the mandated deadline required under the EPA's final rule pertaining to the Implementation of the 2008 National Ambient Air Quality Standards for Ozone: State Implementation Plan Requirements. See 80 FR 12264, 12279 (March 6, 2015). The EPA stated that the RACT measures for the 2008 ozone NAAQS must be implemented "as expeditiously as practicable, but no later than January 1 of the 5th year after the effective date of a nonattainment designation." The nonattainment designations across the United States were effective for the 2008 ozone NAAQS on July 20, 2012. See 77 FR 30088, 30143. Consequently, RACT measures for the 2008 8-hour ozone standard must be implemented by January 1, 2017.

Subsection (d) establishes emission limitations beginning January 1, 2017, for a person subject to subsection (a)(1). Three options for meeting the emission limitations are included: in subsection (d)(1), use of compliant materials, as applied, excluding water and exempt compounds, that meet the VOC content limit for the applicable coating category specified in the applicable table of VOC content limits in Tables I—V; in subsection (d)(2), a combination of one or more VOC-containing coatings, as applied, that meet the emission rate limits for the applicable coating category specified in the applicable table of emission rate limits in Tables VI—IX, and one or more VOC emissions capture systems and one or more add-on air pollution control devices that meet the requirements of subsection (e)(2); or in subsection (d)(3), use of a VOC emissions capture system and add-on air pollution control device that is acceptable under § 129.51(a) and meets the requirements of subsection (e)(2). Under the third option, the overall control efficiency of a control system, as determined by the test methods and procedures specified in Chapter 139 (relating to sampling and testing), may be no less than 90%.

Subsection (d)(4) establishes that if more than one VOC content limit or VOC emission rate limit applies to a specific coating, then the least restrictive VOC content limit or VOC emission rate limit applies.

Subsection (d)(5) establishes that for a miscellaneous metal part or miscellaneous plastic part coating that does not meet the coating categories listed in Table I, II, VI or VII, the VOC content limit or VOC emission rate limit shall be determined by classifying the coating as a general one component coating or general multi-component coating. The corresponding general one component coating or general multicomponent coating limit applies.

Subsection (d)(6) establishes that for a pleasure craft coating that does not meet the coating categories listed in Table IV or IX, the VOC content limit or VOC emission rate limit shall be determined by classifying the coating as an "all other pleasure craft surface coatings for metal or plastic." The "all other pleasure craft surface coatings for metal or plastic" limit applies.

Subsection (e) establishes compliance and monitoring requirements.

Subsection (f) establishes recordkeeping and reporting requirements.

Subsection (g) establishes that a person subject to subsection (a)(1) may not cause or permit the emission into the outdoor atmosphere of VOCs from a miscellaneous metal part coating unit or miscellaneous plastic part coating unit, or both, unless the coatings are applied using one or more specified high-transfer-efficient coating application methods.

Subsection (h) specifies exempt coatings and exempt coating unit operations.

Subsection (i) specifies the work practice requirements for coating-related activities.

Subsection (j) specifies the work practice requirements for cleaning materials.

Subsection (k) establishes the requirements for measurements and calculations.

Section 129.52d contains nine tables. Tables I and II set forth surface coating VOC content limits for the overarching surface coating categories of metal parts and products and plastic parts and products, respectively. Tables III—V set forth surface coating VOC content limits for the miscellaneous metal and plastic parts surface coating categories of automotive/transportation and business machine plastic parts, pleasure craft (recreational boats) and motor vehicle materials. The limits set forth in Tables I—V are applicable for complying with emission limitations in subsection (d)(1), namely the use of compliant materials. Tables VI—IX set forth surface coating VOC emission rate limits for the same surface coating categories as Tables I—V, though there is not a table of VOC emission rate limits specific to motor vehicle materials coatings. The limits set forth in Tables VI—IX are applicable for complying with emission limitations in subsection (d)(2) or (3). Subsection (d)(2) provides for the use of a combination of complying coating materials, a VOC emissions capture system and an add-on air pollution control device. Subsection (d)(3) provides for the use of a VOC emissions capture system and an add-on air pollution control device.

Three VOC content limits in Table IV differ from the 2008 MMPP CTG and reflect the input the EPA received from the pleasure craft coatings industry regarding technological infeasibility following the EPA's publication of the final CTG. On September 14, 2009, the EPA was contacted by the pleasure craft coatings industry to reconsider some of the VOC emission limits recommended in the final 2008 MMPP CTG. The pleasure craft coatings industry asserted that three of the VOC emission limits in the 2008 MMPP CTG were too low considering the performance requirements of the pleasure craft coatings and that the VOC emission limits recommended did not represent RACT for the National pleasure craft coatings industry. The industry suggested several options for revision. The EPA did not take action on the concerns, but left it up to the states to address the concerns. On June 1, 2010, the EPA issued a memorandum entitled "Control Technique Guidelines for Miscellaneous Metal and Plastic Part Coatings—Industry Request for Reconsideration," in which the EPA stated that each state could determine what would be appropriate for the pleasure craft coatings industry in its jurisdiction. The three VOC content limits are for Antifoulant Sealer/Tiecoat (not in CTG), Extreme High-gloss Topcoat (more stringent in CTG) and Other Substrate Antifoulant Coating (more stringent in CTG).

The Board expects that these revised VOC content limits for the pleasure craft surface coatings will have a de minimis impact on the amount of VOC emission reductions achieved from the implementation of the final-form rulemaking.

No changes were made to subsections (b) and (e)—(k) or to Tables I—IX from proposed to final-form rulemaking.

§ 129.67. *Graphic arts systems*

Subsection (a)(1) is amended to extend its applicability to the owner and operator of a facility whose rotogravure and flexographic printing presses by themselves or in combination with a surface coating operation subject to § 129.52d have the potential to emit or have emitted VOCs into the outdoor atmosphere in quantities greater than 1,000 pounds (460 kilograms) per day or 100 tons (90,900 kilograms) per year during any calendar year since January 1, 1987. There are no changes to § 129.67 (relating to graphic arts systems) from proposed to final-form rulemaking.

§ 129.75. *Mobile equipment repair and refinishing*

Subsection (b)(1) is amended to specify that § 129.75 (relating to mobile equipment repair and refinishing) does not apply to a person who applies surface coating to mobile equipment or mobile equipment components if the surface coating process is subject to the miscellaneous metal parts finishing requirements of § 129.52 or the requirements of § 129.52d. There are no changes to § 129.75 from proposed to final-form rulemaking.

F. *Summary of Major Comments and Responses*

The Board approved publication of the proposed rulemaking at its meeting of October 21, 2014. The proposed rulemaking was published at 45 Pa.B. 4366 (August 8, 2015). Three public hearings were held on September 8, 9 and 10, 2015, in Norristown, Harrisburg and Pittsburgh, respectively. The public comment period closed on October 13, 2015, for a 67-day public comment period. Comments were received from one commentator. In addition, IRRC provided comments on the proposed rulemaking. The comments received on the proposed rulemaking are summarized in this section and are more extensively addressed in a comment and response document, which is available from the Department.

*General support of proposed rulemaking*

The commentator supported the Department in proposing § 129.52d to require RACT requirements and RACT emissions limitations for stationary sources of VOC emissions from metal parts surface coating operations. The Board thanks the commentator for the support.

*Consistency with the EPA 2008 CTGs*

The commentator noted that the proposed RACT requirements and RACT emissions limitations are consistent with the EPA's 2008 *Control Techniques Guidelines for Miscellaneous Metal and Plastic Parts Coatings*, EPA-453/R-08-003. The Board agrees.

*Compliance date*

The commentator noted that the proposed rulemaking established a compliance date of January 1, 2016, and responded to the Board's request for comments regarding a compliance date of May 1, 2016, or later. The commentator recommended that the compliance date be revised to be no sooner than May 1, 2016, to allow time for manufacturers to switch to complying coatings, order and install new application technology, and train employees to properly apply the new coatings and use the new equipment. Time will also be needed for manufacturers to

evaluate coating substitutions to ensure that the coating will meet customer and quality requirements. In response, the Board revised this final-form rulemaking to require compliance by January 1, 2017. The January 1, 2017, compliance date will allow sufficient time for compliance, and is the mandated deadline for implementation of RACT measures under the EPA final rule for Implementation of the 2008 National Ambient Air Quality Standards for Ozone: State Implementation Plan Requirements. See 80 FR 12264, 12279.

IRRC recommended that the Board establish a compliance date that allows for the proper development of a final-form regulation and full compliance by the regulated community. The Board agrees and revised this final-form rulemaking to require compliance by January 1, 2017.

*Option to comply with proposed automobile and light-duty truck assembly coating operations and heavier vehicle coating operations requirements*

IRRC noted that certain owners and operators of a miscellaneous metal part surface coating process or a miscellaneous plastic part surface coating process have the option to be regulated under this final-form rulemaking or under § 129.52e for the control of VOC emissions from automobile and light-duty truck assembly coating operations and heavier vehicle coating operations. IRRC requested that the Board ensure that this final-form rulemaking and the final-form rulemaking for automobile and light-duty truck assembly coating operations and heavier vehicle coating operations are adopted on the same date. The Board agrees and notes that it considered the two final-form rulemakings concurrently.

*Exemption for aerosol coatings and hand-held aerosol cans*

The commentator noted that proposed § 129.52d(a)(5)(i) provided an exemption from the requirements of § 129.52d for aerosol coatings. The commentator supported the exemption for aerosol coatings, but sought clarification that aerosol coatings, specifically hand-held aerosol cans, are also exempt from § 129.52. The commentator recommended that the Board revise § 129.52 to include a specific exemption for aerosol coatings or include a provision similar to § 129.52(i) stating that the requirements and limits for miscellaneous metal parts coatings in § 129.52 are superseded by § 129.52d. Additionally, the commentator recommended that the Board include a provision in § 129.52d similar to § 129.52a(a)(2) (relating to control of VOC emissions from large appliance and metal furniture surface coating processes) that clearly states that § 129.52d supersedes the emissions limits and other requirements of § 129.52.

The Board thanks the commentator for the support of the exemption for aerosol coatings in proposed § 129.52d(a)(5)(i). This exemption is consistent with the recommendations of the EPA in the 2008 MMPP CTG, which stated on page 30 that the EPA recommends that aerosol coatings be excluded from the VOC limitations and application methods addressed by the CTG and noted that aerosol coatings are a separate category under section 183(e) of the CAA. Accordingly, § 129.52d(a)(5)(i) is amended in this final-form rulemaking to clarify that aerosol coatings are exempt from § 129.52d when the aerosol coatings meet the requirements of 40 CFR Part 59, Subpart E.

Further, § 129.52 is amended in this final-form rulemaking by adding subsection (k) to provide clarity on the applicability of the requirements of § 129.52, Table I,

Category 10, miscellaneous metal parts and products, to the use of aerosol coatings including hand-held aerosol cans.

The Board considered the commentator's suggestion to add superseding language to § 129.52d. The Board did not add a provision to supersede the emission limits and other requirements of § 129.52 for miscellaneous metal parts and products with the requirements of § 129.52d due to the differences between the two regulations with respect to the applicability threshold. In making this decision, the Board was mindful of section 110(l) of the CAA, which specifies, in part, that the Administrator of the EPA shall not approve a revision of a plan (State Implementation Plan) if the revision would interfere with any applicable requirement concerning attainment and reasonable further progress. This provision of the CAA is an "anti-backsliding" provision. The Department intends to submit this final-form rulemaking to the EPA as a revision to the SIP upon final-form publication in the *Pennsylvania Bulletin*.

IRRC commented that § 129.52d(a)(5)(i) provides an exemption for the use or application of aerosol coatings and that a commentator asked for clarification on whether hand-held aerosol cans would be included in this exemption. IRRC requested that the Board explain in the preamble of the final-form rulemaking whether hand-held aerosol cans are exempt, and, if they are, to clarify that in this section. The Board agrees that the exemption for aerosol coatings set forth in § 129.52d(a)(5)(i) includes hand-held aerosol cans. The definition for aerosol coatings in § 121.1 (relating to definitions) states that an aerosol coating is "[a] coating expelled from a hand-held pressurized, nonrefillable container in a finely divided spray when a valve on the container is depressed." Therefore, the exemption for aerosol coatings in § 129.52d(a)(5)(i) includes hand-held aerosol cans.

IRRC commented that the commentator suggested that the final-form rulemaking be amended to state that § 129.52d supersedes the emissions limits and other requirements of § 129.52. IRRC noted that other sections of Chapter 129 include language that supersedes § 129.52. If language superseding § 129.52 is appropriate for the final-form rulemaking, while at the same time consistent with Federal requirements on which the rulemaking is based, IRRC suggested that it be included in the final-form rulemaking. After careful review, the Board did not add a provision to supersede the emission limits and other requirements of § 129.52 for miscellaneous metal parts and products with the requirements of § 129.52d due to the differences in the applicability thresholds for the two regulations. As previously mentioned, the anti-backsliding provision of section 110(l) of the CAA specifies, in part, that the Administrator of the EPA shall not approve a revision of a plan (State Implementation Plan) if the revision would interfere with any applicable requirement concerning attainment and reasonable further progress.

§ 129.52. *Surface coating processes—reasonableness; clarity*

IRRC noted that § 129.52(g) is being amended to require *onsite* (emphasis added) storage of records. IRRC asked what the reason is for this change and for the Board to explain the rationale for this requirement in the preamble of the final-form rulemaking. The Board added "onsite" to § 129.52(g) to clarify that records should be maintained at the site for 2 years, unless a longer period is required by an order, plan approval or operating permit, and should be available to a Department inspec-

tor during a site visit. In addition, adding "onsite" to § 129.52(g) establishes consistency with § 129.51(d), as revised in the final-form rulemaking for flexible packaging printing presses, offset lithographic printing presses, letterpress printing presses, and adhesives, sealants, primers and solvents published at 44 Pa.B. 3929 (June 28, 2014).

IRRC expressed a concern regarding the clarity of the last sentence of § 129.52(g). The proposed sentence stated "[t]he records shall be submitted to the Department in an acceptable format on a schedule reasonably prescribed by the Department." IRRC stated that "in an acceptable format" is vague, and suggested that it be clarified to state what formats would be acceptable. The Board carefully considered the suggestion but did not revise the requirement. The conditions of applicable permits include recordkeeping and reporting requirements, including the format. The regulatory language "in an acceptable format" provides flexibility for these conditions to be made specific to individual sources by inclusion in the applicable permit. Similarly, the Department specifies the format in its request for records from those owners and operators of subject sources that do not have permits, tailoring the request to the individual source. Providing more prescriptive language in the regulation would limit the opportunities for the owner and operator of the source to have flexibility in recordkeeping and reporting.

IRRC expressed a second concern regarding the clarity of the last sentence of § 129.52(g). IRRC stated that "on a schedule reasonably prescribed" is vague. IRRC noted that this term is in the existing regulation. IRRC expressed the belief that the overall clarity of this section would be improved if a more definitive and binding time frame or schedule were included in the final-form rulemaking. The Board carefully considered the comment but did not revise the requirement. The conditions of applicable permits include recordkeeping and reporting requirements, as well as the schedule for the submittal of the records to the Department. The regulatory language "on a schedule reasonably prescribed" provides flexibility for these conditions to be made specific to individual sources by inclusion in the applicable permit. Similarly, the Department specifies the schedule in its request for records from those owners and operators of subject sources that do not have permits, tailoring the schedule to each individual source. Providing more prescriptive language in the regulation would limit the opportunities for the owner and operator of the source to have flexibility in recordkeeping and reporting.

Comments received on the proposed rulemaking and related issues have been addressed in this final-form rulemaking.

#### G. *Benefits, Costs and Compliance*

##### *Benefits*

The Statewide implementation of the VOC emission control measures in this final-form rulemaking will benefit the health and welfare of approximately 12.7 million residents and the numerous animals, crops, vegetation and natural areas of this Commonwealth by reducing emissions of VOCs, which are precursors to the formation of ground-level ozone air pollution. Exposure to high concentrations of ground-level ozone is a serious human and animal health threat, causing respiratory illnesses and decreased lung function as well as other adverse health effects, leading to a lower quality of life. Reduced ambient concentrations of ground-level ozone would reduce the incidences of hospital admissions for respiratory

ailments including asthma and improve the quality of life for citizens overall. While children, the elderly and those with respiratory problems are most at risk, even healthy individuals may experience increased respiratory ailments and other symptoms when they are exposed to high levels of ambient ground-level ozone while engaged in activities that involve physical exertion. High levels of ground-level ozone affect animals, including pets, livestock and wildlife, in ways similar to humans.

In addition to causing adverse human and animal health effects, the EPA has concluded that high levels of ground-level ozone affect vegetation and ecosystems leading to: reductions in agricultural crop and commercial forest yields by destroying chlorophyll; reduced growth and survivability of tree seedlings; and increased plant susceptibility to disease, pests and other environmental stresses, including harsh weather. In long-lived species, these effects may become evident only after several years or even decades and have the potential for long-term adverse impacts on forest ecosystems. Ozone damage to the foliage of trees and other plants can decrease the aesthetic value of ornamental species used in residential landscaping, as well as the natural beauty of parks and recreation areas.

The economic value of some welfare losses due to high concentrations of ground-level ozone can be calculated, such as crop yield loss from soybeans due to both decreased seed production and reduced size and quality of seeds and from visible injury to some leaf crops, including lettuce, spinach and tobacco, as well as visible injury to ornamental plants, including grass, flowers and shrubs. Other types of welfare loss may not be quantifiable, such as the reduced aesthetic value of trees growing in heavily visited parks. This Commonwealth's 59,000 farm families are the stewards of more than 7.7 million acres of farmland, with \$7.5 billion in cash receipts annually from production agriculture. In addition to production agriculture, the industry also raises revenue and supplies jobs through support services such as food processing, marketing, transportation and farm equipment. In total, production agriculture and agribusiness contributes nearly \$75 billion to the economy in this Commonwealth (source: Department of Agriculture).

The Department of Conservation and Natural Resources (DCNR) is the steward of State-owned forests and parks. DCNR awards millions of dollars in construction contracts each year to build and maintain the facilities in these parks and forests. Timber sales on State forest lands contribute to the \$5 billion-a-year timber industry. Hundreds of concessions throughout the park system help complete the park experience for both State and out-of-State visitors (source: DCNR). Further, this Commonwealth leads the Nation in growing volume of hardwood species, with 17 million acres in forest land. As the leading producer of hardwood lumber in the United States, the Commonwealth also leads in the export of hardwood lumber, exporting nearly \$800 million annually in lumber, logs, furniture products and paper products to more than 70 countries around the world. Recent United States Forest Service data show that the forest growth-to-harvest rate in this Commonwealth is better than 2 to 1. This vast renewable resource puts the hardwoods industry at the forefront of manufacturing in this Commonwealth. Through 2006, the total annual direct economic impact generated by the Commonwealth's wood industry was \$18.4 billion. The industry employed 128,000 people, with \$4.7 billion in wages and salaries earned. Production was 1.1 billion board feet of lumber annually (source: Strauss, Lord, Powell; Pennsylvania State University,

June 2007, cited in Pennsylvania Hardwoods Development Council Biennial Report, 2009-2010).

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

This final-form rulemaking is designed to adopt VOC emission standards and emission limitations consistent with the standards and recommendations in the EPA's 2008 MMPP CTG to meet the requirements of sections 172(c)(1), 182(b)(2) and 184(b)(1)(B) of the CAA. This final-form rulemaking applies these standards and limitations across this Commonwealth, as required under section 184(b)(1)(B) of the CAA. Consistent with section 4.2 of the act, the measures in this final-form rulemaking are reasonably required to achieve and maintain the health-based and welfare-based 8-hour ozone NAAQS in this Commonwealth.

The Statewide implementation of the VOC emission control measures in this final-form rulemaking may generate reductions of as much as 1,586 tons of VOC emissions per 12-month rolling period from the 139 potentially affected facilities identified by the Department in its databases, depending on the level of compliance already demonstrated by the owners and operators of these potentially affected facilities. These projected estimated reductions in VOC emissions and the subsequent reduced formation of ground-level ozone will help ensure that the owners and operators of businesses, citizens and the environment of this Commonwealth experience the benefits of improved health and welfare from lowered concentrations of ground-level ozone.

Commonwealth residents will also potentially benefit from improved groundwater quality through reduced quantities of VOCs and HAPs from low-VOC content and low-HAP content miscellaneous metal parts and miscellaneous plastic parts coatings and cleaning materials and pleasure craft surface coatings. Although this final-form rulemaking is designed primarily to address ozone air quality, the reformulation of high-VOC content coating materials to low-VOC content coating materials or the substitution of low-VOC content coating materials for high-VOC content coating materials to meet the VOC content limits applicable to users may also result in reduction of HAP emissions, which are also a serious health threat. The reduced levels of high-VOC content and high-HAP content solvents will benefit groundwater quality through reduced loading on water treatment plants and in reduced quantities of high-VOC content and high-HAP content solvents leaching into the ground and streams and rivers.

The Statewide implementation of the control measures in this final-form rulemaking will assist the Commonwealth in reducing VOC emissions locally and the resultant local formation of ground-level ozone in this Com-



monwealth from surface coating processes subject to this final-form rulemaking as well as assist in reducing the transport of VOC emissions and ground-level ozone to downwind states. Statewide implementation will also facilitate implementation and enforcement of this final-form rulemaking in this Commonwealth. The measures in this final-form rulemaking are reasonably necessary to attain and maintain the health-based and welfare-based 8-hour ground-level ozone NAAQS and to satisfy related CAA requirements in this Commonwealth.

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

#### *Compliance costs*

The Department reviewed its air quality databases and identified 160 manufacturing facilities in this Commonwealth whose owners and operators may be subject to this final-form rulemaking. According to the Department databases, the actual VOC emissions from these 160 facilities assumed to be subject to this final-form rulemaking totaled 4,552 tons in 2012. Of the 160 facilities reporting VOC emissions in 2012, the owners and operators of 139 of these facilities reported VOC emissions totaling 2.7 tons or more; their combined reported emissions totaled 4,531 tons in 2012. Accordingly, the owners and operators of these 139 facilities are assumed to emit 2.7 tons or more of actual VOC emissions per 12-month rolling period threshold, including VOC emissions from related cleaning activities, before consideration of controls, and will be required to implement the final-form VOC emission reduction measures, work practice standards and recordkeeping requirements. The records shall be submitted to the Department in an acceptable format upon receipt of a written request from the Department. The owners and operators of the remaining 21 manufacturing facilities each reported VOC emissions below 2.7 tons; their combined reported emissions totaled 21 tons in 2012. The owners and operators of these 21 facilities are subject only to the recordkeeping requirements and, if requested by the Department, reporting requirements of this final-form rulemaking.

The Board anticipates that implementation of this final-form rulemaking will have minimal financial impact on the owners and operators of affected facilities. The Board expects that the owners and operators of facilities subject to the applicability threshold of 2.7 tons per 12-month rolling period, including VOC emissions from related cleaning activities, before consideration of controls, will use the reformulation of high-VOC content coating materials to low-VOC content coating materials option because it is more cost effective than installation and operation of VOC emission capture systems and add-on air pollution control devices. The owner and operator of a subject facility that already complies with the requirements of the 2004 NESHAPs or other applicable Best Available Technology permitting requirements through the use of VOC emission capture systems and add-on air pollution control devices may already comply with the requirements of this final-form rulemaking and, if so, may have no additional annual costs.

The EPA based its cost effectiveness information in the 2008 MMPP CTG on the analysis it performed for the 2004 NESHAPs. The EPA assumed that the owners and operators of facilities subject to the 2008 MMPP CTG applicability threshold of 2.7 tons per 12-month rolling period would use the reformulation of high-VOC content coating materials to low-VOC content coating materials control option because reformulation of coatings is more cost effective than the installation and operation of VOC emission capture systems and add-on air pollution control devices. The EPA used the costs in the 2004 NESHAPs for reformulation of high-HAP content coating materials to low-HAP content coating materials as the basis for estimating the costs that will be incurred to implement the CTG recommendations, because these costs are thought to be similar to the costs of reformulating high-VOC content coating materials to low-VOC content coating materials. The EPA estimated the cost averaged across all sizes of facilities subject to the 2004 NESHAPs to be \$10,500 per facility, based on the reformulation of high-HAP content coating materials to low-HAP content coating materials and use of low-HAP content coating materials. The EPA applied the NESHAP-derived cost of \$10,500 per facility to the number of facilities it identified Nationwide as subject to the CTG to calculate a cost effectiveness for implementation of the VOC emission control measures. The EPA estimated a cost effectiveness of \$1,758 per ton of VOC emissions reduced.

The EPA stated in the 2008 MMPP CTG that it estimates that implementing the recommended control measures will reduce the emissions of VOC from those facilities that emit above the threshold of 15 pounds per day (or equivalent 2.7 tons per 12-month rolling period) by 35%. See 2008 MMPP CTG, page 32. Therefore, the Board estimates that implementation of the recommended control measures may generate reductions of as much as 1,586 tons (4,531 tons  $\times$  35%) of VOC emissions per 12-month rolling period from the 139 facilities identified by the Department in its databases as emitting at or above the 2.7 tons per 12-month rolling period threshold, including VOC emissions from related cleaning activities, before consideration of controls and, therefore, are required to implement the final-form VOC emission reduction control measures. Using the EPA's cost effectiveness of \$1,758/ton of VOC emissions reduced, the Board estimates that the total maximum annual costs to the affected regulated industry in this Commonwealth could be up to \$2.8 million (\$1,758/ton of VOC emissions reduced  $\times$  1,586 tons of VOC emissions reduced). The approximate annual cost per facility could be as high as \$20,000 (\$2.8 million/139 facilities). This estimated cost of \$20,000 per facility is higher than the EPA's estimate of \$10,500 per facility. This difference in cost may be due in part to the Commonwealth-specific emission data used in the calculation.

The Board also calculated the cost effectiveness for the owners and operators of the 139 potentially affected facilities in this Commonwealth using the EPA's cost of \$10,500 per facility. The estimated total maximum anticipated annual costs to the affected regulated industry could be up to \$1.46 million (\$10,500  $\times$  139 facilities). Therefore, the cost effectiveness for the reductions of 1,586 tons of VOC emissions would be approximately \$920 per ton of VOC emissions reduced (\$1.46 million/1,586 tons of VOC emissions reduced) on an annual basis, which is lower than the EPA estimate of \$1,758 per ton of VOC emissions reduced on an annual basis. Again, this difference may be due in part to the Commonwealth-specific emission data used in the calculation. The Board

therefore estimates that the range of cost effectiveness to the regulated industry for implementing this final-form rulemaking is \$920 per ton of VOC emissions reduced to \$1,758 per ton of VOC emissions reduced on an annual basis. The range of cost per regulated facility for implementing the final-form VOC emission control measures is estimated to be \$10,500 to \$20,000 per year per facility. The Board expects that the annual costs to the regulated industry in this Commonwealth will be at the lower end of these ranges because low-VOC content coating materials are readily available at a cost that is not significantly greater than the high-VOC content coating materials they replace as a result of the development of NESHAP-compliant low-HAP content coating materials, since lower HAP content usually means lower VOC content. Therefore, the research and development of low-VOC content coating materials should already be complete and these expenses will not be a factor in the cost of complying with the VOC emission control measures of this final-form rulemaking.

The compliance cost per facility may be even lower given that this final-form rulemaking provides as one compliance option the use of individual compliant coating materials in subsection (d)(1) and the high-transfer-efficient coating application methods specified in subsection (g). Coatings that are compliant with the HAP content limits of the 2004 NESHAPs and with the final-form rulemaking VOC content limits are readily available to the owners and operators of all sizes of subject facilities. This final-form rulemaking provides flexibility in compliance through the second option of using a combination of VOC content limit compliant coating materials with a VOC emissions capture system and add-on air pollution control device in subsection (d)(2) with the high-transfer-efficient coating application methods specified in subsection (g). The third compliance option, the use of a VOC emissions capture system and add-on air pollution control device with an overall control efficiency of at least 90%, instead of the use of complying coating materials and the specified high-transfer-efficient coating application methods in subsection (g), is provided in subsection (d)(3). However, because of the wide availability and lower cost (compared to installation and operation of a VOC emission capture system and add-on air pollution control device) of compliant VOC content coating materials and high-transfer-efficient coating application methods, compliant coating materials and the specified high-transfer-efficient coating application methods are generally expected to be used by affected owners and operators to reduce VOC emissions from miscellaneous metal parts surface coating processes and miscellaneous plastic parts surface coating processes.

The implementation of the work practices for the use and application of cleaning materials is expected to result in a net cost savings for affected owners and operators for cleaning materials and cleaning activities. The recommended work practices for cleaning activities should reduce the amounts of cleaning materials used by reducing the amounts that are lost to evaporation, spillage and waste.

Emission limitations established by this final-form rulemaking will not require the submission of applications for amendments to existing operating permits. These requirements will be incorporated as applicable requirements at the time of permit renewal, if less than 3 years remain in the permit term, as specified under § 127.463(c) (relating to operating permit revisions to incorporate applicable standards). If 3 years or more remain in the permit term, the requirements will be incorporated as applicable re-

quirements in the permit within 18 months of the promulgation of this final-form rulemaking, as required under § 127.463(b). Most importantly, § 127.463(e) specifies that “[r]egardless of whether a revision is required under this section, the permittee shall meet the applicable standards or regulations promulgated under the Clean Air Act within the time frame required by standards or regulations. . . .” Consequently, upon promulgation as a final-form rulemaking, the requirements will apply to affected owners and operators irrespective of a modification to the operating permit.

New legal, accounting or consulting procedures are not required.

#### *Compliance assistance plan*

The Department plans to educate and assist the public and regulated community in understanding the requirements in this final-form rulemaking and how to comply with them. This will be accomplished through the Department’s ongoing compliance assistance program. The Department will also work with the Pennsylvania Small Business Assistance Program to aid the owners and operators of facilities less able to handle permitting matters with in-house staff.

#### *Paperwork requirements*

The recordkeeping and reporting requirements for owners and operators of affected facilities at, above or below the threshold for control measures are minimal because the records required under this final-form rulemaking are in line with what the industry currently tracks for inventory purposes or is required in current permits. The owner or operator of a facility subject to this final-form rulemaking is required to maintain records sufficient to demonstrate compliance with the applicable requirements. Records maintained for compliance demonstrations may include purchase, use, production and other records. The records shall be maintained onsite for 2 years, unless a longer period is required by an order, plan approval or operating permit issued under Chapter 127 and submitted to the Department in an acceptable format upon receipt of a written request from the Department.

#### *H. Pollution Prevention*

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

Statewide implementation of the VOC emission control measures in this final-form rulemaking may generate reductions of as much as 1,586 tons of VOC emissions per 12-month rolling period from the 139 potentially subject facilities identified by the Department in its databases, depending on the level of compliance already demonstrated by the owners and operators of these facilities. These projected estimated reductions in VOC emissions and the subsequent reduced formation of ground-level ozone will help ensure that the owners and operators of businesses, citizens and the environment of this Commonwealth experience the benefits of improved ground-level ozone air quality.

Commonwealth residents will also potentially benefit from improved groundwater quality through reduced quantities of VOCs and HAPs from the use of low-VOC content and low-HAP content miscellaneous metal parts and miscellaneous plastic parts coatings and cleaning materials and pleasure craft surface coatings. Although this final-form rulemaking is designed primarily to address ozone air quality, the reformulation of high-VOC content coating materials to low-VOC content coating materials or the substitution of low-VOC content coating materials for high-VOC content coating materials to meet the VOC content limits applicable to users may also result in reduction of HAP emissions, which are also a serious health threat. The reduced levels of high-VOC content and high-HAP content solvents will benefit groundwater quality through reduced loading on water treatment plants and in reduced quantities of high-VOC content and high-HAP content solvents leaching into the ground, streams and rivers.

This final-form rulemaking provides as one compliance option the use of individual compliant coating materials in subsection (d)(1) and the use of specified high-transfer-efficient coating application methods in subsection (g). Coatings that are compliant with the HAP content limits and emission rate limits of the 2004 NESHAPs and with the specified VOC content limits and emission rate limits of this final-form rulemaking are readily available to the owners and operators of all sizes of subject facilities. This final-form rulemaking provides flexibility in compliance through the second option in subsection (d)(2) of using a combination of VOC content limit compliant coating materials and the specified high-transfer-efficient coating application methods in subsection (g) with a VOC emissions capture system and add-on air pollution control device. A third compliance option, the use of a VOC emissions capture system and add-on air pollution control device with an overall control efficiency of at least 90%, instead of the use of complying coating materials and specified high-transfer-efficient coating application methods, is provided in subsection (d)(3). However, because of the wide availability and lower cost (compared to installation and operation of VOC emissions capture systems and add-on air pollution control devices) of compliant VOC content coating materials and high-transfer-efficient coating application methods, compliant coating materials and specified high-transfer-efficient coating application methods are generally expected to be used by affected owners and operators to reduce VOC emissions from surface coating processes subject to this final-form rulemaking.

The implementation of the work practices for the use and application of cleaning materials is expected to result in a net cost savings for affected owners and operators for cleaning materials and cleaning activities. The recommended work practices for cleaning activities should reduce the amounts of cleaning materials used by reducing the amounts that are lost to evaporation, spillage and waste.

#### I. *Sunset Review*

This final-form rulemaking will be reviewed in accordance with the sunset review schedule published by the Department to determine whether it effectively fulfills the goals for which it was intended.

#### J. *Regulatory Review*

Under section 5(a) of the Regulatory Review Act (71 P.S. § 745.5(a)), on July 13, 2015, the Department submitted a copy of the notice of proposed rulemaking, published at 45 Pa.B. 4366, to IRRC and the Chairper-

sons of the House and Senate Environmental Resources and Energy Committees for review and comment.

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

Under section 5.1(j.2) of the Regulatory Review Act (71 P.S. § 745.5a(j.2)), on August 17, 2016, this final-form rulemaking was deemed approved by the House and Senate Committees. Under section 5.1(e) of the Regulatory Review Act, IRRC met on August 18, 2016, and approved this final-form rulemaking.

#### K. *Findings*

The Board finds that:

(1) Public notice of proposed rulemaking was given under sections 201 and 202 of the act of July 31, 1968 (P.L. 769, No. 240) (45 P.S. §§ 1201 and 1202) and regulations promulgated thereunder, 1 Pa. Code §§ 7.1 and 7.2.

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

(3) This final-form rulemaking does not enlarge the purpose of the proposed rulemaking published at 45 Pa.B. 4366.

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

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

#### L. *Order*

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

(a) The regulations of the Department, 25 Pa. Code Chapter 129, are amended by adding § 129.52d and amending §§ 129.51, 129.52, 129.67 and 129.75 to read as set forth in Annex A, with ellipses referring to the existing text of the regulations.

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

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

(d) The Chairperson of the Board shall certify this order and Annex A and deposit them with the Legislative Reference Bureau as required by law.

(e) This final-form rulemaking will be submitted to the EPA as an amendment to the Pennsylvania SIP.

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

PATRICK McDONNELL,  
Acting Chairperson

(Editor's Note: See 46 Pa.B. 6743 (October 22, 2016) for a related final-form rulemaking adopting § 129.52e.)

(Editor's Note: See 46 Pa.B. 5790 (September 3, 2016) for IRRC's approval order.)

**Fiscal Note:** Fiscal Note 7-491 remains valid for the final adoption of the subject regulations.

**Annex A**

**TITLE 25. ENVIRONMENTAL PROTECTION**

**PART I. DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**Subpart C. PROTECTION OF NATURAL RESOURCES**

**ARTICLE III. AIR RESOURCES**

**CHAPTER 129. STANDARDS FOR SOURCES**

**SOURCES OF VOCs**

**§ 129.51. General.**

(a) *Equivalency.* Compliance with §§ 129.52, 129.52a, 129.52b, 129.52c, 129.52d, 129.52e, 129.54—129.67, 129.67a, 129.67b, 129.68, 129.69, 129.71—129.73 and 129.77 may be achieved by alternative methods if the following exist:

(1) The alternative method is approved by the Department in an applicable plan approval or operating permit, or both.

(2) The resulting emissions are equal to or less than the emissions that would have been discharged by complying with the applicable emission limitation.

(3) Compliance by a method other than the use of a low VOC coating, adhesive, sealant, adhesive primer, sealant primer, surface preparation solvent, cleanup solvent, cleaning solution, fountain solution or ink which meets the applicable emission limitation in §§ 129.52, 129.52a, 129.52b, 129.52c, 129.52d, 129.52e, 129.67, 129.67a, 129.67b, 129.73 and 129.77 shall be determined on the basis of equal volumes of solids.

(4) Capture efficiency testing and emissions testing are conducted in accordance with methods approved by the EPA.

(5) Adequate records are maintained to ensure enforceability.

(6) The alternative compliance method is incorporated into a plan approval or operating permit, or both, reviewed by the EPA, including the use of an air cleaning device to comply with § 129.52, § 129.52a, § 129.52b, § 129.52c, § 129.52d, § 129.52e, § 129.67, § 129.67a, § 129.67b, § 129.68(b)(2) and (c)(2), § 129.73 or § 129.77.

(b) *New source performance standards.* Sources covered by new source performance standards which are more stringent than those contained in this chapter shall comply with those standards in lieu of the standards in this chapter.

(c) *Demonstration of compliance.* Unless otherwise set forth in this chapter, test methods and procedures used to monitor compliance with the emission requirements of this section are those specified in Chapter 139 (relating to sampling and testing).

(d) *Records.* The owner or operator of a facility or source subject to one or more of the VOC emission limitations and control requirements in this chapter shall keep records to demonstrate compliance with the applicable limitation or control requirement.

(1) The records shall provide sufficient data and calculations to clearly demonstrate that the applicable emission limitation or control requirement is met. Data or information required to determine compliance with an applicable limitation shall be recorded and maintained in a time frame consistent with the averaging period of the standard.

(2) The records shall be maintained onsite for 2 years, unless a longer period is required by a plan approval or operating permit issued under Chapter 127 (relating to construction, modification, reactivation and operation of sources). The records shall be made available to the Department on request.

(e) *Demonstration of exempt status.* The owner or operator of a facility or source claiming that the facility or source is exempt from the VOC control provisions of this chapter shall maintain records that clearly demonstrate to the Department that the facility or source is not subject to the VOC emission limitations or control requirements of this chapter.

**§ 129.52. Surface coating processes.**

\* \* \* \* \*

(g) The records shall be maintained onsite for 2 years, unless a longer period is required by an order, plan approval or operating permit issued under Chapter 127 (relating to construction, modification, reactivation and operation of sources). The records shall be submitted to the Department in an acceptable format on a schedule reasonably prescribed by the Department.

(h) The VOC standards in Table I do not apply to a coating used exclusively for determining product quality and commercial acceptance, touch-up and repair and other small quantity coatings if the coating meets the following criteria:

(1) The quantity of coating used does not exceed 50 gallons per year for a single coating and a total of 200 gallons per year for all coatings combined for the facility.

(2) The owner or operator of the facility requests, in writing, and the Department approves, in writing, the exemption prior to use of the coating.

(i) Beginning January 1, 2011, the requirements and limits for metal furniture coatings and large appliance coatings in this section are superseded by the requirements and limits in § 129.52a (relating to control of VOC emissions from large appliance and metal furniture surface coating processes).

(j) Beginning January 1, 2012, the requirements and limits for paper coatings in this section are superseded by the requirements and limits in § 129.52b (relating to control of VOC emissions from paper, film and foil surface coating processes).

(k) Section 129.52d(a)(5)(i) (relating to control of VOC emissions from miscellaneous metal parts surface coating processes, miscellaneous plastic parts surface coating processes and pleasure craft surface coatings) applies to surface coating processes regulated under Table I, Category 10, miscellaneous metal parts and products. Aerosol coatings must meet the requirements of 40 CFR Part 59, Subpart E (relating to National volatile organic compound emission standards for aerosol coatings).

**Table I**  
**Emission Limits of VOCs in Surface Coatings by**  
**Process Category**  
**Weight of VOC per Volume of Coating Solids**

\* \* \* \* \*

**§ 129.52d. Control of VOC emissions from miscellaneous metal parts surface coating processes, miscellaneous plastic parts surface coating processes and pleasure craft surface coatings.**

(a) *Applicability.*

(1) This section applies to the owner and operator of a miscellaneous metal part surface coating process or miscellaneous plastic part surface coating process, or both, if the total actual VOC emissions from all miscellaneous metal part coating units and miscellaneous plastic part coating units, including related cleaning activities, at the facility are equal to or greater than 2.7 tons per 12-month rolling period, before consideration of controls.

(2) This section applies, as specified, to the owner and operator of a miscellaneous metal part surface coating process or miscellaneous plastic part surface coating process, or both, if the total actual VOC emissions from all miscellaneous metal part coating units and miscellaneous plastic part coating units, including related cleaning activities, at the facility are below 2.7 tons per 12-month rolling period, before consideration of controls.

(3) Compliance with the VOC emission limits and other requirements of this section assures compliance with the VOC emission limits and other requirements of § 129.52 (relating to surface coating processes) for the miscellaneous metal parts and products surface coating processes as specified in § 129.52, Table I, Category 10.

(4) If an owner or operator elects to comply with § 129.52e (relating to control of VOC emissions from automobile and light-duty truck assembly surface coating operations and heavier vehicle coating operations) under § 129.52e(a)(2) or (3), then § 129.52e instead of this section applies to the separate coating line at the facility, or to the coating of a body or body part for a new heavier vehicle at the facility, or both, for which the election is made.

(5) This section does not apply to an owner or operator in the use or application of the following:

- (i) Aerosol coatings that meet the requirements of 40 CFR Part 59, Subpart E (relating to National volatile organic compound emission standards for aerosol coatings).
- (ii) Aerospace coatings.
- (iii) Architectural coatings.
- (iv) Automobile refinishing coatings.
- (v) Auto and light-duty truck assembly coatings.
- (vi) Can, coil or magnet wire coatings.
- (vii) Coating applied to a test panel or coupon, or both, in research and development, quality control or performance testing activities, if records are maintained as required under subsections (e) and (f).
- (viii) Fiberglass boat manufacturing materials.
- (ix) Flat wood paneling coatings.
- (x) Large appliance coatings.
- (xi) Metal furniture coatings.
- (xii) Miscellaneous industrial adhesives.

- (xiii) Paper, film and foil coatings.
- (xiv) Shipbuilding and repair coatings.
- (xv) Wood furniture coatings.

(b) *Definitions.* The following words and terms, when used in this section, have the following meanings unless the context clearly indicates otherwise:

*Adhesion primer*—A coating applied to a polyolefin part to promote the adhesion of a subsequent coating. This type of coating is clearly identified on its accompanying MSDS by this term or as an adhesion promoter.

*Air-dried coating*—A coating that is cured or dried at a temperature below 90°C (194°F).

*Antifoulant or antifouling coating*—A coating applied to the underwater portion of a pleasure craft to prevent or reduce the attachment of biological organisms, and registered with the EPA as a pesticide under section 2 of the Federal Insecticide, Fungicide, and Rodenticide Act (7 U.S.C.A. § 136).

*Appurtenance*—An accessory to a stationary structure that is coated at the facility. The term includes:

- (i) Bathroom and kitchen fixtures.
- (ii) Cabinets.
- (iii) Concrete forms.
- (iv) Doors.
- (v) Elevators.
- (vi) Fences.
- (vii) Hand railings.
- (viii) Heating equipment, air conditioning equipment, and other fixed mechanical equipment or stationary tools.
- (ix) Lampposts.
- (x) Partitions.
- (xi) Pipes and piping systems.
- (xii) Rain gutters and downspouts.
- (xiii) Stairways.
- (xiv) Fixed ladders.
- (xv) Catwalks and fire escapes.
- (xvi) Window screens.

*Baked coating*—A coating cured at a temperature at or above 90°C (194°F).

*Black coating*—A coating that meets either of the following:

- (i) Both of the following criteria, which are based on Cielab color space, 0/45 geometry:
  - (A) Maximum lightness: 23 units.
  - (B) Saturation: less than 2.8, where saturation equals the square root of  $A^2 + B^2$ .
- (ii) For spherical geometry, specular included, maximum lightness is 33 units.

*Business machine*—

(i) A device that uses an electronic or mechanical method to process information, perform calculations, print or copy information, or convert sound into electrical impulses for transmission.

(ii) The term includes the following:

- (A) Devices listed in *Standard Industrial Classification Codes* 3572, 3573, 3574, 3579 and 3661.

(B) Photocopy machines, a subcategory of *Standard Industrial Classification Code* 3861.

*Camouflage coating*—A coating used principally by the military to conceal equipment from detection.

*Cleaning material or cleaning solvent*—A material used during cleaning activities or cleaning operations to remove residue or other unwanted materials from equipment.

*Clear coating*—

(i) A colorless coating that contains binders, but no pigment, and is formulated to form a transparent film.

(ii) The term includes a transparent coating that uses the undercoat as a reflectant base or undertone color.

*Clear wood finishes*—A clear or semitransparent topcoat applied to a wood substrate to provide a transparent or translucent film.

*Coating*—

(i) A material applied onto or into a substrate for protective, decorative or functional purposes.

(ii) The term includes paints, sealants, caulks, primers, inks and maskants.

(iii) The term does not include protective oils, acids or bases, or combinations of these materials.

*Coating unit*—A series of one or more coating applicators and associated drying area or oven or both wherein a coating is applied and dried or cured, or both. The unit ends at the point where the coating is dried or cured, or prior to subsequent application of a different coating.

*Drum*—A cylindrical metal shipping container larger than 12 gallons capacity but not larger than 110 gallons capacity.

*EMI/RFI shielding coating*—A coating used on electrical or electronic equipment to provide shielding against electromagnetic interference, radio frequency interference or static discharge.

*Electric dissipating coating*—A coating that rapidly dissipates a high voltage electric charge.

*Electric-insulating varnish*—A non-convertible-type coating applied to electric motors, components of electric motors or power transformers to provide electrical, mechanical or environmental protection or resistance.

*Electrostatic prep coating*—A coating applied to a plastic part solely to provide conductivity for the subsequent application of a primer, a topcoat or other coating through the use of electrostatic application methods. This term is clearly identified as an electrostatic prep coat on its accompanying MSDS.

*Etching filler*—A coating that contains less than 23% solids by weight and at least 0.5% acid by weight, and is used instead of applying a pretreatment coating followed by a primer.

*Extreme high-gloss coating*—A coating that achieves the following:

(i) For miscellaneous metal part surface coatings or miscellaneous plastic part surface coatings, other than pleasure craft surface coatings, a coating when tested by the American Society for Testing Material Test Method D-523-08 shows a reflectance of at least 75% on a 60° meter.

(ii) For pleasure craft surface coatings, a coating that shows a reflectance of at least 90% on a 60° meter when tested by American Society for Testing Material Test Method D-523-08.

*Extreme-performance coating*—

(i) A coating used on a metal or plastic surface where the coated surface is, in its intended use, subject to one or more of the following:

(A) Chronic exposure to corrosive, caustic or acidic agents, chemicals, chemical fumes, chemical mixtures or solutions.

(B) Repeated exposure to temperatures in excess of 250°F.

(C) Repeated heavy abrasion, including mechanical wear and repeated scrubbing with industrial grade solvents, cleansers or scouring agents.

(ii) The term includes coatings applied to locomotives, railroad cars, farm machinery and heavy duty trucks.

*Finish primer/surfacer*—A coating applied with a wet film thickness of less than 10 mils prior to the application of a topcoat for purposes of providing corrosion resistance, adhesion of subsequent coatings, a moisture barrier or promotion of a uniform surface necessary for filling in surface imperfections.

*Flexible primer*—A coating required to comply with engineering specifications for impact resistance, mandrel bend or elongation as defined by the original equipment manufacturer.

*Fog coat*—A coating applied to a plastic part, at a thickness of no more than 0.5 mil of coating solids, for the purpose of color matching without masking a molded-in texture.

*Gloss reducer*—A coating applied to a plastic part, at a thickness of no more than 0.5 mil of coating solids, solely to reduce the shine of the part.

*Heat-resistant coating*—A coating that must withstand a temperature of at least 400°F during normal use.

*Heavier vehicle*—A self-propelled vehicle designed for transporting persons or property on a street or highway that has a gross vehicle weight rating over 8,500 pounds.

*High bake coating*—A coating designed to cure only at temperatures of more than 90°C (194°F).

*High build primer/surfacer*—A coating applied with a wet film thickness of 10 mils or more prior to the application of a topcoat for purposes of providing corrosion resistance, adhesion of subsequent coatings, a moisture barrier or promotion of a uniform surface necessary for filling in surface imperfections.

*High gloss coating*—A coating that achieves at least 85% reflectance on a 60° meter when tested by ASTM Method D-523-08.

*High-performance architectural coating*—A coating used to protect aluminum architectural subsections and which meets the requirements of the American Architectural Manufacturers Association's publication number AAMA 2604 (Voluntary Specification, Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels) or 2605 (Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels), including updates and revisions.

*High-temperature coating*—A coating certified to withstand a temperature of 1,000°F for 24 hours.

*Mask coating*—A thin film coating applied through a template to coat a small portion of a substrate.

*Metal particles*—Pieces of a pure elemental metal or a combination of elemental metals.

*Metallic coating*—A coating that contains more than 5 grams of metal particles per liter of coating as applied.

*Military specification coating*—A coating that has a formulation approved by a United States Military Agency for use on military equipment.

*Miscellaneous metal parts and miscellaneous plastic parts*—Metal or plastic components of parts or products, as well as the parts or products themselves, constructed either entirely or partially from metal or plastic, or both, including the following:

- (i) Fabricated metal products.
- (ii) Molded plastic parts.
- (iii) Farm machinery.
- (iv) Commercial and industrial machinery and equipment.
- (v) Automotive or transportation equipment.
- (vi) Interior or exterior automotive parts.
- (vii) Construction equipment.
- (viii) Motor vehicle accessories.
- (ix) Bicycles and sporting goods.
- (x) Toys.
- (xi) Recreational vehicles.
- (xii) Watercraft.
- (xiii) Extruded aluminum structural components.
- (xiv) Railroad cars.
- (xv) Heavier vehicles.
- (xvi) Lawn and garden equipment.
- (xvii) Business machines.
- (xviii) Laboratory and medical equipment.
- (xix) Electronic equipment.
- (xx) Steel drums.
- (xxi) Metal pipes.

*Mold-release coating*—A coating applied to a mold to prevent the molded product from sticking to the mold as it is removed.

*Mold-seal coating*—The initial coating applied to a new or repaired mold to provide a smooth surface that when coated with a mold-release coating prevents products from sticking to the mold.

*Motor vehicle bedliner*—A multicomponent coating, used at a facility that is not an automobile or light-duty truck assembly coating facility, applied to a cargo bed after the application of topcoat to provide additional durability and chip resistance.

*Motor vehicle cavity wax*—A coating, used at a facility that is not an automobile or light-duty truck assembly coating facility, applied into the cavities of the vehicle primarily to enhance corrosion protection.

*Motor vehicle deadener*—A coating, used at a facility that is not an automobile or light-duty truck assembly

coating facility, applied to selected vehicle surfaces primarily to reduce the sound of road noise in the passenger compartment.

*Motor vehicle gasket/sealing material*—

(i) A fluid, used at a facility that is not an automobile or light-duty truck assembly coating facility, applied to coat a gasket or replace and perform the same function as a gasket.

(ii) The term includes room temperature vulcanization seal material.

*Motor vehicle lubricating wax/compound*—A protective lubricating material, used at a facility that is not an automobile or light-duty truck assembly coating facility, applied to vehicle hubs and hinges.

*Motor vehicle sealer*—A high viscosity material, used at a facility that is not an automobile or light-duty truck assembly coating facility, applied in the paint shop after the body has received an electrodeposition primer coating and before the application of subsequent coatings (for example, a primer/surfacer). The primary purpose of the material is to fill body joints completely so that there is no intrusion of water, gases or corrosive materials into the passenger area of the body compartment. The material is also referred to as sealant, sealant primer or caulk.

*Motor vehicle trunk interior coating*—A coating, used at a facility that is not an automobile or light-duty truck assembly coating facility, applied to the trunk interior to provide chip protection.

*Motor vehicle underbody coating*—A coating, used at a facility that is not an automobile or light-duty truck assembly coating facility, applied to the undercarriage or firewall to prevent corrosion or provide chip protection, or both.

*Multicolored coating*—A coating that exhibits more than one color when applied and which is packaged in a single container and applied in a single coat.

*Multicomponent coating*—A coating requiring the addition of a separate reactive resin, commonly known as a catalyst or hardener, before application to the substrate to form an acceptable dry film.

*One-component coating*—A coating that is ready for application as it comes out of its container to form an acceptable dry film. A thinner may be added to reduce the viscosity, but is not considered a component.

*Optical coating*—A coating applied to an optical lens.

*Pan-backing coating*—A coating applied to the surface of pots, pans or other cooking implements that are exposed directly to a flame or other heating element.

*Pleasure craft*—A vessel that is manufactured or operated primarily for recreational purposes, or leased, rented or chartered to a person or business for recreational purposes.

*Pleasure craft coating*—A marine coating, except unsaturated polyester resin (fiberglass) coatings, applied by brush, spray, roller or other means to a pleasure craft.

*Powder coating*—A coating applied as a dry, finely divided solid that, when melted and fused, adheres to the substrate as a paint film.

*Prefabricated architectural component coating*—A coating applied to a prefabricated metal part or product if the part or product is to be used as an architectural appurtenance or structure. The appurtenance is detached from the structure when coated in a shop setting.

*Pretreatment coating*—A coating that contains no more than 12% solids by weight and at least 0.5% acid by weight that is used to provide surface etching and that is applied directly to metal surfaces to provide corrosion resistance, adhesion and ease of stripping.

*Pretreatment wash primer*—A coating that contains no more than 12% solids by weight and at least 0.5% acid by weight that is used to provide surface etching and that is applied directly to fiberglass and metal surfaces to provide corrosion resistance and adhesion of subsequent coatings.

*Red coating*—A coating that meets the following:

(i) All of the following criteria, which are based on Cielab color space, 0/45 geometry:

- (A) Yellow limit: the hue of hostaperm scarlet.
- (B) Blue limit: the hue of monastral red-violet.
- (C) Lightness limit for metallics: 35% aluminum flake.
- (D) Lightness limit for solids: 50% titanium dioxide white.
- (E) Solid reds: hue angle of -11 to 38 degrees and maximum lightness of 23 to 45 units.
- (F) Metallic reds: hue angle of -16 to 35 degrees and maximum lightness of 28 to 45 units.

(ii) For spherical geometry, specular included, the upper limit is 49 units.

*Repair coating*—A coating used to recoat portions of a previously coated product that has sustained mechanical damage to the coating following normal coating operations.

*Resist coating*—A coating that is applied to a plastic part before metallic plating to prevent deposits of metal on portions of the plastic part.

*Shock-free coating*—A coating applied to electrical components to protect the user from electric shock. The coating has characteristics of being of low capacitance and high resistance, and being resistant to breaking down under high voltage.

*Silicone-release coating*—A coating which contains silicone resin and is intended to prevent food from sticking to metal surfaces, such as baking pans.

*Solar-absorbent coating*—A coating which has as its prime purpose the absorption of solar radiation.

*Stencil coating*—An ink or coating that is applied onto a template, stamp or stencil to add identifying letters, numbers or decorative designs, or a combination of these, to a metal or plastic part or product.

*Texture coat*—A coating that is applied to a plastic part which, in its finished form, consists of discrete raised spots of the coating.

*Topcoat*—A final coating applied in a surface coating process that applies two or more coatings.

*Touch-up coating*—A coating used to cover minor coating imperfections appearing after the main coating operation.

*Translucent coating*—A coating that contains binders and pigment and is formulated to form a colored, but not opaque, film.

*Two-component coating*—A coating requiring the addition of a separate reactive resin, commonly known as a catalyst, before application to form an acceptable dry film.

*Vacuum-metalizing coating*—A coating meeting either of the following:

(i) An undercoat applied to a substrate on which the metal is deposited prior to a vacuum-metalizing process.

(ii) An overcoat applied directly to the metal film after a vacuum-metalizing process.

*Vacuum-metalizing process*—The process of evaporating metals inside a vacuum chamber and depositing them on a substrate to achieve a uniform metalized layer.

(c) *Existing RACT permit*. The requirements of this section supersede the requirements of a RACT permit issued under §§ 129.91—129.95 (relating to stationary sources of NO<sub>x</sub> and VOCs) to the owner or operator of a source subject to subsection (a) prior to January 1, 2017, to control, reduce or minimize VOCs from a miscellaneous metal part or miscellaneous plastic part surface coating process, except to the extent the RACT permit contains more stringent requirements.

(d) *Emission limitations*. Beginning January 1, 2017, a person subject to subsection (a)(1) may not cause or permit the emission into the outdoor atmosphere of VOCs from a miscellaneous metal part coating unit or miscellaneous plastic part coating unit, or both, unless emissions of VOCs are controlled in accordance with paragraph (1), (2) or (3).

(1) *Compliant materials option*. The VOC content of each miscellaneous metal part coating or each miscellaneous plastic part coating, as applied, excluding water and exempt compounds, is equal to or less than the VOC content limit for the applicable coating category specified in the applicable table of VOC content limits in Tables I—V.

(2) *Combination of compliant materials, VOC emissions capture system and add-on air pollution control device option*. The combination of one or more VOC-containing coatings, as applied, that meet the emission rate limits for the applicable coating category specified in the applicable table of emission rate limits in Tables VI—IX, and one or more VOC emissions capture systems and one or more add-on air pollution control devices that meet the requirements of subsection (e)(2).

(3) *VOC emissions capture system and add-on air pollution control device option*. The overall weight of VOCs emitted to the atmosphere is reduced through the use of vapor recovery, oxidation, incineration or another method that is acceptable under § 129.51(a) (relating to general) and meets the requirements of subsection (e)(2). The overall control efficiency of a control system, as determined by the test methods and procedures specified in Chapter 139 (relating to sampling and testing), may be no less than 90%.

(4) *Least restrictive VOC limit*. If more than one VOC content limit or VOC emission rate limit applies to a specific coating, then the least restrictive VOC content limit or VOC emission rate limit applies.

(5) *Coatings not listed in Table I, II, VI or VII*. For a miscellaneous metal part or miscellaneous plastic part coating that does not meet the coating categories listed in Table I, II, VI or VII, the VOC content limit or VOC emission rate limit shall be determined by classifying the coating as a general one component coating or general multicomponent coating. The corresponding general one component coating or general multicomponent coating limit applies.

(6) *Coatings not listed in Table IV or IX*. For a pleasure craft coating that does not meet the coating categories



listed in Table IV or IX, the VOC content limit or VOC emission rate limit shall be determined by classifying the coating as an "all other pleasure craft surface coatings for metal or plastic." The "all other pleasure craft surface coatings for metal or plastic" limit applies.

(e) *Compliance and monitoring requirements.*

(1) *All owners and operators.* Regardless of the facility's VOC emissions, the owner or operator of a miscellaneous metal part surface coating process or miscellaneous plastic part surface coating process, or both, subject to subsection (a)(1) or (2), shall comply with this section as specified throughout this section. For an owner or operator subject only to subsection (a)(2), the compliance requirements are the recordkeeping requirements in subsection (f)(2).

(2) *VOC emissions capture system and add-on air pollution control device.* The owner or operator of a facility subject to subsection (a)(1) that elects to comply with the emission limitations of subsection (d) through installation of a VOC emissions capture system and add-on air pollution control device under subsection (d)(2) or (3) shall submit an application for a plan approval to the appropriate regional office. The plan approval must be approved, in writing, by the Department prior to installation and operation of the emissions capture system and add-on air pollution control device. The plan approval must include the following information:

- (i) A description, including location, of each affected source or operation to be controlled with the emissions capture system and add-on air pollution control device.
- (ii) A description of the proposed emissions capture system and add-on air pollution control device to be installed.
- (iii) A description of the proposed compliance monitoring equipment to be installed.
- (iv) A description of the parameters to be monitored to demonstrate continuing compliance.
- (v) A description of the records to be kept that will document the continuing compliance.
- (vi) A schedule containing proposed interim dates for completing each phase of the required work to install and test the emissions capture system and add-on air pollution control device described in subparagraph (ii) and the compliance monitoring equipment described in subparagraph (iii).
- (vii) A proposed interim emission limitation that will be imposed on the affected source or operation until compliance is achieved with the applicable emission limitation.
- (viii) A proposed final compliance date that is as soon as possible but not later than 1 year after the start of installation of the approved emissions capture system and add-on air pollution control device and the compliance monitoring equipment.

(f) *Recordkeeping and reporting requirements.*

(1) The owner or operator of a miscellaneous metal part coating unit or miscellaneous plastic part coating unit, or both, subject to subsection (a)(1) shall maintain monthly records sufficient to demonstrate compliance with this section. The records must include the following information:

(i) The following parameters for each coating, thinner, component and cleaning solvent as supplied:

- (A) Name and identification number of the coating, thinner, other component or cleaning solvent.
- (B) Volume used.
- (C) Mix ratio.
- (D) Density or specific gravity.
- (E) Weight percent of total volatiles, water, solids and exempt solvents.
- (F) Volume percent of total volatiles, water and exempt solvents for the applicable table of limits in Tables I—V.
- (G) Volume percent of solids for the applicable table of limits in Tables VI—IX.
- (ii) The VOC content of each coating, thinner, other component and cleaning solvent as supplied.
- (iii) The VOC content of each as applied coating or cleaning solvent.
- (iv) The calculations performed for each applicable requirement under subsections (d) and (e).
- (v) The information required in a plan approval issued under subsection (e)(2).

(2) An owner or operator subject to subsection (a)(2), or otherwise claiming an exemption or exception in this section, shall maintain records sufficient to verify the applicability of subsection (a)(2), the exemption or exception. Records maintained for compliance demonstrations may include purchase, use, production and other records.

(3) The records shall be maintained onsite for 2 years, unless a longer period is required by an order, plan approval or operating permit issued under Chapter 127 (relating to construction, modification, reactivation and operation of sources).

(4) The records shall be submitted to the Department in an acceptable format upon receipt of a written request from the Department.

(g) *Coating application methods.* A person subject to subsection (a)(1) may not cause or permit the emission into the outdoor atmosphere of VOCs from a miscellaneous metal part coating unit or miscellaneous plastic part coating unit, or both, unless the coatings are applied using one or more of the following coating application methods:

- (1) Electrostatic coating.
- (2) Flow coating.
- (3) Dip coating, including electrodeposition.
- (4) Roll coating.
- (5) High volume-low pressure (HVLP) spray coating.
- (6) Airless spray coating.
- (7) Air-assisted airless spray coating.
- (8) Other coating application method if approved in writing by the Department prior to use.

(i) The coating application method must be capable of achieving a transfer efficiency equivalent to or better than that achieved by HVLP spray coating.

(ii) The owner or operator shall submit the request for approval to the Department in writing.

(h) *Exempt coatings and exempt coating unit operations.*

(1) The requirements of subsections (d) and (g) do not apply to the application of the following coatings to a metal part:

- (i) Stencil coating.
  - (ii) Safety-indicating coating.
  - (iii) Solid-film lubricant.
  - (iv) Electric-insulating and thermal-conducting coating.
  - (v) Magnetic data storage disk coating.
  - (vi) Plastic extruded onto metal parts to form a coating.
  - (vii) Powder coating.
- (2) The requirements of subsection (d) do not apply to the application of the following coatings to a plastic part:
- (i) Touch-up and repair coating.
  - (ii) Stencil coating applied on a clear or transparent substrate.
  - (iii) Clear or translucent coating.
  - (iv) Coating applied at a paint manufacturing facility while conducting performance tests on coating.
  - (v) Reflective coating applied to highway cones.
  - (vi) Mask coating, if the coating is less than 0.5 millimeter thick (dried) and the area coated is less than 25 square inches.
  - (vii) EMI/RFI shielding coating.
  - (viii) Heparin-benzalkonium chloride (HBAC)-containing coating applied to a medical device, provided that the total usage of HBAC-containing coatings does not exceed 100 gallons in 1 calendar year at the facility.
  - (ix) Powder coating.
  - (x) An individual coating category used in an amount less than 50 gallons in 1 calendar year provided that the total usage of all of the coatings, combined, does not exceed 200 gallons per year at the facility. This exception applies only if substitute compliant coatings are not available.
- (3) The requirements of subsection (d) do not apply to the application of the following coatings to automotive-transportation and business machine parts:
- (i) Texture coat.
  - (ii) Vacuum-metalizing coating.
  - (iii) Gloss reducer.
  - (iv) Texture topcoat.
  - (v) Adhesion primer.
  - (vi) Electrostatic prep coat.
  - (vii) Resist coating.
  - (viii) Stencil coating.
  - (ix) Powder coating.
- (4) The requirements of subsection (g) do not apply to the following activities:
- (i) Application of a touch-up coating, repair coating or textured finish to a metal part.
  - (ii) Application of a powder coating to the following:
    - (A) Plastic part.
    - (B) Automotive-transportation plastic part.
    - (C) Business machine plastic part.
  - (iii) Airbrush application of coating to a metal part or plastic part using no more than 5 gallons of coating per year.

(iv) Use of an add-on air pollution control device to comply with subsection (d).

(v) Application of extreme high-gloss coating in a pleasure craft surface coating operation.

(i) *Work practice requirements for coating-related activities.* The owner or operator of a miscellaneous metal part coating unit or miscellaneous plastic part coating unit, or both, subject to subsection (a)(1) shall comply with the following work practices for coating-related activities:

(1) Store all VOC-containing coatings, thinners or coating-related waste materials in closed containers.

(2) Ensure that mixing and storage containers used for VOC-containing coatings, thinners or coating-related waste materials are kept closed at all times, except when depositing or removing these coatings, thinners or waste materials.

(3) Minimize spills of VOC-containing coatings, thinners or coating-related waste materials and clean up spills immediately.

(4) Convey VOC-containing coatings, thinners or coating-related waste materials from one location to another in closed containers or pipes.

(j) *Work practice requirements for cleaning materials.* The owner or operator of a miscellaneous metal part coating unit or miscellaneous plastic part coating unit subject to subsection (a)(1) shall comply with the following work practices for cleaning materials:

(1) Store all VOC-containing cleaning materials and used shop towels in closed containers.

(2) Ensure that mixing vessels and storage containers used for VOC-containing cleaning materials are kept closed at all times except when depositing or removing these materials.

(3) Minimize spills of VOC-containing cleaning materials and clean up spills immediately.

(4) Convey VOC-containing cleaning materials from one location to another in closed containers or pipes.

(5) Minimize VOC emissions from cleaning of application, storage, mixing or conveying equipment by ensuring that equipment cleaning is performed without atomizing the cleaning solvent and all spent solvent is captured in closed containers.

(k) *Measurements and calculations.* To determine the properties of a coating or component used in a miscellaneous metal parts surface coating process or miscellaneous plastic parts surface coating process, measurements and calculations shall be performed according to one or more of the following:

(1) EPA Reference Method 24, *Determination of Volatile Matter Content, Water Content, Density, Volume Solids, and Weight Solids of Surface Coatings*, found at 40 CFR Part 60, Subpart D, Appendix A, including updates and revisions.

(2) Manufacturer's formulation data.

(3) Sampling and testing done in accordance with the procedures and test methods specified in Chapter 139.

(4) Other test method demonstrated to provide results that are acceptable for purposes of determining compli-

ance with this section if prior approval is obtained in writing from the Department.

(5) Add-on air pollution control devices shall be equipped with the applicable monitoring equipment according to manufacturers' specifications. The monitoring equipment shall be installed, calibrated, operated and maintained according to manufacturers' specifications at all times the add-on air pollution control device is in use.

(6) EPA calculations information in the following:

(i) *A Guideline for Surface Coating Calculations*, EPA-340/1-86-016, including updates and revisions.

(ii) *Procedures for Certifying Quantity of Volatile Organic Compounds Emitted by Paint, Ink, and Other Coatings*, EPA-450/3-84-019, including updates and revisions.

**Table I. VOC Content Limits for Metal Parts and Products Surface Coatings  
Weight of VOC per Volume of Coating, Less Water and Exempt Compounds, as Applied**

Coating Category	Air Dried		Baked	
	kg VOC/ l coating	lb VOC/ gal coating	kg VOC/ l coating	lb VOC/ gal coating
General One-component	0.34	2.8	0.28	2.3
General Multicomponent	0.34	2.8	0.28	2.3
Camouflage	0.42	3.5	0.42	3.5
Electric-insulating Varnish	0.42	3.5	0.42	3.5
Etching Filler	0.42	3.5	0.42	3.5
Extreme High-gloss	0.42	3.5	0.36	3.0
Extreme Performance	0.42	3.5	0.36	3.0
Heat-resistant	0.42	3.5	0.36	3.0
High-performance Architectural	0.74	6.2	0.74	6.2
High-temperature	0.42	3.5	0.42	3.5
Metallic	0.42	3.5	0.42	3.5
Military Specification	0.34	2.8	0.28	2.3
Mold-seal	0.42	3.5	0.42	3.5
Pan-backing	0.42	3.5	0.42	3.5
Prefabricated Architectural Multicomponent	0.42	3.5	0.28	2.3
Prefabricated Architectural One-component	0.42	3.5	0.28	2.3
Pretreatment	0.42	3.5	0.42	3.5
Touch-up and Repair	0.42	3.5	0.36	3.0
Silicone-release	0.42	3.5	0.42	3.5
Solar-absorbent	0.42	3.5	0.36	3.0
Vacuum-metalizing	0.42	3.5	0.42	3.5
Drum Coating, New, Exterior	0.34	2.8	0.34	2.8
Drum Coating, New, Interior	0.42	3.5	0.42	3.5
Drum Coating, Reconditioned, Exterior	0.42	3.5	0.42	3.5
Drum Coating, Reconditioned, Interior	0.50	4.2	0.50	4.2

**Table II. VOC Content Limits for Plastic Parts and Products Surface Coatings  
Weight of VOC per Volume of Coating, Less Water and Exempt Compounds, as Applied**

Coating Category	kg VOC/ l coating	lb VOC/ gal coating
General One-component	0.28	2.3
General Multicomponent	0.42	3.5
Electric Dissipating and Shock-free	0.80	6.7
Extreme Performance (2-pack coatings)	0.42	3.5
Metallic	0.42	3.5
Military Specification (1-pack)	0.34	2.8
Military Specification (2-pack)	0.42	3.5
Mold-seal	0.76	6.3
Multicolored	0.68	5.7
Optical	0.80	6.7
Vacuum-metalizing	0.80	6.7

**Table III. VOC Content Limits for Automotive/Transportation and Business Machine Plastic Parts  
Surface Coatings**

**Weight of VOC per Volume of Coating, Less Water and Exempt Compounds, as Applied**

Coating Category	Automotive/Transportation Coatings*	
	kg VOC/ l coating	lb VOC/ gal coating
I. High Bake Coatings—Interior and Exterior Parts		
Flexible Primer	0.54	4.5
Nonflexible Primer	0.42	3.5
Basecoat	0.52	4.3
Clear Coat	0.48	4.0
Non-basecoat/Clear Coat	0.52	4.3

**Automotive/Transportation Coatings\***

<i>Coating Category</i>	<i>kg VOC/ l coating</i>	<i>lb VOC/ gal coating</i>
II. Low Bake/Air Dried Coatings—Exterior Parts		
Primer	0.58	4.8
Basecoat	0.60	5.0
Clear Coat	0.54	4.5
Non-basecoat/Clear Coat	0.60	5.0
III. Low Bake/Air Dried Coatings—Interior Parts	0.60	5.0
IV. Touch-up and Repair	0.62	5.2

\* For red, yellow and black automotive coatings, except touch-up and repair coatings, the limit is determined by multiplying the appropriate limit in this table by 1.15.

**Business Machine Coatings**

<i>Coating Category</i>	<i>kg VOC/ l coating</i>	<i>lb VOC/ gal coating</i>
Primer	0.35	2.9
Topcoat	0.35	2.9
Texture Coat	0.35	2.9
Fog Coat	0.26	2.2
Touch-up and Repair	0.35	2.9

**Table IV. VOC Content Limits for Pleasure Craft Surface Coatings****Weight of VOC per Volume of Coating, Less Water and Exempt Compounds, as Applied**

<i>Coating Category</i>	<i>kg VOC/ l coating</i>	<i>lb VOC/ gal coating</i>
Extreme High-gloss Topcoat	0.60	5.0
High Gloss Topcoat	0.42	3.5
Pretreatment Wash Primer	0.78	6.5
Finish Primer/Surfacer	0.42	3.5
High Build Primer Surfacer	0.34	2.8
Aluminum Substrate Antifoulant Coating	0.56	4.7
Antifoulant Sealer/Tiecoat	0.42	3.5
Other Substrate Antifoulant Coating	0.40	3.3
All Other Pleasure Craft Surface Coatings for Metal or Plastic	0.42	3.5

**Table V. VOC Content Limits for Motor Vehicle Materials Surface Coatings****Weight of VOC per Volume of Coating, Less Water and Exempt Compounds, as Applied**

<i>Coating Category</i>	<i>kg VOC/ l coating</i>	<i>lb VOC/ gal coating</i>
Motor Vehicle Cavity Wax	0.65	5.4
Motor Vehicle Sealer	0.65	5.4
Motor Vehicle Deadener	0.65	5.4
Motor Vehicle Gasket/Gasket Sealing Material	0.20	1.7
Motor Vehicle Underbody Coating	0.65	5.4
Motor Vehicle Trunk Interior Coating	0.65	5.4
Motor Vehicle Bedliner	0.20	1.7
Motor Vehicle Lubricating Wax/Compound	0.70	5.8

**Table VI. VOC Emission Rate Limits for Metal Parts and Products Surface Coatings****Weight of VOC per Volume of Coating Solids, as Applied**

<i>Coating Category</i>	<i>Air Dried</i>		<i>Baked</i>	
	<i>kg VOC/ l solids</i>	<i>lb VOC/ gal solids</i>	<i>kg VOC/ l solids</i>	<i>lb VOC/ gal solids</i>
General One-component	0.54	4.52	0.40	3.35
General Multicomponent	0.54	4.52	0.40	3.35
Camouflage	0.80	6.67	0.80	6.67
Electric-insulating Varnish	0.80	6.67	0.80	6.67
Etching Filler	0.80	6.67	0.80	6.67
Extreme High-gloss	0.80	6.67	0.61	5.06
Extreme Performance	0.80	6.67	0.61	5.06
Heat-resistant	0.80	6.67	0.61	5.06
High-performance Architectural	4.56	38.0	4.56	38.0
High-temperature	0.80	6.67	0.80	6.67
Metallic	0.80	6.67	0.80	6.67
Military Specification	0.54	4.52	0.40	3.35

Coating Category	Air Dried		Baked	
	kg VOC/ l solids	lb VOC/ gal solids	kg VOC/ l solids	lb VOC/ gal solids
Mold-seal	0.80	6.67	0.80	6.67
Pan-backing	0.80	6.67	0.80	6.67
Prefabricated Architectural Multicomponent	0.80	6.67	0.40	3.35
Prefabricated Architectural One-component	0.80	6.67	0.40	3.35
Pretreatment	0.80	6.67	0.80	6.67
Silicone-release	0.80	6.67	0.80	6.67
Solar-absorbent	0.80	6.67	0.61	5.06
Vacuum-metalizing	0.80	6.67	0.80	6.67
Drum Coating, New, Exterior	0.54	4.52	0.54	4.52
Drum Coating, New, Interior	0.80	6.67	0.80	6.67
Drum Coating, Reconditioned, Exterior	0.80	6.67	0.80	6.67
Drum Coating, Reconditioned, Interior	1.17	9.78	1.17	9.78

**Table VII. VOC Emission Rate Limits for Plastic Parts and Products Surface Coatings**

**Weight of VOC per Volume of Coating Solids, as Applied**

Coating Category	kg VOC/ l solids	lb VOC/ gal solids
General One-component	0.40	3.35
General Multicomponent	0.80	6.67
Electric Dissipating and Shock-free	8.96	74.7
Extreme Performance (2-pack coatings)	0.80	6.67
Metallic	0.80	6.67
Military Specification (1-pack)	0.54	4.52
Military Specification (2-pack)	0.80	6.67
Mold-seal	5.24	43.7
Multicolored	3.04	25.3
Optical	8.96	74.7
Vacuum-metalizing	8.96	74.7

**Table VIII. VOC Emission Rate Limits for Automotive/Transportation and Business Machine Plastic Parts Surface Coatings**

**Weight of VOC per Volume of Coating Solids, as Applied**

**Automotive/Transportation Coatings\***

Coating Category	kg VOC/ l solids	lb VOC/ gal solids
I. High Bake Coatings—Interior and Exterior Parts		
Flexible Primer	1.39	11.58
Nonflexible Primer	0.80	6.67
Basecoat	1.24	10.34
Clear Coat	1.05	8.76
Non-basecoat/Clear Coat	1.24	10.34
II. Low Bake/Air Dried Coatings—Exterior Parts		
Primer	1.66	13.80
Basecoat	1.87	15.59
Clear Coat	1.39	11.58
Non-basecoat/Clear Coat	1.87	15.59
III. Low Bake/Air Dried Coatings—Interior Parts	1.87	15.59
IV. Touch-up and Repair	2.13	17.72

\* For red, yellow and black automotive coatings, except touch-up and repair coatings, the limit is determined by multiplying the appropriate limit in this table by 1.15.

**Business Machine Coatings**

Coating Category	kg VOC/ l solids	lb VOC/ gal solids
Primer	0.57	4.80
Topcoat	0.57	4.80
Texture Coat	0.57	4.80
Fog Coat	0.38	3.14
Touch-up and Repair	0.57	4.80

**Table IX. VOC Emission Rate Limits for Pleasure Craft Surface Coatings  
Weight of VOC per Volume of Coating Solids, as Applied**

<i>Coating Category</i>	<i>kg VOC/ l solids</i>	<i>lb VOC/ gal solids</i>
Extreme High-gloss Topcoat	1.10	9.2
High Gloss Topcoat	0.80	6.7
Pretreatment Wash Primer	6.67	55.6
Finish Primer/Surfacer	0.80	6.7
High Build Primer Surfacer	0.55	4.6
Aluminum Substrate Antifoulant Coating	1.53	12.8
Other Substrate Antifoulant Coating	0.53	4.4
All Other Pleasure Craft Surface Coatings for Metal or Plastic	0.80	6.7

**§ 129.67. Graphic arts systems.**

(a) This section applies as follows:

(1) This section applies to the owner and operator of a facility whose rotogravure and flexographic printing presses by themselves or in combination with a surface coating operation subject to § 129.52, § 129.52a, § 129.52b, § 129.52c or § 129.52d or in combination with a flexible packaging printing press subject to § 129.67a (relating to control of VOC emissions from flexible packaging printing presses) have the potential to emit or have emitted VOCs into the outdoor atmosphere in quantities greater than 1,000 pounds (460 kilograms) per day or 100 tons (90,900 kilograms) per year during any calendar year since January 1, 1987.

(2) This section applies to the owner and operator of a flexographic or rotogravure printing press that prints flexible packaging materials subject to § 129.67a(a)(1)(ii) if the owner or operator was required to install a control device under this section prior to June 28, 2014.

(3) This section does not apply to the owner or operator of a flexible packaging printing press subject to § 129.67a(a)(1)(i).

(b) A person may not permit the emission into the outdoor atmosphere of VOCs from a rotogravure or flexographic printing press subject to this section unless one of the following limitations is met:

(1) The volatile fraction of the ink, as applied to the substrate, contains 25% or less by volume of VOC and 75% or more by volume of water.

(2) The ink, as applied to the substrate, less water, contains 60% by volume or more of solid material.

(3) The owner or operator installs and operates a carbon adsorption system, an incineration system or an alternative VOC emission reduction system which recovers or destroys at least 90% of the VOCs entering the system. The overall level of emission recovery or destruction may not be less than that necessary to comply with subsection (c).

(c) A capture system shall be used in conjunction with the emission control systems in subsection (b)(3). The design and operation of the capture and control system shall be consistent with good engineering practice and shall be designed to provide for a contemporaneous, overall reduction in VOC emission from each ink/press of at least the following:

(1) Seventy-five percent where a publication rotogravure process is employed.

(2) Sixty-five percent where another rotogravure process is employed.

(3) Sixty percent where a flexographic printing process is employed.

(d) Presses used only to check the quality of the image formation of newly etched or engraved printing cylinders are exempted from this section if the aggregate emissions from the presses do not exceed 400 pounds in a 30-day running period.

(e) To determine applicability under this section, emissions of VOCs used in clean-up operations shall be summed with emissions from surface coating and printing.

**§ 129.75. Mobile equipment repair and refinishing.**

\* \* \* \* \*

(b) This section does not apply to a person who applies surface coating to mobile equipment or mobile equipment components under one of the following circumstances:

(1) The surface coating process is subject to the miscellaneous metal parts finishing requirements of § 129.52 (relating to surface coating processes) or the requirements of § 129.52d (relating to control of VOC emissions from miscellaneous metal parts surface coating processes, miscellaneous plastic parts surface coating processes and pleasure craft surface coatings).

\* \* \* \* \*

[Pa.B. Doc. No. 16-1847. Filed for public inspection October 21, 2016, 9:00 a.m.]

**ENVIRONMENTAL QUALITY BOARD  
[25 PA. CODE CHS. 87, 88 AND 90 ]  
Remining Requirements**

The Environmental Quality Board (Board) amends the remining regulations in Chapter 87, Subchapter F, Chapter 88, Subchapter G and Chapter 90, Subchapter F (relating to surface coal mines: minimum requirements for remining areas with pollutional discharges; anthracite surface mining activities and anthracite bank removal and reclamation activities: minimum requirements for remining areas with pollutional discharges; and coal refuse disposal activities on areas with pre-existing pollutional discharges) to read as set forth in Annex A. This final-form rulemaking incorporates requirements of the Federal remining rules in 40 CFR Part 434, Subpart G (relating to coal remining) and the statistical methods in 40 CFR Part 434, Appendix B (relating to baseline determination and compliance monitoring for pre-existing discharges at remining operations).

This final-form rulemaking was adopted by the Board at its meeting of May 17, 2016.

#### A. *Effective Date*

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

#### B. *Contact Persons*

For further information, contact Thomas Callaghan, PG, Director, Bureau of Mining Programs, Rachel Carson State Office Building, 5th Floor, 400 Market Street, P.O. Box 8461, Harrisburg, PA 17105-8461, (717) 787-5015; or Joseph Iole, Assistant Counsel, Bureau of Regulatory Counsel, P.O. Box 8464, Rachel Carson State Office Building, Harrisburg, PA 17105-8464, (717) 787-7060. Persons with a disability may use the Pennsylvania AT&T Relay Service, (800) 654-5984 (TDD users) or (800) 654-5988 (voice users). This final-form rulemaking is available on the Department of Environmental Protection's (Department) web site at [www.dep.pa.gov](http://www.dep.pa.gov) (select "Public Participation," then "Environmental Quality Board (EQB)").

#### C. *Statutory Authority*

This final-form rulemaking is authorized under the authority of section 5 of The Clean Streams Law (35 P.S. § 691.5), sections 4(a) and 4.2 of the Surface Mining Conservation and Reclamation Act (52 P.S. §§ 1396.4(a) and 1396.4b) and section 1920-A of The Administrative Code of 1929 (71 P.S. § 510-20).

#### D. *Background and Purpose*

The Commonwealth's remining program is implemented through Chapter 87, Subchapter F, Chapter 88, Subchapter G and Chapter 90, Subchapter F, as well as through technical guidance documents and individual permits. This program allows for liability protection for remining operations conducted on abandoned mine lands with existing pollutional discharges by enabling the Department to determine the pollution baseline at a site and set effluent limitations accordingly. Currently, the Department determines the pollution baseline using a single statistical method (Method 1), explained as follows, and incorporates the baseline in the individual permit.

Federal remining requirements are found in 40 CFR Part 434, Subpart G and Appendix B. The Federal requirements differ from the Pennsylvania requirements by providing the option of employing an alternative statistical method (Method 2) for determining the pollution baseline. The choice of methods depends on which method would more accurately characterize baseline levels due to site-specific factors.

The Federal regulations further provide for remining in cases in which the pollution baseline cannot be determined due to infeasibility of sampling and remining would result in significant water quality improvement that would not otherwise occur. Under these circumstances, the Federal regulations require an operator to submit a pollution abatement plan based on best management practices (BMP) without regard for numeric effluent limitations.

The preambles of the Federal remining regulations, proposed at 65 FR 19440 (April 11, 2000) and adopted at 67 FR 3370 (January 23, 2002), provide extensive additional background references explaining the statistical methods, BMPs and other requirements. Notably, the Federal regulations were informed by the extensive experience with remining in this Commonwealth.

This final-form rulemaking incorporates into the Commonwealth's regulations both statistical methods provided in the Federal regulations, eliminating the need to implement the methods through individual permits and providing flexibility regarding the choice of statistical method based on site-specific factors. This final-form rulemaking further provides for remining at sites in which it is infeasible to establish pollution baselines.

#### *Summary of the Federal regulations*

##### *40 CFR Part 434, Subpart G*

Subpart G of 40 CFR Part 434 includes specialized definitions, applicability and effluent limitations for remining.

The following definitions are included in 40 CFR 434.70 (relating to specialized definitions): "coal remining operation," "pollution abatement area," "pre-existing discharge," "steep slope" and "new source remining operation."

Section 434.71 of 40 CFR (relating to applicability) includes a description of mine sites to which the regulations apply, requirements for water that is intercepted by remining activities, a grandfather clause for existing approved remining authorizations and a description of the time period during which the regulations apply.

The effluent limitations are established in four categories: best practicable control technology currently available (BPT); best available technology economically achievable (BAT); best conventional pollutant control technology (BCT); and new source performance standards (NSPS).

The BPT limitations in 40 CFR 434.72 (relating to effluent limitations attainable by the application of the best practicable control technology currently available (BPT)) are the most commonly applicable. The Federal BPT regulations require a site-specific pollution abatement plan designed to reduce the pollution load. They also establish numerical effluent limitations for pre-existing discharges for total iron, total manganese, net acidity and total suspended solids. These effluent limitations may not exceed the baseline pollution load, as defined under the methods described in 40 CFR Part 434, Appendix B. The BPT limitations also allow for circumstances under which the numerical limitations are not applicable, specifically in cases in which it is infeasible to collect samples to establish the baseline pollution load.

The BAT limitations in 40 CFR 434.73 (relating to effluent limitations attainable by application of the best available technology economically achievable (BAT)) require a pollution abatement plan and compliance with the baseline pollution load for net acidity, iron and manganese.

The BCT limitations in 40 CFR 434.74 (relating to effluent limitations attainable by application of the best conventional pollutant control technology (BCT)) require a pollution abatement plan and compliance with the baseline pollution load for total suspended solids.

The NSPS limitations in 40 CFR 434.75 (relating to new source performance standards (NSPS)) require a pollution abatement plan and compliance with the baseline pollution load for acidity, iron, manganese and total suspended solids.

##### *40 CFR Part 434, Appendix B*

Appendix B of 40 CFR Part 434 includes the statistical methods for establishing the baseline pollution load and determining compliance with the numerical effluent limitations. There are two methods (Method 1 and Method 2)

to establish the baseline provided in Appendix B. There are also two time frames to determine compliance, one on a monthly basis (single-observation) and the second on an annual basis. The thresholds to determine compliance are referred to as triggers.

Method 1 for the single-observation trigger uses a statistical method that determines the tolerance interval of the 95th percentile above the median and compares that value with the sample being evaluated. Method 2 for the single-observation trigger is a nonparametric estimate of the 99th percentile of loadings. Method 1 for the annual trigger compares the baseline with 1 year's monitoring data for loading using the 95th percentile confidence interval for the median of each data set. Method 2 for the annual trigger uses the Wilcoxon-Mann-Whitney test to compare the baseline and monitoring year being evaluated. The Wilcoxon-Mann-Whitney test is a ranking test.

When the single-observation trigger is exceeded in 2 consecutive months, accelerated monitoring (weekly, for 4 weeks) is required. If the accelerated sampling confirms the exceedance, then treatment of the discharge is required. If the accelerated sampling does not confirm the exceedance, then the sampling may revert to a monthly basis.

When the annual trigger is exceeded, treatment of the discharge is required.

#### *Project XL*

In April 2000, the United States Environmental Protection Agency (EPA), Region III and the Department entered into an agreement under the EPA's Project XL program which allowed for a modified approach to remining permits. Under this program, the water quality performance for eight pilot study remining sites was evaluated based on stream water quality rather than discharge pollutant loading. Under Project XL, the basis for water quality evaluation was bimonthly receiving stream concentration data. The triggers were based on concentrations rather than loading.

The conclusion of the pilot study was that remining with in-stream monitoring was just as effective as the traditional discharge-based remining approach. Another conclusion was that the Project XL approach will encourage additional remining since it can be more cost-effective.

This final-form rulemaking deviates from the Federal regulations by requiring, in appropriate circumstances, in-stream baseline determinations and monitoring.

#### *Current Pennsylvania remining program*

The existing remining program in this Commonwealth is implemented through Chapter 87, Subchapter F, Chapter 88, Subchapter G and Chapter 90, Subchapter F, technical guidance documents and individual permit documents. Effluent limitations are determined on a case-by-case basis using best professional judgment.

Monitoring requirements and the pollution baseline are specified in each permit. The statistical method used is the same as Method 1 in 40 CFR Part 434, Appendix B, including the single-observation and the annual triggers.

The existing remining regulations require an applicant to continue the water quality and quantity monitoring program after submitting the permit application, at least until the permitting decision is made. The proposed rulemaking included a change to this approach making the sampling optional rather than mandatory. The Inde-

pendent Regulatory Review Commission (IRRC) observed that the preamble of the proposed rulemaking did not explain this sufficiently.

During the development of the proposed rulemaking, the fact that the post-submission monitoring is not required under the Federal regulations presented the Department with the opportunity to re-evaluate the need for the additional data. Since an application is required to have sufficient data to establish the baseline and that this baseline is enforceable, it was concluded that it is no longer necessary to require this post-submission data. This issue was raised with the Mining and Reclamation Advisory Board's (MRAB) Regulation, Legislation and Technical Committee. Their recommendation was to allow for, but not require, the additional data collection. As an alternative to the requirement in the proposed rulemaking, the elimination of any reference to the continuation of sampling (to be exactly consistent with the Federal requirements) was considered. This was dismissed because in many cases (for example, when there is a large time delay or where other influences on the water quality have occurred) it may make sense to recalculate the baseline after the permit has been submitted, but before any mining occurs. This final-form rulemaking allows flexibility, letting the applicant decide whether to spend money on additional sampling.

#### *MRAB collaboration*

The Department collaborated with the MRAB's Regulation, Legislation and Technical Committee to develop the proposed rulemaking. At its October 23, 2014, meeting, the MRAB voted for the proposed rulemaking to move forward in the regulatory process. This final-form rulemaking was reviewed by the MRAB at its January 21, 2016, meeting. The MRAB recommended that the Board proceed as quickly as possible with this final-form rulemaking.

#### *E. Summary of Changes to the Proposed Rulemaking*

##### *§§ 87.210(d)(1), 88.510(d)(1) and 90.310(d)(1). Effluent limitations*

The Board revised these paragraphs to include reference to subsection (d)(4). In addition, these paragraphs have been revised to specify that "the permit applicant shall establish an in-stream baseline concentration at a suitable point downstream from the remining operation, unless the Department waives the sampling requirement under paragraph (5) and the numeric effluent limitations in subsection (c)(1) do not apply."

##### *§ 87.212(b)(4). Procedure for calculating and applying a single-observation (monthly) trigger*

A commentator pointed out that in § 87.212(b)(4) (relating to procedure for calculating and applying a single-observation (monthly) trigger) the subscript to the term "x" in the statement "If n is odd, then M equals x" was omitted. The Board added the correct subscript in this final-form rulemaking to properly identify the value of M if n is odd.

##### *§§ 87.213(c)(7)(ii), 88.513(c)(7)(ii) and 90.313(c)(7)(ii). Procedure for calculating and applying an annual trigger*

IRRC commented that in §§ 87.213, 88.513 and 90.313 (relating to procedure for calculating and applying an annual trigger) the calculations did not match the Federal regulations. Specifically, subsection (c)(7)(ii) includes a capital "M" rather than a lower case "m." In response, the Board corrected the "M" in subsection (c)(7)(ii) to be "m."



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

Comments were received from one public commentator and from IRRRC.

The public comment related to § 87.212(b)(4). It points out that the subscript to the term “x” in the statement “If n is odd, then M equals x” was omitted. In response, the Board added the correct subscript to properly identify the value of M if n is odd.

IRRC indicated that the Regulatory Analysis Form (RAF) was incomplete because there was no response to question 23. The Board corrected this omission in the final-form rulemaking package.

IRRC also indicated that the RAF should have referenced §§ 88.510 and 90.310 (relating to effluent limitations) in the response to question 11. The Board corrected this omission in the final-form rulemaking package.

IRRC noted that further explanation was needed to clarify the need for the amendment to § 87.204(b) (relating to application for authorization) regarding the continuation of sampling after the baseline is established. In the former regulation, the continuation of sampling was mandatory; it is optional in this final-form rulemaking. This amendment also applies to §§ 88.504 and 90.304 (relating to application for authorization). In response, the Board provides the following rationale, in addition to a response to the questions on the RAF: the Federal regulations do not require the continuation of sampling; the established baseline is enforceable without any additional data; a cost could be incurred by operators for unnecessary data collection; and the MRAB recommended the change. Further explanation has been provided that the alternative to the requirement in the proposed rulemaking was the elimination of any reference to the continuation of sampling to be consistent with the Federal requirements.

IRRC commented that § 87.210 (relating to effluent limitations) and §§ 88.510 and 90.310 are ambiguous because the reference in subsection (d)(1) includes the phrases “establishing the baseline pollutant levels under this subsection” and “the permit applicant may establish an in-stream baseline concentration.” In response the Board revised the wording to include reference to subsection (d)(4). In addition these subsections have been revised to specify that “the permit applicant shall establish an in-stream baseline concentration at a suitable point downstream from the remining operation, unless the Department waives the sampling requirement under paragraph (5) and the numeric effluent limitations in subsection (c)(1) do not apply.”

IRRC further commented that §§ 87.213, 88.513 and 90.313 include calculations from the Federal regulations but do not match the Federal regulations. Specifically, the calculations in subsections (b)(4) and (6) and (c)(7)(iii) are missing additional sets of parentheses and subsection (c)(7)(ii) includes a capital “M” rather than a small “m.” In response, the Board corrected the “M” in subsection (c)(7)(ii) to be “m.” The additional parentheses are not needed due to the rules on order of operations for arithmetic. The Board concluded that including unnecessary parentheses would result in less clarity and more ambiguity. Therefore, this final-form rulemaking does not

revise the calculations to exactly match the Federal calculations. However, the calculations in this final-form rulemaking provide the same results as the Federal calculations.

#### G. *Benefits, Costs and Compliance*

##### *Benefits*

This final-form rulemaking will allow for additional reclamation of abandoned mine lands by providing protection to mine operators from long-term treatment liability. The amendments that allow for remining in circumstances in which calculating the baseline pollution load of discharges is not feasible have the potential to open up areas to remining where it was not previously possible. Remining typically results in substantial improvements in water quality.

##### *Compliance costs*

The primary compliance costs are related to water sampling and analysis and implementation of BMPs for the abatement of abandoned mine drainage. However, these costs are part of the planning process for a mine operator when they decide if an area is economically mineable. Overall, compliance costs for a mine operator are reduced since this final-form rulemaking will provide for protection from long-term treatment liability.

##### *Compliance assistance plan*

Compliance assistance for this final-form rulemaking will be provided through the Department’s routine interaction with trade groups and individual applicants. There are about 500 licensed surface coal mining operators in this Commonwealth, most of which are small businesses that will be subject to the regulations.

##### *Paperwork requirements*

This final-form rulemaking requires additional information as part of a permit application in the form of a robust pollution abatement plan. Current applicants for remining are required to provide an abatement plan with a remining application. The additional requirements are more focused and may make it simpler to provide the required plans.

#### H. *Pollution Prevention*

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

##### *I. Sunset Review*

These regulations will be reviewed in accordance with the sunset review schedule published by the Department to determine whether the regulations effectively fulfill the goals for which they were intended.

##### *J. Regulatory Review*

Under section 5(a) of the Regulatory Review Act (71 P.S. § 745.5(a)), on September 23, 2015, the Department submitted a copy of the notice of proposed rulemaking, published at 45 Pa.B. 5920 (October 3, 2015), to IRRRC

and the House and Senate Environmental Resources and Energy Committees for review and comment.

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

Under section 5.1(j.2) of the Regulatory Review Act (71 P.S. § 745.5a(j.2)), on August 17, 2016, this final-form rulemaking was deemed approved by the House and Senate Committees. Under section 5.1(e) of the Regulatory Review Act, IRRC met on August 18, 2016, and approved this final-form rulemaking.

#### K. Findings

The Board finds that:

(1) Public notice of proposed rulemaking was given under sections 201 and 202 of the act of July 31, 1968 (P.L. 769, No. 240) (45 P.S. §§ 1201 and 1202) and regulations promulgated thereunder, 1 Pa. Code §§ 7.1 and 7.2.

(2) A public comment period was provided as required by law, and all comments were considered.

(3) These regulations do not enlarge the purpose of the proposed rulemaking published 45 Pa.B. 5920.

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

#### L. Order

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

(1) The regulations of the Department, 25 Pa. Code Chapters 87, 88 and 90, are amended by adding §§ 87.210—87.213, 88.510—88.513 and 90.310—90.313 and amending §§ 87.202—87.207, 87.209, 88.502—88.507, 88.509, 90.302—90.307 and 90.309 to read as set forth in Annex A.

(2) The Chairperson of the Board shall submit this order and Annex A to the Office of General Counsel and the Office of Attorney General for review and approval as to legality and form, as required by law.

(3) The Chairperson shall submit this order and Annex A to IRRC and the Senate and House Committees as required by the Regulatory Review Act (71 P.S. §§ 745.1—745.14).

(4) The Chairperson of the Board shall certify this order and Annex A and deposit them with the Legislative Reference Bureau, as required by law.

(5) This order shall take effect immediately.

PATRICK McDONNELL,  
Acting Chairperson

(*Editor's Note:* See 46 Pa.B. 5790 (September 3, 2016) for IRRC's approval order.)

**Fiscal Note:** Fiscal Note 7-496 remains valid for the final adoption of the subject regulations.

## Annex A

### TITLE 25. ENVIRONMENTAL PROTECTION PART I. DEPARTMENT OF ENVIRONMENTAL PROTECTION

#### Subpart C. PROTECTION OF NATURAL RESOURCES

#### ARTICLE I. LAND RESOURCES

#### CHAPTER 87. SURFACE MINING OF COAL

#### Subchapter F. SURFACE COAL MINES: MINIMUM REQUIREMENTS FOR REMINING AREAS WITH POLLUTIONAL DISCHARGES

#### § 87.202. Definitions.

The following words and terms, when used in this subchapter, have the following meanings, unless the context clearly indicates otherwise:

*Actual improvement*—The reduction of the baseline pollution load resulting from the implementation of the approved pollution abatement plan; except that a reduction of the baseline pollution load achieved by water treatment may not be considered as actual improvement.

*Baseline pollution load*—The characterization of the pollution material being discharged from or on the pollution abatement area, described in terms of mass discharge for each parameter, including seasonal variations and variations in response to precipitation events. The Department will establish in each authorization the specific parameters, including, at a minimum, iron and acid loadings, it deems relevant for the baseline pollution load.

*Best professional judgment*—The highest quality technical opinion forming the basis for the terms and conditions of the treatment level required after consideration of all reasonably available and pertinent data. The treatment levels shall be established by the Department under sections 301 and 402 of the Federal Clean Water Act (33 U.S.C.A. §§ 1311 and 1342).

*Best technology*—Measures and practices which will abate or ameliorate to the maximum extent possible pollutional discharges from or on the pollution abatement area. These measures include engineering, geochemical or other applicable practices.

*Coal remining operation*—A coal mining operation at a site on which coal mining was previously conducted and where the site has been abandoned or the performance bond has been forfeited.

*Encountered discharge*—

(i) A pre-existing discharge intercepted in the course of active surface mining activities, including, but not limited to, overburden removal, coal extraction and backfilling, or that occurs in the pit, any mining-related conveyance, sedimentation pond or treatment pond.

(ii) The term does not include diversions of surface water and shallow groundwater flow from areas undisturbed by the implementation of the pollution abatement plan which would otherwise drain into the affected area so long as they are designed, operated and maintained in accordance with § 87.105(b)—(g) (relating to hydrologic balance: diversions).

*Pollution abatement area*—The part of the permit area which is causing or contributing to the baseline pollution load, which shall include adjacent and nearby areas that must be affected to bring about significant improvement of the baseline pollution load, and which may include the immediate location of the discharges.

*Pollution abatement plan*—Best management practices (BMP), including, but not limited to, the addition of alkaline material, special handling plans for managing toxic and acid forming material, regrading, revegetation and daylighting, that when implemented will result in reduction of the baseline pollution load.

*Pre-existing discharge*—

(i) Any discharge resulting from mining activities that have been abandoned prior to the time of a remining permit application.

(ii) The term includes a pre-existing discharge that is relocated as a result of the implementation BMPs in the pollution abatement plan.

*Steep slope*—

(i) Any slope, including abandoned mine land features, above 20 degrees or a lesser slope as may be defined by the Department after consideration of soil, climate and other characteristics of a region.

(ii) The term does not apply to situations in which an operator is mining on flat or gently rolling terrain, on which an occasional steep slope is encountered and through which the mining operation is to proceed, leaving a plain or predominantly flat area.

**§ 87.203. Applicability.**

(a) Authorization may not be granted under this subchapter unless the authorization is part of:

(1) A permit issued after March 8, 1986, but only if the authorization request is made during one of the following periods:

(i) At the time of the submittal of the permit application for the surface coal mining activities, including the proposed pollution abatement area.

(ii) Prior to a Department decision to issue or deny that permit.

(2) A permit revision under § 86.52 (relating to permit revisions), but only if the operator affirmatively demonstrates to the satisfaction of the Department that:

(i) The operator has discovered pollutional discharges within the permit area that came into existence after its permit application was approved.

(ii) The operator has not caused or contributed to the pollutional discharges.

(iii) The proposed pollution abatement area is not hydrologically connected to an area where surface mining activities have been conducted under the permit.

(iv) The operator has not affected the proposed pollution abatement area by surface mining activities.

(v) The Department has not granted a bonding authorization and mining approval for the area under § 86.37(b) (relating to criteria for permit approval or denial).

(b) Notwithstanding subsection (a), no authorization may be granted under this subchapter for repermitting under §§ 86.12 and 86.14 (relating to continued operation under interim permits; and permit application filing deadlines), permit renewals under § 86.55 (relating to permit renewals: general requirements) or permit transfers under § 86.56 (relating to transfer of permit).

(c) This subchapter applies to pre-existing discharges that are located within or are hydrologically connected to pollution abatement areas of a coal remining operation.

(d) When a coal remining operation seeks reissuance of an existing remining permit with best professional judgment

limitations and the Department determines that it is not feasible for a remining operator to re-establish baseline pollutant levels in accordance with the statistical procedures in this subchapter, pre-existing discharge limitations at the existing remining operation remain subject to baseline pollutant levels established during the original permit application.

**§ 87.204. Application for authorization.**

(a) An operator who requests authorization under this subchapter shall comply with the permit application requirements of Chapter 86 (relating to surface and underground coal mining: general) and Subchapters A and C—E, except as specifically modified by this subchapter. The operator shall also:

(1) Delineate on a map the proposed pollution abatement area, including the location of the pre-existing discharges.

(2) Provide a description of the hydrologic balance for the proposed pollution abatement area that includes:

(i) Results of a detailed water quality and quantity monitoring program, including seasonal variations, variations in response to precipitation events and modeled baseline pollution loads using this monitoring program.

(ii) Monitoring for flow, pH, alkalinity, acidity, total iron, total manganese, total aluminum, sulfates, total suspended solids and other water quality parameters the Department deems relevant.

(3) Provide a pollution abatement plan which must:

(i) Describe the pollution abatement area.

(ii) Be designed to reduce the pollution load from pre-existing discharges and identify the selected best management practices (BMP) to be used.

(iii) Describe the design specifications, construction specifications, maintenance schedules, criteria for monitoring and inspection, and expected performance of the BMPs.

(iv) Represent best technology and include:

(A) Plans, cross-sections and schematic drawings describing the pollution abatement plan proposed to be implemented.

(B) A description and explanation of the range of abatement level that probably can be achieved, costs and each step in the proposed pollution abatement plan.

(C) A description of the standard of success for revegetation necessary to insure success of the pollution abatement plan.

(v) Provide a description of and information on the pre-existing discharges hydrogeologically connected to the remining area.

(4) Determine the baseline pollution load.

(5) Provide the background data that are the bases for the baseline pollution load. The baseline pollution load shall be reported in pounds per day.

(b) The operator seeking this authorization may continue the water quality and quantity monitoring program required by subsection (a)(2) after making the authorization request. The operator may submit the results of this continuing monitoring program to the Department on a monthly basis until a decision on the authorization request is made.

**§ 87.205. Approval or denial.**

(a) Authorization may not be granted under this subchapter unless the operator seeking the authorization affirmatively demonstrates to the satisfaction of the Department on the basis of information set forth in the application that:

(1) Neither the operator, nor an officer, principal shareholder, agent, partner, associate, parent corporation, contractor or subcontractor, or a related party as defined in § 86.63(a)(1) (relating to compliance information) has either of the following:

(i) Legal responsibility or liability as an operator for treating the water pollution discharges from or on the proposed pollution abatement area.

(ii) Statutory responsibility or liability for reclaiming the proposed pollution abatement area.

(2) The proposed pollution abatement plan will result in significant reduction of the baseline pollution load and represents best technology.

(3) The land within the proposed pollution abatement area can be reclaimed.

(4) The surface mining operation on the proposed pollution abatement area will not cause additional groundwater degradation.

(5) The standard of success for revegetation will be achieved. The standard of success for revegetation shall be at a minimum:

(i) A ground cover of living plants not less than can be supported by the best available topsoil or other suitable material in the reaffected area.

(ii) A ground cover no less than that existing before disturbance of the area by mining activities.

(iii) Adequate vegetation to control erosion. Vegetation may be no less than that necessary to insure the success of the pollution abatement plan.

(6) The surface mining operation on permitted areas other than the proposed pollution abatement area will not cause surface water pollution or groundwater degradation.

(7) Requirements of § 86.37(a) (relating to criteria for permit approval or denial) that are not inconsistent with this section have been met.

(b) An authorization may be denied under this subchapter if granting the authorization will, or is likely to, affect a legal responsibility or liability under The Clean Streams Law (35 P.S. §§ 691.1—691.1001), the Surface Mining Conservation and Reclamation Act (52 P.S. §§ 1396.1—1396.19b), Chapter 86 (relating to surface and underground coal mining: general) or Subchapters A and C—E, for the proposed pollution abatement area or other areas or discharges in the vicinity of the proposed pollution abatement area.

(c) Authorization may not be granted under this subchapter unless there are one or more pre-existing discharges from or on the pollution abatement area.

(d) The authorization allowed under this subchapter is only for the pollution abatement area and does not apply to other areas of the permit.

**§ 87.206. Operational requirements.**

An operator who receives an authorization under this subchapter shall comply with the requirements of Chapter 86 (relating to surface and underground coal mining:

general) and Subchapters A and C—E except as specifically modified by this subchapter. The operator shall also:

(1) Implement the approved water quality and quantity monitoring program for the pollution abatement area until the requirements of § 87.209 (relating to criteria and schedule for release of bonds on pollution abatement areas) are met. The monitoring program must conform to the following:

(i) Sampling shall be conducted on a monthly basis for the pre-existing discharges and should adequately represent the seasonal range in loading rates as well as the median loading rate from each pre-existing discharge or combination of discharges.

(ii) Results shall be submitted on a quarterly basis.

(iii) Data must include the flow measurements and loading calculations.

(2) Implement the approved pollution abatement plan.

(3) Notify the Department when more frequent sampling is required.

(i) Weekly sampling of the pre-existing discharges shall begin if any two consecutive monthly samples of pollution load at any of the monitoring points or hydrologic units exceed one or more of the triggers established by the baseline data.

(ii) Weekly sampling requirements shall continue until two consecutive weekly sample analyses indicate that all parameters which triggered weekly sampling have dropped below the trigger established by the baseline data.

**§ 87.207. Treatment of discharges.**

(a) Except for pre-existing discharges which are not encountered during mining or the implementation of the pollution abatement plan, the operator shall comply with § 87.102 (relating to hydrologic balance: effluent standards).

(b) Except as provided in § 87.210(d) (relating to effluent limitations), the operator shall treat the pre-existing discharges which are not encountered during mining or implementation of the pollution abatement plan to comply with the effluent limitations established by best professional judgment. The effluent limitations established by best professional judgment may not be less than the baseline pollution load. If the baseline pollution load, when expressed as a concentration for a specific parameter, satisfies the effluent limitations at § 87.102 for that parameter, the operator shall treat the pre-existing discharge for that parameter to comply with either effluent limitations established by best professional judgment or the effluent limitations at § 87.102.

(c) For purposes of subsections (a) and (b), the term encountered may not be construed to mean diversions of surface water and shallow groundwater flow from areas undisturbed by the implementation of the pollution abatement plan which would otherwise drain into the affected area, so long as the diversions are designed, operated and maintained under § 87.105(b)—(g) (relating to hydrologic balance: diversions).

(d) An operator required to treat pre-existing discharges will be allowed to discontinue treating the discharges under subsection (b) when the operator affirmatively demonstrates to the Department's satisfaction that:

(1) The pre-existing discharges are meeting the effluent limitations established by subsection (b) as shown by

groundwater and surface water monitoring conducted by the operator or the Department.

(2) Surface coal mining activities under the permit—including the pollution abatement area—are being or were conducted under the requirements of the permit and the authorization, and Chapter 86 (relating to surface and underground coal mining: general) and this chapter except as specifically modified by this subchapter.

(3) The operator has implemented each step of the pollution abatement plan as approved in the authorization.

(4) The operator did not cause or allow additional groundwater degradation by re-affecting the pollution abatement area.

(e) If after discontinuance of treatment of discharges under subsection (d) the discharges fail to meet the effluent limitations established by subsection (b), the operator shall reinstitute treatment of the discharges under subsection (b). An operator who reinstates treatment under this subsection will be allowed to discontinue treatment if the requirements of subsection (d) are met.

(f) Discontinuance of treatment under subsection (d) may not be deemed or construed to be or to authorize a release of bond under § 87.209 (relating to criteria and schedule for release of bonds on pollution abatement areas).

(g) If four consecutive weekly determinations of pollution load, as required under § 87.206(3)(i) (relating to operational requirements), exceed one or more triggers, the permittee shall notify the Department and begin treatment within 30 days of the fourth sample in accordance with the treatment limits established in the permit.

(h) If the Department determines, through analysis of any data submitted pursuant to the monitoring requirements or any data collected by the Department, that there has been pollution loading degradation at any of the monitoring points or hydrologic units, the Department will notify the permittee accordingly. The permittee shall begin treatment within 30 days in accordance with the treatment limits established in the permit.

(i) Any pre-existing pollutorial discharge which is an encountered discharge shall be treated to the effluent limitations in the permit until the discharge is no longer encountered.

(j) For the purposes of determining applicable effluent limitations, a discharge will continue to be deemed to be an encountered discharge until the surface mining area which has been disturbed and which contributes to the discharge has been backfilled and regraded, and revegetation work has started.

**§ 87.209. Criteria and schedule for release of bonds on pollution abatement areas.**

(a) The Department will release up to 60% of the amount of bond for the authorized pollution abatement area if the applicant demonstrates and the Department finds that:

(1) The surface coal mining activities were conducted on the permit area, including the pollution abatement area, under the requirements of the permit and the authorization, Chapter 86 (relating to surface and underground coal mining: general) and this chapter except as specifically modified by this subchapter.

(2) The operator has satisfactorily completed backfilling, regrading and drainage control under the approved reclamation plan.

(3) The operator has properly implemented each step of the pollution abatement plan approved and authorized under this subchapter.

(4) The operator has not caused degradation of the baseline pollution load at any time during the 6 months prior to the submittal of the request for bond release under this subsection and until the bond release is approved as shown by all ground and surface water monitoring conducted by the permittee under § 87.206(1) (relating to operational requirements) or conducted by the Department.

(5) The operator has not caused or contributed to surface water pollution or groundwater degradation by re-affecting or mining the pollution abatement area.

(b) The Department will release an additional amount of bond for the authorized pollution abatement area but retain an amount sufficient to cover the cost to the Department of re-establishing vegetation if completed by a third party if the operator demonstrates and the Department finds that:

(1) The operator has replaced the topsoil or material conserved under § 87.97(d) (relating to topsoil: removal), completed final grading, planting and established revegetation under the approved reclamation plan and achieved the standards of success for revegetation in § 87.205(a)(5) (relating to approval or denial).

(2) The operator has not caused or contributed to surface water pollution or groundwater degradation by re-affecting or mining the pollution abatement area.

(3) The operator has complied with one of the following:

(i) Achieved the actual improvement of the baseline pollution load described in the approved pollution abatement plan and shown by ground and surface water monitoring conducted by the permittee for the time provided in the pollution abatement plan after completion of backfilling, final grading, drainage control, topsoiling and establishment of revegetation to achieve the standard of success for revegetation in § 87.205(a)(5).

(ii) Achieved the following:

(A) At a minimum has not caused degradation of the baseline pollution load as shown by ground and surface water monitoring conducted by the operator or the Department for one of the following:

(I) For the 12 months prior to the date of application for bond release and until the bond release is approved under subsection (b), if backfilling, final grading, drainage control, topsoiling and establishment of revegetation to achieve the standard of success for revegetation in § 87.205(a)(5) have been completed.

(II) If treatment has been initiated at any time after initial bond release under subsection (a) and § 87.207(e) (relating to treatment of discharges), for 12 months from the discontinuance of treatment under § 87.207(d), if backfilling, final grading, drainage control, topsoiling and establishment of revegetation to achieve the standard of success for revegetation in § 87.205(a)(5) have been completed.

(B) Conducted the measures provided in the approved pollution abatement plan and additional measures specified by the Department in writing at the time of initial bond release under subsection (a) for the area requested for bond release.

(C) Caused aesthetic or other environmental improvements or the elimination of public health and safety problems by remining and re-affecting the pollution abatement area.

(D) Stabilized the pollution abatement area.

(c) The Department will release the remaining portion of the amount of bond on the authorized pollution abatement area if the applicant demonstrates and the Department finds that:

(1) The operator has successfully completed the approved pollution abatement and reclamation plans, and the pollution abatement area is capable of supporting the postmining land use approved under § 87.159 (relating to postmining land use).

(2) The operator has complied with the permit and the authorization, Chapter 86 and this chapter, except as specifically modified by this subchapter.

(3) The operator has not caused degradation of the baseline pollution load from the time of bond release under subsection (b) or, if treatment has been initiated after bond release under subsection (b) in accordance with § 87.207(e) for 5 years from the discontinuance of treatment under § 87.207(d).

(4) The applicable liability period has expired under § 86.151 (relating to period of liability).

#### § 87.210. Effluent limitations.

(a) *Approval and incorporation into permit.* The pollution abatement plan for the pollution abatement area must be approved by the Department and incorporated into the permit as an effluent limitation.

(b) *Implementation of best management practices.* The best management practices (BMP) in the pollution abatement plan shall be implemented as specified in the plan.

(c) *Pre-existing discharges.*

(1) Except as provided in subsection (d), the following effluent limits apply to pre-existing discharges:

<i>Parameter</i>	<i>Effluent Limit</i>
Total Iron	May not exceed baseline loadings (as determined by this subchapter).
Total Manganese	May not exceed baseline loadings (as determined by this subchapter).
Acidity, Net	May not exceed baseline loadings (as determined by this subchapter).
Suspended Solids	During remining and reclamation, may not exceed baseline loadings (as determined by this subchapter). Prior to bond release, the pre-existing discharge must meet the applicable standards for suspended solids or settleable solids in § 87.102 (relating to hydrologic balance: effluent standards).

(2) A pre-existing discharge is exempt from meeting standards in § 87.102 for suspended solids and settleable solids when the Department determines that the standards are infeasible or impractical based on the site-specific conditions of soil, climate, topography, steep slopes or other baseline conditions provided that the operator demonstrates that significant reductions of sus-

pending solids and settleable solids will be achieved through the incorporation of sediment control BMPs into the pollution abatement plan as required under subsection (a).

(d) *In-stream requirements.*

(1) If the Department determines that it is infeasible to collect samples for establishing the baseline pollutant levels under paragraph (4) and that remining will result in significant improvement that would not otherwise occur, the permit applicant shall establish an in-stream baseline concentration at a suitable point downstream from the remining operation, unless the Department waives the sampling requirement under paragraph (5) and the numeric effluent limitations in subsection (c)(1) do not apply.

(2) The in-stream baseline period must include, at a minimum, twice monthly monitoring for a minimum of a 1-year period and must adequately represent the seasonal range and median pollutant concentrations.

(3) Upon issuance of a surface mining permit, the operator shall continue, at a minimum, monthly monitoring of pollutant concentrations at the in-stream monitoring point referenced in paragraph (1), and make a determination as to whether or not there has been degradation of in-stream water quality.

(i) This determination shall be made on a quarterly basis and for each year defined as each consecutive 12-month period.

(ii) The operator is not required to treat individual pre-existing sources of pollution except as may be needed to maintain the in-stream baseline concentration.

(iii) Unless the operator can demonstrate to the satisfaction of the Department that the degradation was the result of factors that are not related to the remining, the operator shall treat one or more pre-existing pollutional discharges or undertake other pollution abatement measures to restore or improve the in-stream pollutant concentration to its baseline conditions.

(4) Pre-existing discharges for which it is infeasible to collect samples for determination of baseline pollutant levels include, but are not limited to:

(i) Discharges that exist as a diffuse groundwater flow that cannot be assessed by the collection of samples.

(ii) A base flow to a receiving stream that cannot be monitored separate from the receiving stream.

(iii) A discharge on a steep or hazardous slope that is inaccessible for sample collection.

(iv) A number of pre-existing discharges so extensive that monitoring of individual discharges is infeasible.

(5) When in-stream monitoring is not indicative of the impact of remining, the in-stream monitoring requirement may be waived by the Department. In-stream monitoring is not indicative of the impact of remining in circumstances including, but not limited to, the following:

(i) Remining sites in drainage areas exceeding 10 square miles.

(ii) Remining sites in watersheds where there are other influences on the in-stream water quality that make it impossible to establish the cause of water quality changes.

(iii) Remining sites where the  $Q_{7-10}$  stream flow is zero.

(e) *Limits.* Pollutants for which there are not effluent limitations established in § 87.102 may be eligible for limits established under this subchapter.

(f) *Applicability of standards.* Section 87.102 applies to a pre-existing discharge that is:

- (1) Intercepted by surface mining activities.
- (2) Commingled with waste streams from operational areas for the purposes of water treatment.

(g) *Cessation of applicability of standards.* Section 87.102 does not apply to a pre-existing discharge described in subsection (f) when the pre-existing discharge is no longer intercepted by surface mining activities or is no longer commingled with waste streams from operational areas for the purposes of water treatment.

(h) *Bond release.* The effluent limitations in this subchapter apply to pre-existing discharges until bond release under the procedures in Chapter 86 (relating to surface and underground coal mining: general).

**§ 87.211. Baseline determination and compliance monitoring for pre-existing discharges at remining operations.**

(a) The procedures in this section shall be used for determining site-specific baseline pollutant loadings, and for determining whether discharge loadings during coal remining operations have exceeded the baseline loading. A monthly (single-observation) procedure and an annual procedure shall be applied.

(b) At least one sample result per month shall be obtained for 12 months to characterize pollutant loadings for:

- (1) Baseline determination.
- (2) Each annual monitoring period. It is required that at least one sample be obtained per month for 12 months.

(c) Calculations described in this subchapter shall be applied to pollutant loadings.

(d) Each loading value shall be calculated as the product of a flow measurement and pollutant concentration taken on the same date at the same discharge sampling point using standard units of flow and concentration.

(e) If the baseline concentration in a baseline sample is below the daily maximum effluent limits established in § 87.102 (relating to hydrologic balance: effluent standards), the baseline sample concentration may be replaced with daily maximum effluent limit for the purposes of some of the statistical calculations in this subchapter.

(f) The substituted values should be used for all methods in this subchapter except for:

(1) The calculation of the interquartile range (R) in Method 1 for the annual trigger (Step 3).

(2) Method 2 for the single observation trigger (Step 3).

(g) The interquartile range (R) is calculated as the difference between the quartiles  $M_{-1}$  and  $M_1$ ; the values for quartiles  $M_{-1}$  and  $M_1$  should be calculated using actual loadings (based on measured concentrations) when they are used to calculate the interquartile range (R).

**§ 87.212. Procedure for calculating and applying a single-observation (monthly) trigger.**

(a) This section contains two alternative methods for calculating a single-observation trigger. One method must

be proposed by the applicant to be approved and applied by the Department for a remining permit.

(b) Method 1 for calculating a single observation trigger (L) is accomplished by completing the following steps:

(1) Count the number of baseline observations taken for the pollutant of interest. Label this number  $n$ . To sufficiently characterize pollutant loadings during baseline determination and during each annual monitoring period, it is required that at least one sample result be obtained per month for 12 months.

(2) Order all baseline loading observations from lowest to highest. Let the lowest number (minimum) be  $x_{(1)}$ , the next lowest be  $x_{(2)}$ , and so forth until the highest number (maximum) is  $x_{(n)}$ .

(3) If fewer than 17 baseline observations were obtained, the single observation trigger (L) will equal the maximum of the baseline observations ( $x_{(n)}$ ).

(4) If at least 17 baseline observations were obtained, calculate the median (M) of all baseline observations. If  $n$  is odd, then M equals  $x_{(n/2+1/2)}$ . If  $n$  is even, then M equals  $0.5 * (x_{(n/2)} + x_{(n/2+1)})$ .

(5) Next, calculate  $M_1$  as the median of the subset of observations that range from the calculated M to the maximum  $x_{(n)}$ ; that is, calculate the median of all  $x$  larger than or equal to M.

(6) Next, calculate  $M_2$  as the median of the subset of observations that range from the calculated  $M_1$  to  $x_{(n)}$ ; that is, calculate the median of all  $x$  larger than or equal to  $M_1$ .

(7) Next, calculate  $M_3$  as the median of the subset of observations that range from the calculated  $M_2$  to  $x_{(n)}$ ; that is, calculate the median of all  $x$  larger than or equal to  $M_2$ .

(8) Finally, calculate the single observation trigger (L) as the median of the subset of observations that range from the calculated  $M_3$  to  $x_{(n)}$ .

(9) When subsetting the data for each of the steps in paragraphs (5)–(8), the subset should include all observations greater than or equal to the median calculated in the previous step. If the median calculated in the previous step is not an actual observation, it is not included in the new subset of observations. The new median value will then be calculated using the median procedure, based on whether the number of points in the subset is odd or even.

(c) The method for applying the single observation trigger (L) to determine when the baseline level has been exceeded is as follows:

(1) If two successive monthly monitoring observations both exceed L, immediately begin weekly monitoring for 4 weeks (four weekly samples).

(2) If three or fewer of the weekly observations exceed L, resume monthly monitoring.

(3) If all four weekly observations exceed L, the baseline pollution loading has been exceeded.

(d) Method 2 for calculating a single observation trigger (L) is accomplished by completing the following steps:

(1) Follow Method 1 in subsection (b) to obtain  $M_1$  (the third quartile, that is, the 75th percentile).

(2) Calculate  $M_{-1}$  as the median of the baseline data which are less than or equal to the sample median M.

(3) Calculate interquartile range,  $R = (M_1 - M_{-1})$ .

(4) Calculate the single observation trigger L as  $L = M_1 + 3 * R$ .

(5) If two successive monthly monitoring observations both exceed L, immediately begin weekly monitoring for 4 weeks (four weekly samples).

(6) If three or fewer of the weekly observations exceed L, resume monthly monitoring.

(7) If all four weekly observations exceed L, the baseline pollution loading has been exceeded.

**§ 87.213. Procedure for calculating and applying an annual trigger.**

(a) This section contains two alternative methods for calculating the annual trigger. One method shall be proposed by the applicant to be approved and applied by the Department for a reminging permit.

(b) Method 1 for calculating and applying an annual trigger (T) is accomplished by completing the following steps:

(1) Calculate M and  $M_1$  of the baseline loading data as described under Method 1 for the single observation trigger in § 87.212(b) (relating to procedure for calculating and applying a single-observation (monthly) trigger).

(2) Calculate  $M_1$  as the median of the baseline data which are less than or equal to the sample median M.

(3) Calculate the interquartile range,  $R = (M_1 - M_{-1})$ .

(4) The annual trigger for baseline ( $T_b$ ) is calculated as  $T_b = M + (1.815 * R) / \text{SQRT}(n)$

where n is the number of baseline loading observations.

(5) To compare baseline loading data to observations from the annual monitoring period, repeat the steps in paragraphs (1)–(3) for the set of monitoring observations. Label the results of the calculations M' and R'. Let m be the number of monitoring observations.

(6) The subtle trigger ( $T_m$ ) of the monitoring data is calculated as

$$T_m = M' * (1.815 * R') / \text{SQRT}(m)$$

(7) If  $T_m > T_b$ , the median loading of the monitoring observations has exceeded the baseline loading.

(c) Method 2 for calculating and applying an annual trigger (T) is accomplished by completing the following steps:

(1) Let n be the number of baseline loading observations taken, and let m be the number of monitoring loading observations taken. To sufficiently characterize pollutant loadings during baseline determination and during each annual monitoring period, it is required that at least one sample result be obtained per month for a period of 12 months.

(2) Order the combined baseline and monitoring observations from smallest to largest.

(3) Assign a rank to each observation based on the assigned order: the smallest observation will have rank 1, the next smallest will have rank 2 and so forth, up to the highest observation, which will have rank n + m. If two or more observations are tied (have the same value), then the average rank for those observations should be used.

(4) Sum all the assigned ranks of the n baseline observations, and let this sum be  $S_n$ .

(5) Obtain the critical value (C) from Table 1.

(6) Compare C to  $S_n$ . If  $S_n$  is less than C, then the monitoring loadings have exceeded the baseline loadings.

(7) Critical values for the Wilcoxon-Mann-Whitney test are as follows:

(i) When n and m are less than 21, use Table 1. To find the appropriate critical value, match column with correct n (number of baseline observations) to row with correct m (number of monitoring observations).

Table 1—Critical Values (C) of the Wilcoxon-Mann-Whitney Test (for a one-sided test at the 0.001 significance level)

n \ m	10	11	12	13	14	15	16	17	18	19	20
10	66	79	93	109	125	142	160	179	199	220	243
11	68	82	96	112	128	145	164	183	204	225	248
12	70	84	99	115	131	149	168	188	209	231	253
13	73	87	102	118	135	153	172	192	214	236	259
14	75	89	104	121	138	157	176	197	218	241	265
15	77	91	107	124	142	161	180	201	223	246	270
16	79	94	110	127	145	164	185	206	228	251	276
17	81	96	113	130	149	168	189	211	233	257	281
18	83	99	116	134	152	172	193	215	238	262	287
19	85	101	119	137	156	176	197	220	243	268	293
20	88	104	121	140	160	180	202	224	248	273	299

(ii) When n or m is greater than 20 and there are few ties, calculate an approximate critical value using the following formula and round the result to the next larger integer. Let N = n + m.

$$\text{Critical Value} = 0.5 * n * (N + 1) - 3.0902 * \text{SQRT}(n * m * (N + 1) / 12)$$

(iii) When n or m is greater than 20 and there are many ties, calculate an approximate critical value using

the following formula and round the result to the next larger integer. Let S be the sum of the squares of the ranks or average ranks of all N observations. Let N = n + m.

$$\text{Critical Value} = 0.5 * n * (N + 1) - 3.0902 * \text{SQRT}(V)$$

In the preceding formula, calculate V using:

$$V = (n * m * S) / (N * (N - 1) - (n * m * (N + 1)^2 / (4 * (N - 1)))$$



**CHAPTER 88. ANTHRACITE COAL**

**Subchapter G. ANTHRACITE SURFACE MINING ACTIVITIES AND ANTHRACITE BANK REMOVAL AND RECLAMATION ACTIVITIES: MINIMUM REQUIREMENTS FOR REMINING AREAS WITH POLLUTIONAL DISCHARGES**

**§ 88.502. Definitions.**

The following words and terms, when used in this subchapter, have the following meanings, unless the context clearly indicates otherwise:

*Actual improvement*—The reduction of the baseline pollution load resulting from the implementation of the approved pollution abatement plan, except that a reduction of the baseline pollution load achieved by water treatment may not be considered as actual improvement.

*Baseline pollution load*—The characterization of the pollutional material being discharged from or on the pollution abatement area, described in terms of mass discharge for each parameter, including seasonal variations and variations in response to precipitation events. The Department will establish in each authorization the specific parameters, including, at a minimum, iron and acid loadings, it deems relevant for the baseline pollution load.

*Best professional judgment*—The highest quality technical opinion forming the basis for the terms and conditions of the treatment level required after consideration of reasonably available and pertinent data. The treatment levels shall be established by the Department under sections 301 and 402 of the Federal Clean Water Act (33 U.S.C.A. §§ 1311 and 1342).

*Best technology*—Measures and practices which will abate or ameliorate to the maximum extent possible pollutional discharges from or on the pollution abatement area. These measures include engineering, geochemical or applicable practices.

*Coal remining operation*—A coal mining operation at a site on which coal mining was previously conducted and where the site has been abandoned or the performance bond has been forfeited.

*Encountered discharge*—

(i) A pre-existing discharge intercepted in the course of active surface mining activities, including, but not limited to, overburden removal, coal extraction and backfilling, or that occurs in the pit, any mining-related conveyance, sedimentation pond or treatment pond.

(ii) The term does not include diversions of surface water and shallow groundwater flow from areas undisturbed by the implementation of the pollution abatement plan which would otherwise drain into the affected area so long as they are designed, operated and maintained in accordance with § 88.95(b)—(g), § 88.190(b)—(g) or § 88.295(b)—(g) (relating to hydrologic balance: diversions; hydrologic balance: diversions; and hydrologic balance: diversions and conveyances), as applicable.

*Pollution abatement area*—The part of the permit area which is causing or contributing to the baseline pollution load, which shall include adjacent and nearby areas that must be affected to bring about significant improvement of the baseline pollution load, and which may include the immediate location of the discharges.

*Pollution abatement plan*—Best management practices (BMP), including, but not limited to, the addition of alkaline material, special handling plans for managing toxic and acid forming material, regrading, revegetation

and daylighting, that when implemented will result in reduction of the baseline pollution load.

*Pre-existing discharge*—

(i) Any discharge resulting from mining activities that have been abandoned prior to the time of a remining permit application.

(ii) The term includes a pre-existing discharge that is relocated as a result of the implementation BMPs in the pollution abatement plan.

*Steep slope*—

(i) Any slope, including abandoned mine land features, above 20 degrees or a lesser slope as may be defined by the Department after consideration of soil, climate and other characteristics of a region.

(ii) The term does not apply to situations in which an operator is mining on flat or gently rolling terrain, on which an occasional steep slope is encountered and through which the mining operation is to proceed, leaving a plain or predominantly flat area.

**§ 88.503. Applicability.**

(a) This subchapter is applicable only to surface mining activities and bank removal and reclamation activities as defined in § 88.1 (relating to definitions) and coal refuse disposal activities subject to Subchapter D (relating to anthracite refuse disposal: minimum environmental protection performance standards).

(b) No authorization may be granted under this subchapter unless the authorization is part of:

(1) A permit issued after March 8, 1986, but only if the authorization request is made during one of the following periods:

(i) At the time of the submittal of the permit application for surface mining activities or bank removal and reclamation activities, including the proposed pollution abatement area.

(ii) Prior to a Department decision to issue or deny the permit.

(2) A permit revision under § 86.52 (relating to permit revisions), but only if the operator affirmatively demonstrates to the satisfaction of the Department that:

(i) The operator has discovered pollutional discharges within the permit area that came into existence after its permit application was approved.

(ii) The operator has not caused or contributed to the pollutional discharges.

(iii) The proposed pollution abatement area is not hydrologically connected to an area where surface mining activities have been conducted under the permit.

(iv) The operator has not affected the proposed pollution abatement area by surface mining activities.

(v) The Department has not granted a bonding authorization and mining approval for the area under § 86.37(b) (relating to criteria for permit approval or denial).

(c) Notwithstanding subsection (a), no authorization may be granted under this subchapter for repermitting under §§ 86.12 and 86.14 (relating to continued operation under interim permits; and permit application filing deadlines), permit renewals under § 86.55 (relating to permit renewals: general requirements), or permit transfers under § 86.56 (relating to transfer of permit).

(d) This subchapter applies to pre-existing discharges that are located within or are hydrologically connected to pollution abatement areas of a coal remining operation.

(e) When a coal remining operation seeks reissuance of an existing remining permit with best professional judgment limitations and the Department determines that it is not feasible for a remining operator to re-establish baseline pollutant levels in accordance with the statistical procedures in this subchapter, pre-existing discharge limitations at the existing remining operation remain subject to baseline pollutant levels established during the original permit application.

**§ 88.504. Application for authorization.**

(a) An operator who requests authorization under this subchapter shall comply with the permit application requirements of Chapter 86 (relating to surface and underground coal mining: general) and Subchapter A (relating to general provisions) and either Subchapter B, C or D (relating to surface anthracite coal mines: minimum environmental protection performance standards; anthracite bank removal and reclamation: minimum environmental protection performance standards; and anthracite refuse disposal: minimum environmental protection performance standards), whichever is applicable, except as specifically modified by this subchapter. The operator shall also comply with all of the following:

(1) Delineate on a map the proposed pollution abatement area, including the location of the pre-existing discharges.

(2) Provide a description of the hydrologic balance for the proposed pollution abatement area that includes:

(i) Results of a detailed water quality and quantity monitoring program, including seasonal variations, variations in response to precipitation events, and modeled baseline pollution loads using this monitoring program.

(ii) Monitoring for flow, pH, alkalinity, acidity, total iron, total manganese, total aluminum, sulfates, total suspended solids and other water quality parameters the Department deems relevant.

(3) Provide a pollution abatement plan which must:

(i) Describe the pollution abatement area.

(ii) Be designed to reduce the pollution load from pre-existing discharges and must identify the selected best management practices (BMP) to be used.

(iii) Describe the design specifications, construction specifications, maintenance schedules, criteria for monitoring and inspection, and expected performance of the BMPs.

(iv) Represent the best technology and include:

(A) Plans, cross sections and schematic drawings describing the pollution abatement plan proposed to be implemented.

(B) A description and explanation of the range of abatement that probably can be achieved, costs and each step in the proposed pollution abatement plan.

(C) A description of the standard of success for revegetation necessary to insure success of the pollution abatement plan.

(v) Provide a description of and information on the pre-existing discharges hydrologically connected to the remining area.

(4) Determine the baseline pollution load.

(5) Provide the background data that are the bases for the baseline pollution load. The baseline pollution load shall be reported in pounds per day.

(b) The operator seeking this authorization may continue the water quality and quantity monitoring program required by subsection (a)(2) after making the authorization request. The operator may submit the results of this continuing monitoring program to the Department on a monthly basis until a decision on the authorization request is made.

**§ 88.505. Approval or denial.**

(a) Authorization may not be granted under this subchapter unless the operator seeking the authorization affirmatively demonstrates to the satisfaction of the Department on the basis of information set forth in the application that:

(1) Neither the operator, nor an officer, principal shareholder, agent, partner, associate, parent corporation, contractor or subcontractor, or a related party as defined in § 86.63(a)(1) (relating to compliance information) has either of the following:

(i) Legal responsibility or liability as an operator for treating the water pollution discharges from or on the proposed pollution abatement area.

(ii) Legal responsibility or liability for reclaiming the proposed pollution abatement area.

(2) The proposed pollution abatement plan will result in significant reduction of the baseline pollution load and represents best technology.

(3) The land within the proposed pollution abatement area can be reclaimed.

(4) The surface mining operation on the proposed pollution abatement area will not cause additional groundwater degradation.

(5) The standard of success for revegetation will be achieved. The standard of success for revegetation shall be at a minimum:

(i) A ground cover of living plants not less than can be supported by the best available topsoil or other suitable material in the reaffected area.

(ii) A ground cover no less than that existing before disturbance of the area by mining activities.

(iii) Adequate vegetation to control erosion. Vegetation may not be less than that necessary to insure the success of the pollution abatement plan.

(6) The surface mining operation on permitted areas other than the proposed pollution abatement area will not cause surface water pollution or groundwater degradation.

(7) All requirements of § 86.37(a) (relating to criteria for permit approval or denial) that are not inconsistent with this section have been met.

(b) An authorization may be denied under this subchapter if granting the authorization will, or is likely to, affect legal responsibility or liability under The Clean Streams Law (35 P.S. §§ 691.1—691.1001), the Surface Mining Conservation and Reclamation Act (52 P.S. §§ 1396.1—1396.19b), Chapter 86 (relating to surface and underground coal mining: general), Chapter 87, Subchapter B (Reserved) or Subchapters A—C (relating to general provisions; surface anthracite coal mines: minimum environmental protection performance standards; and anthracite bank removal and reclamation: minimum

environmental protection performance standards) for the proposed pollution abatement area or other areas or discharges in the vicinity of the proposed pollution abatement area.

(c) Authorization may not be granted under this subchapter unless there are one or more pre-existing discharges from or on the pollution abatement area.

(d) The authorization allowed under this subchapter is only for the pollution abatement area and does not apply to other areas of the permit.

**§ 88.506. Operational requirements.**

An operator who receives an authorization under this subchapter shall comply with the requirements of Chapter 86 (relating to surface and underground coal mining: general), and Subchapter A (relating to general provisions) and either Subchapter B, C or D (relating to surface anthracite coal mines: minimum environmental protection performance standards; anthracite bank removal and reclamation: minimum environmental protection performance standards; and anthracite refuse disposal: minimum environmental protection performance standards), whichever is applicable, except as specifically modified by this subchapter. The operator shall also:

(1) Implement the approved water quality and quantity monitoring program for the pollution abatement area until the requirements of § 88.509 (relating to criteria and schedule for release of bonds on pollution abatement areas) are met. The monitoring program must conform to the following:

(i) Sampling shall be conducted on a monthly basis for the pre-existing discharges and should adequately represent the seasonal range in loading rates as well as the median loading rate from each pre-existing discharge or combination of discharges.

(ii) Results shall be submitted on a quarterly basis.

(iii) Data must include the flow measurements and loading calculations.

(2) Implement the approved pollution abatement plan.

(3) Notify the Department when more frequent sampling is required.

(i) Weekly sampling of the pre-existing discharges shall begin if any two consecutive monthly samples of pollution load at any of the monitoring points or hydrologic units exceed one or more of the triggers established by the baseline data.

(ii) Weekly sampling requirements shall continue until two consecutive weekly sample analyses indicate that all parameters which triggered weekly sampling have dropped below the trigger established by the baseline data.

**§ 88.507. Treatment of discharges.**

(a) Except for pre-existing discharges which are not encountered during mining or the implementation of the pollution abatement plan, the operator shall comply with §§ 88.92, 88.187 and 88.292 (relating to hydrologic balance: effluent standards).

(b) Except as provided in § 88.510(d) (relating to effluent limitations), the operator shall treat the pre-existing discharges which are not encountered during mining or implementation of the pollution abatement plan to comply with the effluent limitations established by best professional judgment. The effluent limitations established by best professional judgment may not be less than the baseline pollution load. If the baseline pollution load

when expressed as a concentration for a specific parameter satisfies the effluent limitations at §§ 88.92, 88.187 and 88.292 for that parameter, the operator shall treat the pre-existing discharge for that parameter to comply with effluent limitations established by best professional judgment or the effluent limitations at §§ 88.92, 88.187 and 88.292.

(c) For purposes of subsections (a) and (b), the term “encountered” may not be construed to mean diversions of surface water and shallow groundwater flow from areas undisturbed by the implementation of the pollution abatement plan which would otherwise drain into the affected area, so long as the diversions are designed, operated and maintained under §§ 88.95(b), 88.190(b) and 88.295(b) (relating to hydrologic balance: diversions; hydrologic balance: diversions; and hydrologic balance: diversions and conveyances).

(d) An operator required to treat pre-existing discharges will be allowed to discontinue treating the discharges under this section when the operator affirmatively demonstrates to the Department’s satisfaction that:

(1) The pre-existing discharges are meeting the effluent limitations established by subsection (b) as shown by groundwater and surface water monitoring conducted by the operator or the Department.

(2) Surface coal mining activities under the permit—including the pollution abatement area—are being or were conducted in accordance with the requirements of the permit and the authorization, Chapter 86 (relating to surface and underground coal mining: general) and this chapter, except as specifically modified by this subchapter.

(3) The operator has implemented each step of the pollution abatement plan as approved in the authorization.

(4) The operator did not cause or allow additional groundwater degradation by re-affecting the pollution abatement area.

(e) If after discontinuance of treatment of discharges under subsection (d) the discharges fail to meet the effluent limitations established by subsection (b), the operator shall reinstitute treatment of the discharges in accordance with subsection (b). An operator who reinstates treatment under this subsection will be allowed to discontinue treatment if the requirements of subsection (d) are met.

(f) Discontinuance of treatment under subsection (d) may not be deemed or construed to be or to authorize a release of bond under § 88.509 (relating to criteria and schedule for release of bonds on pollution abatement areas).

(g) If four consecutive weekly determinations of pollution load, as required under § 88.506(3)(i) (relating to operational requirements), exceed one or more triggers, the permittee shall notify the Department and begin treatment within 30 days of the fourth sample in accordance with the treatment limits established in the permit.

(h) If the Department determines, through analysis of any data submitted pursuant to the monitoring requirements or any data collected by the Department, that there has been pollution loading degradation at any of the monitoring points or hydrologic units, the Department will notify the permittee accordingly. The permittee shall begin treatment within 30 days in accordance with the treatment limits established in the permit.

(i) Any pre-existing pollutional discharge which is an encountered discharge shall be treated to the effluent limitations in the permit until the discharge is no longer encountered.

(j) For the purposes of determining applicable effluent limitations, a discharge will continue to be deemed to be an encountered discharge until the surface mining area which has been disturbed and which contributes to the discharge has been backfilled and regraded, and revegetation work has started.

**§ 88.509. Criteria and schedule for release of bonds on pollution abatement areas.**

(a) The Department will release up to 60% of the amount of bond for the authorized pollution abatement area if the applicant demonstrates and the Department finds that:

(1) The surface mining activities were conducted on the permit area, including the pollution abatement area, under the requirements of the permit and the authorization, Chapter 86 (relating to surface and underground coal mining: general) and this chapter, except as specifically modified by this subchapter.

(2) The operator has satisfactorily completed backfilling, regrading and drainage control in accordance with the approved reclamation plan.

(3) The operator has properly implemented each step of the pollution abatement plan approved and authorized under this subchapter.

(4) The operator has not caused degradation of the baseline pollution load at any time during the 6 months prior to the submittal of the request for bond release under this subsection and until the bond release is approved as shown by all ground and surface water monitoring conducted by the permittee under § 88.506(1) (relating to operational requirements) or conducted by the Department.

(5) The operator has not caused or contributed to surface water pollution or groundwater degradation by re-affecting or mining the pollution abatement area.

(b) The Department will release an additional amount of bond for the authorized pollution abatement area but retaining an amount sufficient to cover the cost to the Department of re-establishing vegetation if completed by a third party if the operator demonstrates and the Department finds that:

(1) The operator has replaced the topsoil or material conserved under §§ 88.87, 88.183 and 88.287 (relating to vegetation-supporting material: available soil removal; vegetation-supporting material: soil; and vegetation supporting material: available soil removal), completed final grading, planting and established revegetation in accordance with the approved reclamation plan and achieved the standard of success for revegetation in § 88.505(a)(5) (relating to approval or denial).

(2) The operator has not caused or contributed to surface water pollution or groundwater degradation by re-affecting or mining the pollution abatement area.

(3) The operator has complied with one of the following:

(i) Achieved the actual improvement of the baseline pollution load described in the approved pollution abatement plan and shown by all ground and surface water monitoring conducted by the permittee for the period of time provided in the pollution abatement plan after completion of backfilling, final grading, drainage control, topsoiling and establishment of revegetation to achieve the standard of success for revegetation in § 88.505(a)(5).

(ii) Achieved all of the following:

(A) At a minimum has not caused degradation of the baseline pollution load as shown by all ground and surface water monitoring conducted by the operator or the Department:

(I) For 12 months prior to the date of application for bond release and until the bond release is approved under subsection (b), if backfilling, final grading, drainage control, topsoiling and establishment of revegetation to achieve the standard of success for revegetation in § 88.505(a)(5) have been completed.

(II) If treatment has been initiated at any time after initial bond release under subsection (a) and in accordance with § 88.507(e) (relating to treatment of discharges), for 12 months from the discontinuance of treatment under § 88.507(d), if backfilling, final grading, drainage control, topsoiling and establishment of revegetation to achieve the standard of success for revegetation in § 88.505(a)(5) have been completed.

(B) Conducted all measures provided in the approved pollution abatement plan and additional measures specified by the Department in writing at the time of initial bond release under subsection (a) for the area requested for bond release.

(C) Caused aesthetic or other environmental improvements or elimination of public health and safety problems by re-mining and re-affecting the pollution abatement area.

(D) Stabilized the pollution abatement area.

(c) The Department will release the remaining portion of the amount of bond on the authorized pollution abatement area if the applicant demonstrates and the Department finds that:

(1) The operator has successfully completed all the approved pollution abatement and reclamation plans and the pollution abatement area is capable of supporting the postmining land use approved under §§ 88.133, 88.221 and 88.334 (relating to postmining land use; postmining land use; and postdisposal land use).

(2) The operator has complied with the permit and the authorization, Chapter 86 and this chapter, except as specifically modified by this subchapter.

(3) The operator has not caused degradation of the baseline pollution load from the time of bond release under subsection (b) or, if treatment has been initiated after bond release under subsection (b) in accordance with § 88.507(e) for 5 years from the discontinuance of treatment under § 88.507(d).

(4) The applicable liability period has expired under § 86.151 (relating to period of liability).

**§ 88.510. Effluent limitations.**

(a) *Approval and incorporation into permit.* The pollution abatement plan for the pollution abatement area must be approved by the Department and incorporated into the permit as an effluent limitation.

(b) *Implementation of best management practices.* The best management practices (BMP) in the pollution abatement plan shall be implemented as specified in the plan.

(c) *Pre-existing discharges.*

(1) Except as provided in subsection (d), the following effluent limits apply to pre-existing discharges:

<i>Parameter</i>	<i>Effluent Limit</i>
Total Iron	May not exceed baseline loadings (as determined by this subchapter).
Total Manganese	May not exceed baseline loadings (as determined by this subchapter).

<i>Parameter</i>	<i>Effluent Limit</i>
Acidity, Net	May not exceed baseline loadings (as determined by this subchapter).
Suspended Solids	During remining and reclamation, may not exceed baseline loadings (as determined by this subchapter). Prior to bond release, the pre-existing discharge must meet the applicable standards for suspended solids or settleable solids in § 88.92, § 88.187 or § 88.292 (relating to hydrologic balance: effluent standards).

(2) A pre-existing discharge is exempt from meeting standards in § 88.92, § 88.187 or § 88.292 for suspended solids and settleable solids when the Department determines that the standards are infeasible or impractical based on the site-specific conditions of soil, climate, topography, steep slopes or other baseline conditions provided that the operator demonstrates that significant reductions of suspended solids and settleable solids will be achieved through the incorporation of sediment control BMPs into the pollution abatement plan as required under subsection (a).

(d) *In-stream requirements.*

(1) If the Department determines that it is infeasible to collect samples for establishing the baseline pollutant levels under paragraph (4) and that remining will result in significant improvement that would not otherwise occur, the permit applicant shall establish an in-stream baseline concentration at a suitable point downstream from the remining operation, unless the Department waives the sampling requirement under paragraph (5) and the numeric effluent limitations in subsection (c)(1) do not apply.

(2) The in-stream baseline period must include, at a minimum, twice monthly monitoring for a minimum of a 1-year period and must adequately represent the seasonal range and median pollutant concentrations.

(3) Upon issuance of a surface mining permit, the operator shall continue, at a minimum, monthly monitoring of pollutant concentrations at the in-stream monitoring point referenced in paragraph (1), and make a determination as to whether or not there has been degradation of in-stream water quality.

(i) This determination shall be made on a quarterly basis and for each year defined as each consecutive 12-month period.

(ii) The operator is not required to treat individual pre-existing sources of pollution except as may be needed to maintain the in-stream baseline concentration.

(iii) Unless the operator can demonstrate to the satisfaction of the Department that the degradation was the result of factors that are not related to the remining, the operator shall treat one or more pre-existing pollutional discharges or undertake other pollution abatement measures to restore or improve the in-stream pollutant concentration to its baseline conditions.

(4) Pre-existing discharges for which it is infeasible to collect samples for determination of baseline pollutant levels include, but are not limited to:

(i) Discharges that exist as a diffuse groundwater flow that cannot be assessed by the collection of samples.

(ii) A base flow to a receiving stream that cannot be monitored separate from the receiving stream.

(iii) A discharge on a steep or hazardous slope that is inaccessible for sample collection.

(iv) A number of pre-existing discharges so extensive that monitoring of individual discharges is infeasible.

(5) When in-stream monitoring is not indicative of the impact of remining, the in-stream monitoring requirement may be waived by the Department. In-stream monitoring is not indicative of the impact of remining in circumstances including, but not limited to, the following:

(i) Remining sites in drainage areas exceeding 10 square miles.

(ii) Remining sites in watersheds where there are other influences on the in-stream water quality that make it impossible to establish the cause of water quality changes.

(iii) Remining sites where the  $Q_{7-10}$  stream flow is zero.

(e) *Limits.* Pollutants for which there are not effluent limitations established in § 88.92, § 88.187 or § 88.292 may be eligible for limits established under this subchapter.

(f) *Applicability of standards.* Section 88.92, § 88.187 or § 88.292 applies to a pre-existing discharge that is:

(1) Intercepted by surface mining activities.

(2) Commingled with waste streams from operational areas for the purposes of water treatment.

(g) *Cessation of applicability of standards.* Section 88.92, § 88.187 or § 88.292 does not apply to a pre-existing discharge described in subsection (f) when the pre-existing discharge is no longer intercepted by surface mining activities or is no longer commingled with waste streams from operational areas for the purposes of water treatment.

(h) *Bond release.* The effluent limitations in this subchapter apply to pre-existing discharges until bond release under the procedures in Chapter 86 (relating to surface and underground coal mining: general).

**§ 88.511. Baseline determination and compliance monitoring for pre-existing discharges at remining operations.**

(a) The procedures in this section shall be used for determining site-specific baseline pollutant loadings, and for determining whether discharge loadings during coal remining operations have exceeded the baseline loading. A monthly (single-observation) procedure and an annual procedure shall be applied.

(b) At least one sample result per month shall be obtained for 12 months to characterize pollutant loadings for:

(1) Baseline determination.

(2) Each annual monitoring period. It is required that at least one sample be obtained per month for 12 months.

(c) Calculations described in this subchapter shall be applied to pollutant loadings.

(d) Each loading value shall be calculated as the product of a flow measurement and pollutant concentration taken on the same date at the same discharge sampling point using standard units of flow and concentration.

(e) If the baseline concentration in a baseline sample is below the daily maximum effluent limits established in

§ 88.92, § 88.187 or § 88.292 (relating to hydrologic balance: effluent standards), the baseline sample concentration may be replaced with daily maximum effluent limit for the purposes of some of the statistical calculations in this subchapter.

(f) The substituted values should be used for all methods in this subchapter except for:

(1) The calculation of the interquartile range (R) in Method 1 for the annual trigger (Step 3).

(2) Method 2 for the single observation trigger (Step 3).

(g) The interquartile range (R) is calculated as the difference between the quartiles  $M_{-1}$  and  $M_1$ ; the values for quartiles  $M_{-1}$  and  $M_1$  should be calculated using actual loadings (based on measured concentrations) when they are used to calculate the interquartile range (R).

**§ 88.512. Procedure for calculating and applying a single-observation (monthly) trigger.**

(a) This section contains two alternative methods for calculating a single-observation trigger. One method must be proposed by the applicant to be approved and applied by the Department for a remaining permit.

(b) Method 1 for calculating a single observation trigger (L) is accomplished by completing the following steps:

(1) Count the number of baseline observations taken for the pollutant of interest. Label this number n. To sufficiently characterize pollutant loadings during baseline determination and during each annual monitoring period, it is required that at least one sample result be obtained per month for 12 months.

(2) Order all baseline loading observations from lowest to highest. Let the lowest number (minimum) be  $x_{(1)}$ , the next lowest be  $x_{(2)}$ , and so forth until the highest number (maximum) is  $x_{(n)}$ .

(3) If fewer than 17 baseline observations were obtained, the single observation trigger (L) will equal the maximum of the baseline observations ( $x_{(n)}$ ).

(4) If at least 17 baseline observations were obtained, calculate the median (M) of all baseline observations. If n is odd, then M equals  $x_{(n/2+1/2)}$ . If n is even, then M equals  $0.5 * (x_{(n/2)} + x_{(n/2+1)})$ .

(5) Next, calculate  $M_1$  as the median of the subset of observations that range from the calculated M to the maximum  $x_{(n)}$ ; that is, calculate the median of all x larger than or equal to M.

(6) Next, calculate  $M_2$  as the median of the subset of observations that range from the calculated  $M_1$  to  $x_{(n)}$ ; that is, calculate the median of all x larger than or equal to  $M_1$ .

(7) Next, calculate  $M_3$  as the median of the subset of observations that range from the calculated  $M_2$  to  $x_{(n)}$ ; that is, calculate the median of all x larger than or equal to  $M_2$ .

(8) Finally, calculate the single observation trigger (L) as the median of the subset of observations that range from the calculated  $M_3$  to  $x_{(n)}$ .

(9) When subsetting the data for each of the steps in paragraphs (5)—(8), the subset should include all observations greater than or equal to the median calculated in the previous step. If the median calculated in the previous step is not an actual observation, it is not included in the new subset of observations. The new median value

will then be calculated using the median procedure, based on whether the number of points in the subset is odd or even.

(c) The method for applying the single observation trigger (L) to determine when the baseline level has been exceeded is as follows:

(1) If two successive monthly monitoring observations both exceed L, immediately begin weekly monitoring for 4 weeks (four weekly samples).

(2) If three or fewer of the weekly observations exceed L, resume monthly monitoring.

(3) If all four weekly observations exceed L, the baseline pollution loading has been exceeded.

(d) Method 2 for calculating a single observation trigger (L) is accomplished by completing the following steps:

(1) Follow Method 1 in subsection (b) to obtain  $M_1$  (the third quartile, that is, the 75th percentile).

(2) Calculate  $M_{-1}$  as the median of the baseline data which are less than or equal to the sample median M.

(3) Calculate interquartile range,  $R = (M_1 - M_{-1})$ .

(4) Calculate the single observation trigger L as  $L = M_1 + 3 * R$ .

(5) If two successive monthly monitoring observations both exceed L, immediately begin weekly monitoring for 4 weeks (four weekly samples).

(6) If three or fewer of the weekly observations exceed L, resume monthly monitoring.

(7) If all four weekly observations exceed L, the baseline pollution loading has been exceeded.

**§ 88.513. Procedure for calculating and applying an annual trigger.**

(a) This section contains two alternative methods for calculating the annual trigger. One method shall be proposed by the applicant to be approved and applied by the Department for a remaining permit.

(b) Method 1 for calculating and applying an annual trigger (T) is accomplished by completing the following steps:

(1) Calculate M and  $M_1$  of the baseline loading data as described under Method 1 for the single observation trigger in § 88.512(b) (relating to procedure for calculating and applying a single-observation (monthly) trigger).

(2) Calculate  $M_{-1}$  as the median of the baseline data which are less than or equal to the sample median M.

(3) Calculate the interquartile range,  $R = (M_1 - M_{-1})$ .

(4) The annual trigger for baseline (Tb) is calculated as

$$Tb = M + (1.815 * R) / \text{SQRT}(n)$$

where n is the number of baseline loading observations.

(5) To compare baseline loading data to observations from the annual monitoring period, repeat the steps in paragraphs (1)—(3) for the set of monitoring observations. Label the results of the calculations M' and R'. Let m be the number of monitoring observations.

(6) The subtle trigger (Tm) of the monitoring data is calculated as

$$Tm = M' - (1.815 * R') / \text{SQRT}(m)$$

(7) If  $Tm > Tb$ , the median loading of the monitoring observations has exceeded the baseline loading.

(c) Method 2 for calculating and applying an annual trigger (T) is accomplished by completing the following steps:

(1) Let n be the number of baseline loading observations taken, and let m be the number of monitoring loading observations taken. To sufficiently characterize pollutant loadings during baseline determination and during each annual monitoring period, it is required that at least one sample result be obtained per month for a period of 12 months.

(2) Order the combined baseline and monitoring observations from smallest to largest.

(3) Assign a rank to each observation based on the assigned order: the smallest observation will have rank 1, the next smallest will have rank 2 and so forth, up to the

highest observation, which will have rank n + m. If two or more observations are tied (have the same value), then the average rank for those observations should be used.

(4) Sum all the assigned ranks of the n baseline observations, and let this sum be S<sub>n</sub>.

(5) Obtain the critical value (C) from Table 1.

(6) Compare C to S<sub>n</sub>. If S<sub>n</sub> is less than C, then the monitoring loadings have exceeded the baseline loadings.

(7) Critical values for the Wilcoxon-Mann-Whitney test are as follows:

(i) When n and m are less than 21, use Table 1. To find the appropriate critical value, match column with correct n (number of baseline observations) to row with correct m (number of monitoring observations).

Table 1—Critical Values (C) of the Wilcoxon-Mann-Whitney Test (for a one-sided test at the 0.001 significance level)

n \ m	10	11	12	13	14	15	16	17	18	19	20
10	66	79	93	109	125	142	160	179	199	220	243
11	68	82	96	112	128	145	164	183	204	225	248
12	70	84	99	115	131	149	168	188	209	231	253
13	73	87	102	118	135	153	172	192	214	236	259
14	75	89	104	121	138	157	176	197	218	241	265
15	77	91	107	124	142	161	180	201	223	246	270
16	79	94	110	127	145	164	185	206	228	251	276
17	81	96	113	130	149	168	189	211	233	257	281
18	83	99	116	134	152	172	193	215	238	262	287
19	85	101	119	137	156	176	197	220	243	268	293
20	88	104	121	140	160	180	202	224	248	273	299

(ii) When n or m is greater than 20 and there are few ties, calculate an approximate critical value using the following formula and round the result to the next larger integer. Let N = n + m.

$$\text{Critical Value} = 0.5 * n * (N + 1) - 3.0902 * \text{SQRT}(n * m * (N + 1) / 12)$$

(iii) When n or m is greater than 20 and there are many ties, calculate an approximate critical value using the following formula and round the result to the next larger integer. Let S be the sum of the squares of the ranks or average ranks of all N observations. Let N = n + m.

$$\text{Critical Value} = 0.5 * n * (N + 1) - 3.0902 * \text{SQRT}(V)$$

In the preceding formula, calculate V using:

$$V = (n * m * S) / (N * (N - 1)) - (n * m * (N + 1)^2 / (4 * (N - 1)))$$

**CHAPTER 90. COAL REFUSE DISPOSAL**

**Subchapter F. COAL REFUSE DISPOSAL ACTIVITIES ON AREAS WITH PRE-EXISTING POLLUTIONAL DISCHARGES**

**§ 90.302. Definitions.**

The following words and terms, when used in this subchapter, have the following meanings, unless the context clearly indicates otherwise:

*Actual improvement*—The reduction of the baseline pollution load resulting from the implementation of the approved pollution abatement plan; except that any re-

duction of the baseline pollution load achieved by water treatment may not be considered as actual improvement provided that treatment approved by the Department of the coal refuse before, during or after placement in the coal refuse disposal area will not be considered to be water treatment.

*Baseline pollution load*—The characterization of the pollutional material being discharged from or on the pollution abatement area, described in terms of mass discharge for each parameter deemed relevant by the Department, including seasonal variations and variations in response to precipitation events. The Department will establish in each authorization the specific parameters it deems relevant for the baseline pollution load, including, at a minimum, iron and acid loadings.

*Best professional judgment*—The highest quality technical opinion forming the basis for the terms and conditions of the treatment level required after consideration of all reasonably available and pertinent data. The treatment levels shall be established by the Department under sections 301 and 402 of the Federal Clean Water Act (33 U.S.C.A. §§ 1311 and 1342).

*Best technology*—Measures and practices which will abate or ameliorate, to the maximum extent possible, discharges from or on the pollution abatement area. These measures include engineering, geochemical or other applicable practices.

*Coal refuse disposal activities—*

(i) The storage, dumping or disposal of any waste coal, rock, shale, slurry, culm, gob, boney, slate, clay, underground development wastes, coal processing wastes, excess soil and related materials, associated with or near a coal seam, that are either brought above ground or otherwise removed from a coal mine in the process of mining coal or are separated from coal during the cleaning or preparation operations.

(ii) The term does not include the removal or storage of overburden from surface mining activities.

*Coal remining operation—*A coal mining operation at a site on which coal mining was previously conducted and where the site has been abandoned or the performance bond has been forfeited.

*Encountered discharge—*

(i) A pre-existing discharge intercepted in the course of active surface mining activities, including, but not limited to, overburden removal, coal extraction and backfilling, or that occurs in the pit, any mining-related conveyance, sedimentation pond or treatment pond.

(ii) the term does not include diversions of surface water and shallow groundwater flow from areas undisturbed by the implementation of the pollution abatement plan which would otherwise drain into the affected area so long as they are designed, operated and maintained in accordance with § 90.104(b)—(g) (relating to hydrologic balance: diversions).

*Excess soil and related material—*

(i) Rock, clay or other material located immediately above or below a coal seam and which are extracted from a coal mine during the process of mining coal.

(ii) The term does not include topsoil or subsoil.

*Pollution abatement area—*

(i) The part of the permit area that is causing or contributing to the baseline pollution load.

(ii) The term includes adjacent and nearby areas that must be affected to bring about significant improvements of the baseline pollution load and may include the immediate locations of the discharges.

*Pollution abatement plan—*Best management practices (BMP), including, but not limited to, the addition of alkaline material, special handling plans for managing toxic and acid forming material, regrading, revegetation and daylighting, that when implemented will result in reduction of the baseline pollution load.

*Pre-existing discharge—*

(i) Any discharge resulting from mining activities that have been abandoned prior to the time of a remining permit application.

(ii) The term includes a pre-existing discharge that is relocated as a result of the implementation BMPs in the pollution abatement plan.

*Steep slope—*

(i) Any slope, including abandoned mine land features, above 20 degrees or a lesser slope as may be defined by the Department after consideration of soil, climate and other characteristics of a region.

(ii) The term does not apply to situations in which an operator is mining on flat or gently rolling terrain, on which an occasional steep slope is encountered and

through which the mining operation is to proceed, leaving a plain or predominantly flat area.

**§ 90.303. Applicability.**

(a) Authorization may be granted under this subchapter when the authorization is part of the following:

(1) A permit issued after February 6, 1995, but only if the authorization request is made during one of the following periods:

(i) At the time of the submittal of the permit application for the coal refuse disposal activities, including the proposed pollution abatement area.

(ii) Prior to a Department decision to issue or deny that permit.

(2) A permit revision under § 86.52 (relating to permit revisions), but only if the operator affirmatively demonstrates to the satisfaction of the Department that:

(i) The operator has discovered pollutional discharges within the permit area that came into existence after its permit application was approved.

(ii) The operator has not caused or contributed to the pollutional discharges.

(iii) The proposed pollution abatement area is not hydrologically connected to an area where coal refuse disposal activities have been conducted under the permit.

(iv) The operator has not affected the proposed pollution abatement area by coal refuse disposal activities.

(v) The Department has not granted a bonding authorization and mining approval for the area under § 86.37(b) (relating to criteria for permit approval or denial).

(b) Notwithstanding subsection (a), authorization will not be granted under this subchapter for repermitting under §§ 86.12 and 86.14 (relating to continued operation under interim permits; and permit application filing deadlines), permit renewals under § 86.55 (relating to permit renewals: general requirements) or permit transfers under § 86.56 (relating to transfer of permit).

(c) This subchapter applies to pre-existing discharges that are located within or are hydrologically connected to pollution abatement areas of a coal remining operation.

(d) When a coal remining operation seeks reissuance of an existing remining permit with best professional judgment limitations and the Department determines that it is not feasible for a remining operator to re-establish baseline pollutant levels in accordance with the statistical procedures in this subchapter, pre-existing discharge limitations at the existing remining operation remain subject to baseline pollutant levels established during the original permit application.

**§ 90.304. Application for authorization.**

(a) An operator who requests authorization under this subchapter shall comply with the permit application requirements of Chapter 86 (relating to surface and underground coal mining: general) and Subchapters A—D, except as specifically modified by this subchapter. The operator shall also:

(1) Delineate on a map the proposed pollution abatement area, including the location of the pre-existing discharges.

(2) Provide a description of the hydrologic balance for the proposed pollution abatement area that includes:



(i) Results of a detailed water quality and quantity monitoring program, including seasonal variations, variations in response to precipitation events and modeled baseline pollution loads using this monitoring program.

(ii) Monitoring for flow, pH, alkalinity, acidity, total iron, total manganese, total aluminum, sulfates, total suspended solids and other water quality parameters the Department deems relevant.

(3) Provide a pollution abatement plan which must:

(i) Describe the pollution abatement area.

(ii) Be designed to reduce the pollution load from pre-existing discharges and must identify the selected best management practices (BMP) to be used.

(iii) Describe the design specifications, construction specifications, maintenance schedules, criteria for monitoring and inspection, and expected performance of the BMPs.

(iv) Represent best technology and include:

(A) Plans, cross-sections and schematic drawings describing the pollution abatement plan proposed to be implemented.

(B) A description and explanation of the range of abatement level that is anticipated to be achieved, costs and each step in the proposed pollution abatement plan.

(C) A description of the standard of success for revegetation necessary to insure success of the pollution abatement plan.

(v) Provide a description of and information on the pre-existing discharges hydrogeologically connected to the remaining area.

(4) Determine the baseline pollution load.

(5) Provide background data that are the bases for the baseline pollution load. The baseline pollution load shall be reported in pounds per day.

(b) The operator seeking this authorization may continue the water quality and quantity monitoring program required by subsection (a)(2) after making the authorization request. The operator may submit the results of this continuing monitoring program to the Department on a monthly basis until a decision on the authorization request is made.

**§ 90.305. Application approval or denial.**

(a) Authorization may not be granted under this subchapter unless the operator seeking the authorization affirmatively demonstrates the following to the satisfaction of the Department on the basis of information in the application:

(1) Neither the operator, nor an officer, principal shareholder, agent, partner, associate, parent corporation, subsidiary or affiliate, sister corporation, contractor or subcontractor, or a related party as defined in § 86.1 (relating to definitions) has either of the following:

(i) Legal responsibility or liability as an operator for treating the water pollution discharges from or on the proposed pollution abatement area.

(ii) Statutory responsibility or liability for reclaiming the proposed pollution abatement area.

(2) The proposed pollution abatement plan will result in significant reduction of the baseline pollution load and represents best technology.

(3) The land within the proposed pollution abatement area can be reclaimed.

(4) The coal refuse disposal activities on the proposed pollution abatement area will not cause additional surface water pollution or groundwater degradation.

(5) The standard of success for revegetation will be achieved. The standard of success for revegetation for sites previously reclaimed to the standards of this chapter and Chapters 87 and 88 (relating to surface mining of coal; and anthracite coal) shall be the standards set forth in § 90.159 (relating to revegetation: standards for successful revegetation). The standard of success for revegetation for sites not previously reclaimed to the standards of this chapter and Chapters 87 and 88 shall be, at a minimum, the following, provided the site is not a bond forfeiture site where the forfeited money paid into the fund is sufficient to reclaim the forfeited site to the applicable standards:

(i) A ground cover of living plants not less than can be supported by the best available topsoil or other suitable material in the reaffected area.

(ii) A ground cover no less than that existing before disturbance of the area by coal refuse disposal activities.

(iii) Adequate vegetation to control erosion. Vegetation may be no less than that necessary to insure the success of the pollution abatement plan.

(6) The coal refuse disposal activities on permitted areas other than the proposed pollution abatement area will not cause surface water pollution or groundwater degradation.

(7) Requirements of § 86.37(a) (relating to criteria for permit approval or denial) that are consistent with this section have been met.

(b) An authorization may be denied under this subchapter if granting the authorization will, or is likely to, affect a legal responsibility or liability under The Clean Streams Law (35 P.S. §§ 691.1—691.1001), the Surface Mining Conservation and Reclamation Act (52 P.S. §§ 1396.1—1396.19b), Chapter 86 (relating to surface and underground coal mining: general) or Subchapters A—D, for the proposed pollution abatement area or other areas or discharges in the vicinity of the proposed pollution abatement area.

(c) Authorization may not be granted under this subchapter unless there are one or more pre-existing discharges from or on the pollution abatement area.

(d) The authorization allowed under this subchapter is only for the pollution abatement area and does not apply to other areas of the permit.

**§ 90.306. Operational requirements.**

An operator who receives an authorization under this subchapter shall comply with Chapter 86 (relating to surface and underground coal mining: general) and Subchapters A—D except as specifically modified by this subchapter. The operator shall also:

(1) Implement the approved water quality and quantity monitoring program for the pollution abatement area until the requirements of § 90.309 (relating to criteria and schedule for release of bonds on pollution abatement areas) are met. The monitoring program must conform to the following:

(i) Sampling shall be conducted on a monthly basis for the pre-existing discharges and should adequately represent the seasonal range in loading rates as well as the median loading rate from each pre-existing discharge or combination of discharges.

(ii) Results shall be submitted on a quarterly basis.  
 (iii) Data must include the flow measurements and loading calculations.

(2) Implement the approved pollution abatement plan.

(3) Notify the Department when more frequent sampling is required.

(i) Weekly sampling of the pre-existing discharges shall begin if any two consecutive monthly samples of pollution load at any of the monitoring points or hydrologic units exceed one or more of the triggers established by the baseline data.

(ii) Weekly sampling requirements shall continue until two consecutive weekly sample analyses indicate that all parameters which triggered weekly sampling have dropped below the trigger established by the baseline data.

**§ 90.307. Treatment of discharges.**

(a) Except for pre-existing discharges that are not encountered during coal refuse disposal activities or the implementation of the pollution abatement plan, the operator shall comply with § 90.102 (relating to hydrologic balance: water quality standards, effluent limitations and best management practices).

(b) Except as provided in § 90.310(d) (relating to effluent limitations), the operator shall treat the pre-existing discharges that are not encountered during coal refuse disposal activities or implementation of the pollution abatement plan to comply with the effluent limitations established by best professional judgment. The effluent limitations established by best professional judgment may not be less than the baseline pollution load. If the baseline pollution load, when expressed as a concentration for a specific parameter, satisfies the effluent limitation in § 90.102 for that parameter, the operator shall treat the pre-existing discharge for that parameter to comply with either effluent limitations established by best professional judgment or the effluent limitations in § 90.102.

(c) For purposes of subsections (a) and (b), the term encountered may not be construed to mean diversions of surface water and shallow groundwater flow from areas undisturbed by the implementation of the pollution abatement plan that would otherwise drain into the affected area, as long as the diversions are designed, operated and maintained under § 90.104(b)—(h) (relating to hydrologic balance: diversions).

(d) An operator required to treat pre-existing discharges will be allowed to discontinue treating the discharges under subsection (b) when the operator affirmatively demonstrates the following to the Department's satisfaction:

(1) The pre-existing discharges are meeting the effluent limitations established by subsection (b) as shown by groundwater and surface water monitoring conducted by the operator or the Department.

(2) Coal refuse disposal activities under the permit—including the pollution abatement area—are being or were conducted under the requirements of the permit and the authorization, and Chapter 86 (relating to surface and underground mining: general) and this chapter except as specifically modified by this subchapter.

(3) The operator has implemented each step of the pollution abatement plan as approved in the authorization.

(4) The operator did not cause or allow additional surface water pollution or groundwater degradation by re-affecting the pollution abatement area.

(e) If after discontinuance of treatment of discharges under subsection (d) the discharges fail to meet the effluent limitations established by subsection (b), the operator shall reinstitute treatment of the discharges under subsection (b). An operator who reinstates treatment under this subsection will be allowed to discontinue treatment if the requirements of subsection (d) are met.

(f) Discontinuance of treatment under subsection (d) may not be deemed or construed to be or to authorize a release of bond under § 90.309 (relating to criteria and schedule for release of bonds on pollution abatement areas).

(g) If four consecutive weekly determinations of pollution load, as required under § 90.306(3)(i) (relating to operational requirements), exceed one or more triggers, the permittee shall notify the Department and begin treatment within 30 days of the fourth sample in accordance with the treatment limits established in the permit.

(h) If the Department determines, through analysis of any data submitted pursuant to the monitoring requirements or any data collected by the Department, that there has been pollution loading degradation at any of the monitoring points or hydrologic units, the Department will notify the permittee accordingly. The permittee shall begin treatment within 30 days in accordance with the treatment limits established in the permit.

(i) Any pre-existing pollutional discharge which is an encountered discharge shall be treated to the effluent limitations in the permit until the discharge is no longer encountered.

(j) For the purposes of determining applicable effluent limitations, a discharge will continue to be deemed to be an encountered discharge until the surface mining area which has been disturbed and which contributes to the discharge has been backfilled and regraded, and revegetation work has started.

**§ 90.309. Criteria and schedule for release of bonds on pollution abatement areas.**

(a) The Department will release up to 50% of the amount of bond for the authorized pollution abatement area if the applicant demonstrates and the Department finds the following:

(1) The coal refuse disposal activities were conducted on the permit area, including the pollution abatement area, under the requirements of the permit and the authorization, Chapter 86 (relating to surface and underground coal mining: general) and this chapter except as specifically modified by this subchapter.

(2) The operator has satisfactorily completed backfilling, grading, installing the water impermeable cover and drainage control in accordance with the approved reclamation plan.

(3) The operator has properly implemented each step of the pollution abatement plan approved and authorized under this subchapter.

(4) The operator has not caused degradation of the baseline pollution load at any time during the 6 months prior to the submittal of the request for bond release under this subsection and until the bond release is approved as shown by all groundwater and surface water monitoring conducted by the permittee under

§ 90.306(a)(1) (relating to operational requirements) or conducted by the Department.

(5) The operator has not caused or contributed to surface water pollution or groundwater degradation by re-affecting the pollution abatement area.

(b) The Department will release up to an additional 35% of the amount of bond for the authorized pollution abatement area but retain an amount sufficient to cover the cost to the Department of re-establishing vegetation if completed by a third party if the operator demonstrates and the Department finds the following:

(1) The operator has replaced the topsoil or material conserved under § 90.97 (relating to topsoil: removal), completed final grading, planting and established revegetation under the approved reclamation plan and achieved the standards of success for revegetation in § 90.305(a)(5) (relating to application approval or denial).

(2) The operator has not caused or contributed to groundwater or surface water pollution by re-affecting the pollution abatement area.

(3) The operator has achieved the following standards:

(i) Achieved the actual improvement of the baseline pollution load described in the approved pollution abatement plan as shown by groundwater and surface water monitoring conducted by the permittee for the time provided in the pollution abatement plan after completion of backfilling, final grading, drainage control, topsoiling and establishment of revegetation to achieve the standard for success in § 90.305(a)(5).

(ii) Achieved the following:

(A) At a minimum has not caused degradation of the baseline pollution load as shown by groundwater and surface water monitoring conducted by the operator or the Department for one of the following:

(I) For 12 months from the date of initial bond release under subsection (a), if backfilling, final grading, drainage control, placement of impermeable cover, topsoiling and establishment of revegetation to achieve the standard of success for revegetation in § 90.305(a)(5) have been completed.

(II) If treatment has been initiated at any time after initial bond release under subsection (a) and § 90.307(e) (relating to treatment of discharges), for 12 months from the date of discontinuance of treatment under § 90.307(d), if backfilling, final grading, drainage control, placement of impermeable cover, topsoiling and establishment of revegetation to achieve the standard of success for revegetation in § 90.305(a)(5) have been completed.

(B) Conducted all the measures provided in the approved pollution abatement plan and additional measures specified by the Department in writing at the time of initial bond release under subsection (a) for the area requested for bond release.

(C) Caused aesthetic or other environmental improvements and the elimination of public health and safety problems by engaging in coal refuse disposal activities and re-affecting the pollution abatement area.

(D) Stabilized the pollution abatement area.

(c) The Department will release the remaining portion of the amount of bond on the authorized pollution abatement area if the operator demonstrates and the Department finds the following:

(1) The operator has successfully completed the approved pollution abatement and reclamation plans, and

the pollution abatement area is capable of supporting the postdisposal land use approved under § 90.166 (relating to postdisposal land use).

(2) The operator has complied with the permit and the authorization, Chapter 86 and this chapter, except as specifically modified by this subchapter.

(3) The operator has not caused degradation of the baseline pollution load from the time of bond release under subsection (b) or, if treatment has been initiated after bond release under subsection (b) in accordance with § 90.307(e) for 5 years from the discontinuance of treatment under § 90.307(d).

(4) The applicable liability period has expired under § 86.151 (relating to period of liability).

**§ 90.310. Effluent limitations.**

(a) *Approval and incorporation into permit.* The pollution abatement plan for the pollution abatement area must be approved by the Department and incorporated into the permit as an effluent limitation.

(b) *Implementation of best management practices.* The best management practices (BMP) in the pollution abatement plan shall be implemented as specified in the plan.

(c) *Pre-existing discharges.*

(1) Except as provided in subsection (d), the following effluent limits apply to pre-existing discharges:

<i>Parameter</i>	<i>Effluent Limit</i>
Total Iron	May not exceed baseline loadings (as determined by this subchapter).
Total Manganese	May not exceed baseline loadings (as determined by this subchapter).
Acidity, Net	May not exceed baseline loadings (as determined by this subchapter).
Suspended Solids	During remining and reclamation, may not exceed baseline loadings (as determined by this subchapter). Prior to bond release, the pre-existing discharge must meet the applicable standards for suspended solids or settleable solids in § 90.102 (relating to hydrologic balance: water quality standards, effluent limitations and best management practices).

(2) A pre-existing discharge is exempt from meeting standards in § 90.102 for suspended solids and settleable solids when the Department determines that the standards are infeasible or impractical based on the site-specific conditions of soil, climate, topography, steep slopes or other baseline conditions provided that the operator demonstrates that significant reductions of suspended solids and settleable solids will be achieved through the incorporation of sediment control BMPs into the pollution abatement plan as required under subsection (a).

(d) *In-stream requirements.*

(1) If the Department determines that it is infeasible to collect samples for establishing the baseline pollutant levels under paragraph (4) and that remining will result in significant improvement that would not otherwise occur, the permit applicant shall establish an in-stream baseline concentration at a suitable point downstream

from the remining operation, unless the Department waives the sampling requirement under paragraph (5) and the numeric effluent limitations in subsection (c)(1) do not apply.

(2) The in-stream baseline period must include, at a minimum, twice monthly monitoring for a minimum of a 1-year period and must adequately represent the seasonal range and median pollutant concentrations.

(3) Upon issuance of a surface mining permit, the operator shall continue, at a minimum, monthly monitoring of pollutant concentrations at the in-stream monitoring point referenced in paragraph (1), and make a determination as to whether or not there has been degradation of in-stream water quality.

(i) This determination shall be made on a quarterly basis and for each year defined as each consecutive 12-month period.

(ii) The operator is not required to treat individual pre-existing sources of pollution except as may be needed to maintain the in-stream baseline concentration.

(iii) Unless the operator can demonstrate to the satisfaction of the Department that the degradation was the result of factors that are not related to the remining, the operator shall treat one or more pre-existing pollutional discharges or undertake other pollution abatement measures to restore or improve the in-stream pollutant concentration to its baseline conditions.

(4) Pre-existing discharges for which it is infeasible to collect samples for determination of baseline pollutant levels include, but are not limited to:

(i) Discharges that exist as a diffuse groundwater flow that cannot be assessed by the collection of samples.

(ii) A base flow to a receiving stream that cannot be monitored separate from the receiving stream.

(iii) A discharge on a steep or hazardous slope that is inaccessible for sample collection.

(iv) A number of pre-existing discharges so extensive that monitoring of individual discharges is infeasible.

(5) When in-stream monitoring is not indicative of the impact of remining, the in-stream monitoring requirement may be waived by the Department. In-stream monitoring is not indicative of the impact of remining in circumstances including, but not limited to, the following:

(i) Remining sites in drainage areas exceeding 10 square miles.

(ii) Remining sites in watersheds where there are other influences on the in-stream water quality that make it impossible to establish the cause of water quality changes.

(iii) Remining sites where the  $Q_{7-10}$  stream flow is zero.

(e) *Limits.* Pollutants for which there are not effluent limitations established in § 90.102 may be eligible for limits established under this subchapter.

(f) *Applicability of standards.* Section 90.102 applies to a pre-existing discharge that is:

(1) Intercepted by surface mining activities.

(2) Commingled with waste streams from operational areas for the purposes of water treatment.

(g) *Cessation of applicability of standards.* Section 90.102 does not apply to a pre-existing discharge described in subsection (f) when the pre-existing discharge is no longer intercepted by surface mining activities or is

no longer commingled with waste streams from operational areas for the purposes of water treatment.

(h) *Bond release.* The effluent limitations in this subchapter apply to pre-existing discharges until bond release under the procedures in Chapter 86 (relating to surface and underground coal mining: general).

**§ 90.311. Baseline determination and compliance monitoring for pre-existing discharges at remining operations.**

(a) The procedures in this section shall be used for determining site-specific baseline pollutant loadings, and for determining whether discharge loadings during coal remining operations have exceeded the baseline loading. A monthly (single-observation) procedure and an annual procedure shall be applied.

(b) At least one sample result per month shall be obtained for 12 months to characterize pollutant loadings for:

(1) Baseline determination.

(2) Each annual monitoring period. It is required that at least one sample be obtained per month for 12 months.

(c) Calculations described in this subchapter shall be applied to pollutant loadings.

(d) Each loading value shall be calculated as the product of a flow measurement and pollutant concentration taken on the same date at the same discharge sampling point using standard units of flow and concentration.

(e) If the baseline concentration in a baseline sample is below the daily maximum effluent limits established in § 90.102 (relating to hydrologic balance: water quality standards, effluent limitations and best management practices), the baseline sample concentration may be replaced with daily maximum effluent limit for the purposes of some of the statistical calculations in this subchapter.

(f) The substituted values should be used for all methods in this subchapter except for:

(1) The calculation of the interquartile range (R) in Method 1 for the annual trigger (Step 3).

(2) Method 2 for the single observation trigger (Step 3).

(g) The interquartile range (R) is calculated as the difference between the quartiles  $M_{-1}$  and  $M_1$ ; the values for quartiles  $M_{-1}$  and  $M_1$  should be calculated using actual loadings (based on measured concentrations) when they are used to calculate the interquartile range (R).

**§ 90.312. Procedure for calculating and applying a single-observation (monthly) trigger.**

(a) This section contains two alternative methods for calculating a single-observation trigger. One method must be proposed by the applicant to be approved and applied by the Department for a remining permit.

(b) Method 1 for calculating a single observation trigger (L) is accomplished by completing the following steps:

(1) Count the number of baseline observations taken for the pollutant of interest. Label this number n. To sufficiently characterize pollutant loadings during baseline determination and during each annual monitoring period, it is required that at least one sample result be obtained per month for 12 months.

(2) Order all baseline loading observations from lowest to highest. Let the lowest number (minimum) be  $x_{(1)}$ , the next lowest be  $x_{(2)}$ , and so forth until the highest number (maximum) is  $x_{(n)}$ .

(3) If fewer than 17 baseline observations were obtained, the single observation trigger (L) will equal the maximum of the baseline observations ( $x_{(n)}$ ).

(4) If at least 17 baseline observations were obtained, calculate the median (M) of all baseline observations. If n is odd, then M equals  $x_{(n/2+1/2)}$ . If n is even, then M equals  $0.5 * (x_{(n/2)} + x_{(n/2+1)})$ .

(5) Next, calculate  $M_1$  as the median of the subset of observations that range from the calculated M to the maximum  $x_{(n)}$ ; that is, calculate the median of all x larger than or equal to M.

(6) Next, calculate  $M_2$  as the median of the subset of observations that range from the calculated  $M_1$  to  $x_{(n)}$ ; that is, calculate the median of all x larger than or equal to  $M_1$ .

(7) Next, calculate  $M_3$  as the median of the subset of observations that range from the calculated  $M_2$  to  $x_{(n)}$ ; that is, calculate the median of all x larger than or equal to  $M_2$ .

(8) Finally, calculate the single observation trigger (L) as the median of the subset of observations that range from the calculated  $M_3$  to  $x_{(n)}$ .

(9) When subsetting the data for each of the steps in paragraphs (5)—(8), the subset should include all observations greater than or equal to the median calculated in the previous step. If the median calculated in the previous step is not an actual observation, it is not included in the new subset of observations. The new median value will then be calculated using the median procedure, based on whether the number of points in the subset is odd or even.

(c) The method for applying the single observation trigger (L) to determine when the baseline level has been exceeded is as follows:

(1) If two successive monthly monitoring observations both exceed L, immediately begin weekly monitoring for 4 weeks (four weekly samples).

(2) If three or fewer of the weekly observations exceed L, resume monthly monitoring.

(3) If all four weekly observations exceed L, the baseline pollution loading has been exceeded.

(d) Method 2 for calculating a single observation trigger (L) is accomplished by completing the following steps:

(1) Follow Method 1 in subsection (b) to obtain  $M_1$  (the third quartile, that is, the 75th percentile).

(2) Calculate  $M_{-1}$  as the median of the baseline data which are less than or equal to the sample median M.

(3) Calculate interquartile range,  $R = (M_1 - M_{-1})$ .

(4) Calculate the single observation trigger L as  $L = M_1 + 3 * R$ .

(5) If two successive monthly monitoring observations both exceed L, immediately begin weekly monitoring for 4 weeks (four weekly samples).

(6) If three or fewer of the weekly observations exceed L, resume monthly monitoring.

(7) If all four weekly observations exceed L, the baseline pollution loading has been exceeded.

**§ 90.313. Procedure for calculating and applying an annual trigger.**

(a) This section contains two alternative methods for calculating the annual trigger. One method shall be proposed by the applicant to be approved and applied by the Department for a remaining permit.

(b) Method 1 for calculating and applying an annual trigger (T) is accomplished by completing the following steps:

(1) Calculate M and  $M_1$  of the baseline loading data as described under Method 1 for the single observation trigger in § 90.312(b) (relating to procedure for calculating and applying a single-observation (monthly) trigger).

(2) Calculate  $M_{-1}$  as the median of the baseline data which are less than or equal to the sample median M.

(3) Calculate the interquartile range,  $R = (M_1 - M_{-1})$ .

(4) The annual trigger for baseline (Tb) is calculated as

$$Tb = M + (1.815 * R) / \text{SQRT}(n)$$

where n is the number of baseline loading observations.

(5) To compare baseline loading data to observations from the annual monitoring period, repeat the steps in paragraphs (1)—(3) for the set of monitoring observations. Label the results of the calculations  $M'$  and  $R'$ . Let m be the number of monitoring observations.

(6) The subtle trigger (Tm) of the monitoring data is calculated as

$$Tm = M' - (1.815 * R') / \text{SQRT}(m)$$

(7) If  $Tm > Tb$ , the median loading of the monitoring observations has exceeded the baseline loading.

(c) Method 2 for calculating and applying an annual trigger (T) is accomplished by completing the following steps:

(1) Let n be the number of baseline loading observations taken, and let m be the number of monitoring loading observations taken. To sufficiently characterize pollutant loadings during baseline determination and during each annual monitoring period, it is required that at least one sample result be obtained per month for a period of 12 months.

(2) Order the combined baseline and monitoring observations from smallest to largest.

(3) Assign a rank to each observation based on the assigned order: the smallest observation will have rank 1, the next smallest will have rank 2 and so forth, up to the highest observation, which will have rank n + m. If two or more observations are tied (have the same value), then the average rank for those observations should be used.

(4) Sum all the assigned ranks of the n baseline observations, and let this sum be  $S_n$ .

(5) Obtain the critical value (C) from Table 1.

(6) Compare C to  $S_n$ . If  $S_n$  is less than C, then the monitoring loadings have exceeded the baseline loadings.

(7) Critical values for the Wilcoxon-Mann-Whitney test are as follows:

(i) When n and m are less than 21, use Table 1. To find the appropriate critical value, match column with correct n (number of baseline observations) to row with correct m (number of monitoring observations).

Table 1—Critical Values (C) of the Wilcoxon-Mann-Whitney Test (for a one-sided test at the 0.001 significance level)

n \ m	10	11	12	13	14	15	16	17	18	19	20
10	66	79	93	109	125	142	160	179	199	220	243
11	68	82	96	112	128	145	164	183	204	225	248
12	70	84	99	115	131	149	168	188	209	231	253
13	73	87	102	118	135	153	172	192	214	236	259
14	75	89	104	121	138	157	176	197	218	241	265
15	77	91	107	124	142	161	180	201	223	246	270
16	79	94	110	127	145	164	185	206	228	251	276
17	81	96	113	130	149	168	189	211	233	257	281
18	83	99	116	134	152	172	193	215	238	262	287
19	85	101	119	137	156	176	197	220	243	268	293
20	88	104	121	140	160	180	202	224	248	273	299

(ii) When n or m is greater than 20 and there are few ties, calculate an approximate critical value using the following formula and round the result to the next larger integer. Let N = n + m.

$$\text{Critical Value} = 0.5 * n * (N + 1) - 3.0902 * \text{SQRT}(n * m * (N + 1) / 12)$$

(iii) When n or m is greater than 20 and there are many ties, calculate an approximate critical value using the following formula and round the result to the next larger integer. Let S be the sum of the squares of the ranks or average ranks of all N observations. Let N = n + m.

$$\text{Critical Value} = 0.5 * n * (N + 1) - 3.0902 * \text{SQRT}(V)$$

In the preceding formula, calculate V using:

$$V = (n * m * S) / (N * (N - 1)) - (n * m * (N + 1)^2) / (4 * (N - 1))$$

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