Regulatory Analysis Form

This space for use by IRRC

(1) Agency

Environmental Protection

(2) I.D. Number (Governor's Office Use)

7-346

IRRC Number: 2058

(3) Short Title

Solvent Cleaning Operations

(4) PA Code Cite
25 *PA Code* Chapter 121 and 25 *PA Code* Chapter 129.63

(5) Agency Contacts & Telephone Numbers

Primary Contact: Sharon Trostle, 783-8727

Secondary Contact: Barbara Sexton, 783-8727

(6) Type of Rulemaking (Check One)

____Proposed Rulemaking
__X__Final Order Adopting Regulation
____Final Order, Proposed Rulemaking Omitted

(7) Is a 120-Day Emergency Certification Attached?

__x__ No
____ Yes: By the Attorney General
____ Yes: By the Governor

(8) Briefly explain the regulation in clear and nontechnical language.

The final rulemaking adopts new definitions and revises a definition related to solvent cleaning machines.

The final rulemaking adopts revisions to Section 129.63 that update equipment requirements for certain solvent cleaning machines that emit volatile organic compounds (VOCs) to make the requirements consistent with current technology. These requirements apply to machines used to remove oil, grease and soils from metal parts. In addition, the final rulemaking revises operating requirements in Section 129.63. The final rulemaking establishes volatility limits for solvents used in cold cleaning machines.

(9) State the statutory authority for the regulation and any relevant state or federal court decisions.

This action is being taken under the authority of Section 5 of the Air Pollution Control Act (35 P.S § 4005).

(10) Is the regulation mandated by any federal or state law or court order, or federal regulation? If yes, cite the specific law, case or regulation, and any deadlines for action.

The final revisions are not specifically mandated by law, court order or regulation.

The proposed revisions are based on the recommendations of the Southwest and Southeast Pennsylvania Ozone Stakeholders Working Groups that recommended that the Department revise the requirements relating to use of solvents for cleaning of parts. In April of 1996, these Working Groups were formed to address the problem in the major urban areas and to make recommendations to the Secretary regarding the implementation of measures necessary to attain and maintain the health-based standard. Both Stakeholders Groups recommended that the Commonwealth revise the VOC requirements related to solvent cleaning operations in order to reduce emissions of ozone precursors. In addition, the Southcentral and Reading-Lehigh Valley Ozone Stakeholder Working Groups endorsed the reduction of emissions from solvent cleaning as part of their recommendations in late-2000.

This recommendation is part of the Commonwealth's ongoing efforts to develop and implement strategies to address the continuing health-related ozone air quality problem in Pennsylvania.

(11) Explain the compelling public interest that justifies the regulation. What is the problem it addresses?

This regulation will help move the Commonwealth toward attainment of the health-based standard for ozone, which is in the best interest of the public. (See response to #10 above.)

(12) State the public health, safety, environmental or general welfare risks associated with non-regulation.

When ground-level ozone is present in concentrations in excess of the federal health-based standard, public health is adversely affected. The federal Environmental Protection Agency has concluded that there is an association between ambient ozone concentrations and increased hospital admissions for respiratory ailments, such as asthma. Further, although 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 ambient ozone while engaged in activity that involves physical exertion. Though such symptoms are often temporary, repeated exposure could result in permanent lung damage.

The implementation of additional measures to address the ozone air quality nonattainment in Pennsylvania is necessary to protect the public health. The reduction of VOC emissions from solvent cleaning operations is one of the strategies recommended by the four Ozone Stakeholder Working Groups which have met in Pennsylvania.

(13) Describe who will benefit from the regulation. (Quantify the benefits as completely as possible and approximate the number of people who will benefit.)

The proposed regulations will result in improved air quality for all citizens of the Commonwealth by reducing ozone precursor emissions. The reduction in ozone precursor emissions will result in improved ozone air quality throughout Pennsylvania. In addition, the proposed regulations will result in reduced levels of hazardous air pollutants throughout Pennsylvania. Affected facilities will benefit from reduced costs.

(14) Describe who will be adversely affected by the regulation. (Quantify the adverse effect as completely as possible and approximate the number of people who will be adversely affected.)

The proposed revisions will require that operators of certain solvent cleaning machines make modifications to the equipment to meet the revised equipment specifications. These equipment specifications are generally consistent with the federal maximum achievable control technology (MACT) requirements for solvent cleaning operations. Certain cleaning machines which are not be subject to the MACT standards may be required to make hardware modifications. These modifications will reduce the evaporative loss of solvents and will, therefore, reduce operating costs. Certain cold cleaning machines may have to be refitted with a cover for closing the machine when it is not in use.

Operators of cold cleaning machines will be required to purchase lower volatility cleaning solvent. The anticipated cost increase per gallon of solvent, based on estimates by a major supplier of solvent and cold cleaning machines, will be approximately 45 percent. This cost increase will be offset by the reduced evaporative loss of solvent that will result from the lower volatility.

(15) List the persons, groups or entities that will be required to comply with the regulation. (Approximate the number of people who will be required to comply.)

Batch vapor cleaning machines and in-line vapor and cold cleaning machines are used in a variety of manufacturing operations for cleaning of parts before further processing. Cold cleaning machines are used in a variety of settings including automobile repair facilities, manufacturing operations and in maintenance shops at commercial, industrial, and institutional facilities. Based on emission inventory data, there are fewer than 100 vapor degreasing operations in the Commonwealth. Estimates, based on comparison of EPA methodologies for calculation of emissions from cold cleaning machines indicates that there are approximately 71,400 cold cleaning units in Pennsylvania.

(16) Describe the communications with and input from the public in the development and drafting of the regulation. List the persons and/or groups who were involved, if applicable.

Ozone Stakeholder Working Groups that have met since 1996 have recommended action to reduce VOC emissions from solvent cleaning operations was one of the recommendations of the Ozone Stakeholder Working Groups.

A stakeholder group, including representatives of the major equipment and solvent suppliers, the automobile service industry, the industrial community, coating manufacturers, coating and coating equipment suppliers, environmental groups, and regulatory agencies met for approximately 8 months to discuss regulatory strategies. The proposed regulation represents the consensus position of the stakeholder group.

The final revisions were discussed with the Air Quality Technical Advisory Committee at the May 24, 2001 meeting. In addition, the revisions have been discussed with the Small Business Compliance Advisory Committee.

(17) Provide a specific estimate of the costs and/or savings to the regulated community associated with compliance, including any legal, accounting or consulting procedures which may be required.

Cost savings of approximately $16 million are anticipated for operators of cold cleaning machines. Operators of vapor cleaning machines and cold cleaning machines may experience costs for upgrading hardware, but these costs should be offset by reduced solvent loss and replacement purchase costs.

Based on input from the industry, much of the regulated community may have already made the conversion to low volatility solvents for other reasons than these requirements. In this case, the actual cost estimates for compliance with the cold cleaner requirements may be overstated.

(18) Provide a specific estimate of the costs and/or savings to local governments associated with compliance, including any legal, accounting or consulting procedures which may be required.

The final regulations are expected to impose no additional direct costs on local governments.

If, however, a local government operates solvent cleaning machines, additional cost savings commensurate with those for the private sector may be experienced.

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

To the extent that state government facilities utilize solvent cleaning machines, cost savings will be commensurate with those the private sector will experience.

Nominal costs will be experienced by the Commonwealth to assist in providing training, outreach and assistance to the regulated community. No new staff resources are anticipated to be necessary.

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

	Current FY Year	FY +1 Year	FY +2 Year	FY +3 Year	FY +4 Year	FY +5 Year
SAVINGS:	$	$	$	$	$	$
Regulated Community	0.00	0.00	14.6MM	14.6MM	14.6MM	14.6MM
Local Government	0.00	0.00	0.00	0.00	0.00	0.00
State Government	0.00	0.00	0.00	0.00	0.00	0.00
Total Savings	0.00	0.00	14.6MM	14.6MM	14.6MM	14.6MM
COSTS:	0.00	0.00	0.00	0.00	0.00	0.00
Regulated Community	0.00	0.00	0.00	0.00	0.00	0.00
Local Government	0.00	0.00	0.00	0.00	0.00	0.00
State Government	0.00	0.00	0.00	0.00	0.00	0.00
Total Costs	0.00	0.00	14.6MM	14.6MM	14.6MM	14.6MM
REVENUE LOSSES:						
Regulated Community	0.00	0.00	0.00	0.00	0.00	0.00
Local Government	0.00	0.00	0.00	0.00	0.00	0.00
State Government	0.00	0.00	0.00	0.00	0.00	0.00
Total Revenue Losses	0.00	0.00	0.00	0.00	0.00	0.00

(20a) Explain how the cost estimates listed above were derived.

The major cost savings associated with this regulation are the result of reduced solvent loss that will occur with the use of low volatility solvents. Data provided by a major solvent supplier indicated that the cost of 1mm Hg solvents is approximately $2.33 per gallon more than higher volatility materials. Emission estimates indicate that in excess of 6.7 million gallons are lost due to evaporation each year. The increased solvent costs will be offset by the lower replacement solvent purchases. Based on the estimated reduced solvent losses, it is estimated that the approximately $14 MM in solvent purchases will be avoided.

Provisions in the final rulemaking that restrict the applicability of the requirements to the use of VOCs to remove only grease, oil and soils from metal parts and other changes in the final rulemaking that provide for compliance options should significantly restrict the costs for users of vapor cleaning machines. Due to the flexibility for these users, compliance costs are expected to be minimal. In fact, solvent savings for these users may offset any other costs imposed.

(20b) Provide the past three year expenditure history for programs affected by the regulation.

Program	FY-3	FY-2	FY-1	Current FY
Air Quality	28,000,000	28,000,000	26,000,000	24,000,000

(21) Using the cost-benefit information provided above, explain how the benefits of the regulation outweigh the adverse effects and costs.

The final regulation may result in estimated cost savings of approximately $14.6 million annually due to the need for reduced solvent purchases for cold cleaning machines. There may be slight cost increases for operators of some vapor cleaning machines, but these costs should be offset by seduced solvent loss and replacement purchases.

The final regulation has been developed to provide affected operators with a number of compliance options to enable them to minimize any costs.

(22) Describe the nonregulatory alternatives considered and the costs associated with those alternatives. Provide the reasons for their dismissal.

Non-regulatory options are not available.

This final rulemaking is part of the Commonwealth's efforts to achieve emission reductions necessary to attain and maintain the health-based ozone air quality standard. In order for the emissions reductions to be included in the SIP, they must be enforceable. Regulatory requirements are necessary to assure this enforceability.

(23) Describe alternative regulatory schemes considered and the costs associated with those schemes. Provide the reasons for their dismissal.
The proposed regulation would have affected all solvent cleaning activities. In the final regulation the applicability of the requirements is restricted to the cleaning of metal parts by use of VOC solvents. In addition, the final regulation provides operators with a number of compliance options. Optional compliance provisions were not included in the proposed requirements for cold cleaning units In addition, the final requirements are not applicable to units subject to the federal maximum achievable control technology (MACT) requirements.

Finally, the proposed requirement for containerizing solvent cleaning cloths for storage and disposal has been deleted from the final regulation.

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

The final regulations contain certain hardware requirements for solvent cleaning machines that are not contained in the federal requirements for machines that emit solvents other than hazardous air pollutants. These requirements are included to ensure that operators of non-VOC HAP solvent cleaning machines do not convert to non-HAP VOC solvents to avoid having to implement MACT control programs and increase emissions of ozone causing materials.

There is no federal requirement for low volatility limits for cold cleaning solvents such as that in the final regulation.

These regulations are based on the recommendations of the Southeast and Southwest Ozone Stakeholder working groups and were supported by the Reading-Lehigh Valley and Southcentral Pennsylvania Ozone Stakeholder Working Groups. The Stakeholders evaluated available strategies for attaining the health-based ozone standard in Pennsylvania and determined that the reduction of VOC emissions from solvent metal cleaning operations was an important part of the ozone attainment strategy.

The VOC emission reductions that will result form this regulation will help reduce ozone air quality and protect public health.

(25) How does the regulation compare with those of other states? Will the regulation put Pennsylvania at a competitive disadvantage with other states?

Pennsylvania industry should not be put at a competitive disadvantage due to this final regulation. Similar programs are in effect in Maryland and in Illinosi that require that cold cleaning solvent not exceed a volatility level of 1mm Hg. In addition, the Ozone Transport Region states are developing regulatory requirements similar to those contained in the final regulation for cold cleaning and vapor cleaning machines to address certain emission reduction requirements in their SIPs.

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

No.

(27) Will any public hearings or informational meetings be scheduled? Please provide the dates, times, and locations, if available.

Three public hearings were held during a sixty-one day comment period.

(28) Will the regulation change existing reporting, record keeping, or other paperwork requirements? Describe the changes and attach copies of forms or reports which will be required as a result of implementation, if available.

The final regulations require that suppliers of cold cleaning solvents provide purchasers with documentation concerning the volatility of the solvent, and the date and quantity of the purchase. This requirement can be satisfied with data contained on sales invoices and Material Safety Data Sheets, records kept in the normal course of business. Operators of vapor cleaning machines are required to keep records of solvent additions to the machine and other information related to the calculation of emissions. These are also records that are maintained in the normal course of business. No specific forms are mandated.

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

The final regulations contain provisions that:

1. Exempt small-volume cold cleaning operations containing less than 2 gallons of solvent.
2. Exempt cold cleaning operations from the solvent volatility requirements where there is a safety issue or when the machine is equipped with a higher freeboard.
3. Limit the applicability of the requirements to metal parts, exempting semi-conductor manufacturing.
4. Limit the applicability to the removal of grease, oil and soils and exempt the removal of inks, paints and other materials.
5. Limit the applicability of the requirements to machines using volatile organic compounds.
6. Exempt from the final regulations solvent cleaning machines subject to federal Maximum Achievable Control Technology requirements.

(30) What is the anticipated effective date of the regulation; the date by which compliance with the regulation will be required; and the date by which any required permits, licenses or other approvals must be obtained?

The regulation will be effective on the date of publication as final rulemaking in the *Pennsylvania Bulletin*. The volatility requirement for cold cleaners would be effective one year after publication of the final rulemaking.

No special permits or licenses are required.

(31) Provide the schedule for continual review of the regulation.

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

DL-1

FACE SHEET
FOR FILING DOCUMENTS
WITH THE LEGISLATIVE REFERENCE BUREAU

(Pursuant to Commonwealth Documents Law)

#2058

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;opy below is hereby approved as to ; and legality. Attorney General (DEPUTY ATTORNEY GENERAL) DATE OF APPROVAL heck if applicable opy not approved. Objections ttached.	Copy below is hereby certified to be a true and correct copy of a document issued, prescribed or promulgated by: DEPARTMENT OF ENVIRONMENTAL PROTECTION ENVIRONMENTAL QUALITY BOARD (AGENCY) DOCUMENT/FISCAL NOTE NO. #7-346 DATE OF ADOPTION: 9.18.01 BY: David E. Hess TITLE: DAVID E. HESS, CHAIRMAN (EXECUTIVE OFFICER, CHAIRMAN OR SECRETARY)	Copy below is hereby approved as to form and legality. Executive or Independent Agencies. BY: R. Scott Kenny 9/20/01 DATE OF APPROVAL (Deputy General Counsel) ~~(Chief Counsel, Independent Agency)~~ (Strike inapplicable title) ☐ Check if applicable. No Attorney General approval or objection within 30 days after submission.

ORDER ADOPTING REGULATIONS

DEPARTMENT OF ENVIRONMENTAL PROTECTION
ENVIRONMENTAL QUALITY BOARD

Solvent Cleaning Operations

25 Pa. Code, Chapters 121 and 129.63

Annex A

TITLE 25. ENVIRONMENTAL PROTECTION

PART I. DEPARTMENT OF ENVIRONMENTAL PROTECTION

Subpart C. PROTECTION OF NATURAL RESOURCES

ARTICLE III. AIR RESOURCES

CHAPTER 121. GENERAL PROVISIONS

§ 121.1. Definitions.

The definitions in section 3 of the act (35 P. S. § 4003) apply to this article. In addition, the following words and terms, when used in this article, have the following meanings, unless the context clearly indicates otherwise:

* * * * *

***Airless cleaning system*--A solvent cleaning machine that is automatically operated and seals at a differential pressure of 0.50 pounds per square inch gauge (psig) or less, prior to the introduction of solvent or solvent vapor into the cleaning chamber and maintains differential pressure under vacuum during all cleaning and drying cycles.**

***Airtight cleaning system*--A solvent cleaning machine that is automatically operated and seals at a differential pressure no greater than 0.50 psig, prior to the introduction of solvent or solvent vapor into the cleaning chamber and during all cleaning and drying cycles.**

* * * * *

***Batch vapor cleaning machine*--**

(i) A vapor cleaning machine in which individual parts or a set of parts move through the entire cleaning cycle before new parts are introduced into the cleaning machine.

(ii) The term includes solvent cleaning machines, such as ferris wheel cleaners or cross rod machines, that clean multiple loads simultaneously and are manually loaded.

(iii) The term does not include machines which do not have a solvent/air interface, such as airless and airtight cleaning systems.

* * * * *

Carbon adsorber--A bed of activated carbon into which an air/solvent gas-vapor stream is routed and which adsorbs the solvent on the carbon.

* * * * *

Cold cleaning machine--

(i) A device or piece of equipment, containing or using[~~,or both~~] ~~an unheated~~a non-boiling liquid which contains greater than 5% VOC [~~solvent~~] or hazardous air pollutant (HAP) by weight, in to which parts are placed to remove dirt, grease, OR oil [~~or other contaminants and coatings,~~] from the surfaces of the parts or to dry the parts.

(ii) The term does not include machines which do not have a solvent/air interface, such as airless and airtight cleaning systems.

* * * * *

Dwell--THE [H]holding OF metal parts within the freeboard area of a solvent cleaning machine [~~but~~] above the solvent vapor zone[~~. Dwell occurs after cleaning~~] to allow solvent to drain from the parts or parts baskets back into the solvent cleaning machine.

Dwell time--The period of time between when a parts basket is placed in the SOLVENT vapor zone of a batch vapor or in-line vapor cleaning machine and when solvent dripping ceases. [~~Dwell time is determined by placing a basket of parts in the vapor zone and measuring the amount of time between when the parts are placed in the vapor zone and dripping ceases.~~]

* * * * *

EXTREME CLEANING SERVICE—THE USE OF A COLD CLEANING MACHINE TO CLEAN PARTS USED IN THE MANUFACTURE OF THE FOLLOWING GASES OR TO CLEAN PARTS EXPOSED TO SUCH GASES IN MANUFACTURING, PRODUCTION, RESEARCH AND DEVELOPMENT, ANALYTICAL WORK, OR OTHER SIMILAR OPERATIONS:

(i) OXYGEN IN CONCENTRATIONS GREATER THAN 23%.
(ii) OZONE.
(iii) NITROUS OXIDE.
(iv) FLUORINE.
(v) CHLORINE.
(vi) BROMINE.
(vii) HALOGENATED COMPOUNDS.

* * * * *

Freeboard ratio--

(i) For a cold cleaning **[degreaser]** machine OR BATCH VAPOR CLEANING MACHINE, the distance from the liquid solvent IN THE IDLING MODE to the top edge of the **[degreaser][~~cold~~] cleaning machine** divided by the **[degreaser][~~width~~]** SMALLER DIMENSION of the **[~~cold~~]** cleaning machine.

(ii) For an operating**[vapor degreaser or a conveyorized degreaser] [~~batch vapor cleaning machine or an~~]** in-line vapor cleaning machine, the distance from the **[~~top of the solvent vapor layer to the top edge of the~~ [degreaser]~~vapor cleaning machine divided by the~~ [degreaser]~~ width of the vapor cleaning machine~~]** SOLVENT/AIR INTERFACE TO THE BOTTOM OF THE ENTRANCE OR EXIT OPENING, WHICHEVER IS LOWER, AS MEASURED DURING THE IDLING MODE.

Freeboard refrigeration device--A set of secondary coils mounted in the freeboard area of a solvent cleaning machine that carries a refrigerant or other chilled substance to provide a chilled air blanket above the solvent vapor. A solvent cleaning machine primary condenser which is capable of maintaining a temperature in the center of the chilled air blanket at not more than 30% of the solvent boiling point is both a primary condenser and a freeboard refrigeration device.

* * * * *

IDLING MODE—THE TIME PERIOD WHEN A SOLVENT CLEANING MACHINE IS NOT ACTIVELY CLEANING METAL PARTS AND THE SUMP HEATING COILS, IF PRESENT, ARE TURNED OFF.

* * * * *

Immersion cold cleaning machine—AN OPEN TOP cold cleaning machine in which the parts are immersed in the solvent when being cleaned.

* * * * *

In-line vapor cleaning machine--A vapor cleaning machine that uses an automated parts handling system, typically a conveyor, to automatically provide a supply of parts to be cleaned. In-line vapor cleaning machines are fully enclosed except for the conveyor inlet and exit portals.

* * * * *

Reduced room draft--Decreasing the flow or movement of air across the top of the freeboard area of a solvent cleaning machine to less than 50 feet per second (15.2 meters per second) by methods including:

(i) Redirecting fans or air vents, or both.

(ii) Moving a machine to a corner where there is less room draft.

(iii) Constructing a partial or complete enclosure.

* * * * *

Remote reservoir cold cleaning machine--A machine in which liquid solvent is pumped to a sink-like work area that immediately drains solvent back into an enclosed container OR BENEATH A SOLVENT COVER while parts are being cleaned, allowing no solvent to pool in the work area.

* * * * *

Solvent/air interface—[~~The location of contact between the concentrated solvent vapor layer and the air. This location of contact is defined as the mid-line height of the primary condenser coils. For a cold cleaning machine, it is the location of contact between the liquid solvent and the air.~~] FOR A VAPOR CLEANING MACHINE, THE LOCATION OF CONTACT BETWEEN THE CONCENTRATED SOLVENT LAYER AND THE AIR. THIS LOCATION OF CONTACT IS THE MIDLINE HEIGHT OF THE PRIMARY CONDENSER COILS. FOR A COLD CLEANING MACHINE, THE LOCATION OF CONTACT BETWEEN THE LIQUID SOLVENT AND THE AIR.

Solvent cleaning machine--

(i) A device or piece of equipment that uses solvent liquid or vapor to remove contaminants, such as dirt, grease, AND oil [~~and coatings~~] from the surfaces of materials.

(ii) Types of solvent cleaning machines include:

(A) Batch vapor cleaning machines.

(B) In-line vapor cleaning machines.

(C) Immersion cold cleaning machines.

(D) Remote reservoir cold cleaning machines.

(E) Airless cleaning systems.

(F) Air-tight cleaning systems.

Solvent cleaning machine automated parts handling system--A mechanical device that carries all parts and parts baskets at a controlled speed from the initial loading of soiled or wet parts through the removal of the cleaned or dried parts.

Solvent cleaning machine down time--The period when a solvent cleaning machine is not cleaning parts and the sump heating coils, if present, are turned off.

[~~*Solvent cleaning machine idle time*--The period when a solvent cleaning machine is not actively cleaning parts and the sump heating coil, if present, is turned on.~~]

* * * * *

SOLVENT VAPOR ZONE—FOR A VAPOR CLEANING MACHINE, THE AREA THAT EXTENDS FROM THE LIQUID SOLVENT SURFACE TO THE LEVEL THAT SOLVENT VAPOR IS CONDENSED. THIS LEVEL IS DEFINED AS THE MIDLINE HEIGHT OF THE PRIMARY CONDENSER COILS.

* * * * *

Superheated vapor system--A system that heats the solvent vapor to a temperature 10° F above the solvent's boiling point. Parts are held in the superheated vapor before exiting the machine to evaporate the liquid solvent on the parts.

* * * * *

Vapor cleaning machine--

(i) A solvent cleaning machine that boils liquid solvent, generating a vapor [~~or that heats liquid solvent~~] that is used as part of the cleaning or drying cycle.

(ii) The term does not include machines which do not have a solvent/air interface, such as airless and air-tight cleaning systems.

Vapor cleaning machine primary condenser--A series of circumferential cooling coils on a vapor cleaning machine through which a chilled substance is circulated or recirculated to provide continuous condensation of rising solvent vapors, and thereby, creating a concentrated vapor zone.

* * * * *

VAPOR PRESSURE--THE PRESSURE EXERTED BY A VAPOR IN EQUILIBRIUM WITH ITS SOLID OR LIQUID PHASE.

* * * * *

Vapor up control switch--A thermostatically controlled switch which shuts off or prevents condensate from being sprayed when there is no vapor. On in-line vapor cleaning machines, the switch also prevents the conveyor from operating when there is no vapor.

* * * * *

Working mode cover--Any cover or solvent cleaning machine design that allows the cover to shield the cleaning machine openings from outside air disturbances while parts are being cleaned in the cleaning machine. A cover that is used during the working mode is opened only during parts entry and removal.

* * * * *

CHAPTER 129. STANDARDS FOR SOURCES

SOURCES OF VOCs

(*Editor's Note:* The Board is deleting the text of the existing section, found at 25 Pa. Code pages 129-29 to 129-31, serial pages (199533) to (199553), and replacing it with the following. This new section is being printed in regular type to enhance readability.)

§ 129.63. [Degreasing operations]**VOC CLEANING OPERATIONS.**

(a) *Cold cleaning machines.* **EXCEPT FOR THOSE SUBJECT TO THE FEDERAL NESHAP FOR HALOGENATED SOLVENT CLEANERS UNDER 40 CFR PART 63,** this subsection applies to cold cleaning machines **THAT USE 2 GALLONS OR MORE OF SOLVENTS CONTAINING GREATER THAN 5% VOC CONTENT BY WEIGHT FOR THE CLEANING OF METAL PARTS.**

(1) Immersion cold cleaning machines shall have a freeboard ratio of **[~~0.75~~]** **0.50** or greater.

(2) Immersion cold cleaning machines and remote reservoir cold cleaning machines shall:

(i) Have a permanent, conspicuous label summarizing the operating requirements in paragraph (3)**. IN ADDITION, THE LABEL SHALL INCLUDE THE FOLLOWING DISCRETIONARY GOOD OPERATING PRACTICES:**

(A) CLEANED PARTS SHOULD BE DRAINED AT LEAST 15 SECONDS OR UNTIL DRIPPING CEASES, WHICHEVER IS LONGER. PARTS HAVING CAVITIES OR BLIND HOLES SHALL BE TIPPED OR ROTATED WHILE THE PART IS DRAINING. DURING THE DRAINING, TIPPING OR ROTATING, THE PARTS SHOULD BE POSITIONED SO THAT SOLVENT DRAINS DIRECTLY BACK TO THE COLD CLEANING MACHINE.

(B) WHEN A PUMP-AGITATED SOLVENT BATH IS USED, THE AGITATOR SHOULD BE OPERATED TO PRODUCE A ROLLING MOTION OF THE SOLVENT WITH NO OBSERVABLE SPLASHING OF THE SOLVENT AGAINST THE TANK WALLS OR THE PARTS BEING CLEANED.

(C) WORK AREA FANS SHOULD BE LOCATED AND POSITIONED SO THAT THEY DO NOT BLOW ACROSS THE OPENING OF THE DEGREASER UNIT.

(ii) Be equipped with a cover that shall be closed at all times except during cleaning of parts or the addition or removal of solvent. For remote reservoir cold cleaning machines which drain directly into the solvent storage reservoir, a perforated drain with a diameter of not more than 6 inches shall constitute an acceptable cover.

(3) Cold cleaning machines shall be operated in accordance with the following procedures:

(i) Waste solvent shall be collected and stored in closed containers. The closed containers may contain a device that allows pressure relief, but does not allow liquid solvent to drain from the container.

~~[(ii) Cleaned parts shall be drained at least 15 seconds or until dripping ceases, whichever is longer. Parts having cavities or blind holes shall be tipped or rotated while the part is draining. During the draining, tipping or rotating, the parts shall be positioned so that solvent drains directly back to the cold cleaning machine.]~~

[~~(iii)~~] **(ii)** Flushing of parts using a flexible hose or other flushing device shall be performed only within the cold cleaning machine. The solvent spray shall be a solid fluid stream, not an atomized or shower spray.

[~~(iv)~~] **(iii)** Sponges, fabric, wood, leather, paper products and other absorbent materials shall not be cleaned in the cold cleaning machine.

~~[(v)]~~ **(iv)** ~~When a pump-agitated solvent bath is used, the agitator shall be operated to produce a rolling motion of the solvent with no observable splashing of the solvent against the tank walls or the parts being cleaned.~~] Air agitated solvent baths **[may]** **SHALL** not be used.

[~~(vi)~~] **(v)** Spills during solvent transfer and use of the cold cleaning machine shall be cleaned up immediately. ~~[, and the wipe rags or other sorbent material shall be immediately stored in covered containers for disposal or recycling.]~~

~~[(vii) Work area fans shall be located and positioned so that they do not blow across the opening of the degreaser unit.]~~

(4) After _____ (*Editor's Note:* The blank refers to a date 1 year from effective date of adoption of this proposal.), a person may not use, sell or offer for sale for use in a cold cleaning machine any solvent with a vapor pressure of **[~~2.0~~]** **1.0** millimeter**[s]** of mercury (mm Hg) or greater and containing greater than 5% VOC content by weight, measured at 20°C (68°F) containing VOCs.

~~[(5) After _____ (*Editor's Note:* The blank refers to a date 2 years from the effective date of adoption of this proposal.), a person may not use, sell or offer~~

~~for sale for use in an cold cleaning machine a solvent with a vapor pressure of 1.0 mm Hg or greater, measured at 20°C (68° F) containing VOCs.]~~

[~~(6)~~] (5) On and after _____ (*Editor's Note:* The blank refers to a date 1 year from the effective date of adoption of this proposal.), a person who sells or offers for sale any solvent containing VOCs for use in a cold cleaning machine shall provide, to the purchaser, the following written information:

(i) The name and address of the solvent supplier.

(ii) The type of solvent including the product or vendor identification number.

(iii) The vapor pressure of the solvent measured in mm hg at 20°C (68°F).

[~~(7)~~] (6) A person who operates a cold cleaning machine shall maintain for at least 2 years and shall provide to the Department, on request, the information specified in paragraph (6). An invoice, bill of sale, certificate that corresponds to a number of sales, Material Safety Data Sheet (MSDS), or other appropriate documentation acceptable to the Department may be used to comply with this section.

(7) THE PROVISIONS OF PARAGRAPH (4) DO NOT APPLY:

(i) TO COLD CLEANING MACHINES USED IN EXTREME CLEANING SERVICE.

(ii) IF THE OWNER OR OPERATOR OF THE COLD CLEANING MACHINE DEMONSTRATES, AND THE DEPARTMENT APPROVES IN WRITING, THAT COMPLIANCE WITH PARAGRAPH (4) WILL RESULT IN UNSAFE OPERATING CONDITIONS.

(iii) TO IMMERSION COLD CLEANING MACHINES WITH A FREEBOARD RATIO EQUAL TO OR GREATER THAN 0.50.

(b) *Batch vapor cleaning machines.* **EXCEPT FOR THOSE SUBJECT TO THE FEDERAL NESHAP FOR HALOGENATED SOLVENT CLEANERS UNDER 40 CFR PART 63,** this subsection applies to batch vapor cleaning machines **THAT USE SOLVENT CONTAINING GREATER THAN 5% VOC CONTENT BY WEIGHT FOR THE CLEANING OF METAL PARTS.**

(1) Batch vapor cleaning machines shall be equipped with:

(i) Either a fully enclosed design or a working and downtime mode cover that completely covers the cleaning machine openings when in place, is free of cracks, holes and other defects, and can be readily opened or closed without disturbing the vapor zone. If the solvent cleaning machine opening is greater than 10 square feet,

the cover shall be powered. If a lip exhaust is used, the closed cover shall be below the level of the lip exhaust.

(ii) Sides which result in a freeboard ratio greater than or equal to 0.75.

(iii) A safety switch (thermostat and condenser flow switch) which shuts off the sump heat if the coolant is not circulating.

(iv) A vapor up control switch which shuts off the spray pump if vapor is not present. **A VAPOR UP CONTROL SWITCH IS NOT REQUIRED IF THE VAPOR CLEANING MACHINE IS NOT EQUIPPED WITH A SPRAY PUMP.**

(v) An automated parts handling system which moves the parts or parts baskets at a speed of 11 feet (3.4 meters) per minute or less when the parts are entering or exiting the vapor zone. If the parts basket or parts being cleaned occupy more than 50% of the solvent/air interface area, the speed of the parts basket or parts may not exceed 3 feet per minute.

(vi) A device that shuts off the sump heat if the sump liquid solvent level drops to the sump heater coils.

(vii) A vapor level control device that shuts off the sump heat if the vapor level in the vapor cleaning machine rises above the height of the primary condenser.

(viii) A permanent, conspicuous label summarizing the operating requirements in paragraph (4).

(2) In addition to the requirements of paragraph (1), the operator of a batch vapor cleaning machine with a solvent/air interface area of 13 square feet or less shall implement one of the following options:

(i) A working mode cover, freeboard ratio of 1.0, and superheated vapor.

(ii) A freeboard refrigeration device and superheated vapor.

(iii) A working mode cover and a freeboard refrigeration device.

(iv) Reduced room draft, freeboard ratio of 1.0 and superheated vapor.

(v) A freeboard refrigeration device and reduced room draft.

(vi) A freeboard refrigeration device and a freeboard ratio of 1.0.

(vii) A freeboard refrigeration device and dwell.

(viii) Reduced room draft, dwell and a freeboard ratio of 1.0.

(ix) A freeboard refrigeration device and a carbon adsorber which reduces solvent emissions in the exhaust to a level not to exceed 100 ppm at any time.

(x) A freeboard ratio of 1.0, superheated vapor and a carbon adsorber.

(3) In addition to the requirements of paragraph (1), the operator of a batch vapor cleaning machine with a solvent/air interface area of greater than 13 square feet shall use one of the following devices or strategies:

(i) A freeboard refrigeration device, a freeboard ratio of 1.0 and superheated vapor.

(ii) Dwell, a freeboard refrigeration device and reduced room draft.

(iii) A working mode cover and a freeboard refrigeration device and superheated vapor.

(iv) Reduced room draft, freeboard ratio of 1.0 and superheated vapor.

(v) A freeboard refrigeration device, reduced room draft and superheated vapor.

(vi) A freeboard refrigeration device, reduced room draft and a freeboard ratio of 1.0.

(vii) A freeboard refrigeration device, superheated vapor and a carbon adsorber which reduces solvent emissions in the exhaust to a level not to exceed 100 ppm at any time.

(4) Batch vapor cleaning machines shall be operated in accordance with the following procedures:

(i) Waste solvent, still bottoms and sump bottoms shall be collected and stored in closed containers. The closed containers may contain a device that allows pressure relief, but does not allow liquid solvent to drain from the container.

(ii) Cleaned parts shall be drained at least 15 seconds or until dripping ceases, whichever is longer. Parts having cavities or blind holes shall be tipped or rotated while the part is draining. A superheated vapor system shall be an acceptable alternate technology.

(iii) Parts baskets or parts may not be removed from the batch vapor cleaning machine until dripping has ceased.

(iv) Flushing or spraying of parts using a flexible hose or other flushing device shall be performed within the vapor zone of the batch vapor cleaning machine or within a section of the machine that is not exposed to the ambient air. The solvent spray shall be a solid fluid stream, not an atomized or shower spray.

(v) Sponges, fabric, wood, leather, paper products and other absorbent materials may not be cleaned in the batch vapor cleaning machine.

(vi) Spills during solvent transfer and use of the batch vapor cleaning machine shall be cleaned up immediately.~~[Wipe rags or other sorbent material shall be immediately stored in covered containers for disposal or recycling.]~~

(vii) Work area fans shall be located and positioned so that they do not blow across the opening of the batch vapor cleaning machine.

(viii) During startup of the batch vapor cleaning machine the primary condenser shall be turned on before the sump heater.

(ix) During shutdown of the batch vapor cleaning machine, the sump heater shall be turned off and the solvent vapor layer allowed to collapse before the primary condenser is turned off.

(x) When solvent is added to or drained from the batch vapor cleaning machine, the solvent shall be transferred using threaded or other leakproof couplings and the end of the pipe in the solvent sump shall be located beneath the liquid solvent surface.

(xi) The working and downtime covers shall be closed at all times except during parts entry and exit from the machine, during maintenance of the machine when the solvent has been removed, and during addition of solvent to the machine.

(c) *In-line vapor cleaning machines.* **EXCEPT FOR THOSE SUBJECT TO THE FEDERAL NESHAP FOR HALOGENATED SOLVENT CLEANERS UNDER 40 CFR PART 63,** this section applies to in-line vapor cleaning machines **THAT USE SOLVENT CONTAINING GREATER THAN 5% VOC CONTENT BY WEIGHT FOR THE CLEANING OF METAL PARTS.**

(1) In-line vapor cleaning machines shall be equipped with:

(i) Either a fully enclosed design or a working and downtime mode cover that completely covers the cleaning machine openings when in place, is free of cracks, holes and other defects, and can be readily opened or closed without disturbing the vapor zone.

(ii) A switch (thermostat and condenser flow switch) which shuts off the sump heat if the coolant is not circulating.

(iii) Sides which result in a freeboard ratio greater than or equal to 0.75.

(iv) A vapor up control switch

(v) An automated parts handling system which moves the parts or parts baskets at a speed of 11 feet (3.4 meters) per minute or less when the parts are entering or exiting the vapor zone. If the parts basket or parts being cleaned occupy more than 50% of the solvent/air interface area, the speed of the parts basket or parts may not exceed 3 feet per minute.

(vi) A device that shuts off the sump heat if the sump liquid solvent level drops to the sump heater coils.

(vii) A vapor level control device that shuts off the sump heat if the vapor level in the vapor cleaning machine rises above the height of the primary condenser.

(viii) A permanent, conspicuous label summarizing the operating requirements in paragraph (3).

(2) In addition to the requirements of paragraph (1), the operator of an in-line vapor cleaning machine shall use one of the following devices or strategies:

(i) A freeboard ratio of 1.0 and superheated vapor.

(ii) A freeboard refrigeration device and a freeboard ratio of 1.0.

(iii) Dwell and a freeboard refrigeration device.

(iv) Dwell and a carbon adsorber which reduces solvent emissions in the exhaust to a level not to exceed 100 ppm at any time.

(3) In-line vapor cleaning machines shall be operated in accordance with the following procedures:

(i) Waste solvent, still bottoms and sump bottoms shall be collected and stored in closed containers. The closed containers may contain a device that allows pressure relief, but does not allow liquid solvent to drain from the container.

(ii) Parts shall be oriented so that the solvent drains freely from the parts. Cleaned parts shall be drained at least 15 seconds or until dripping ceases, whichever is longer. Parts having cavities or blind holes shall be tipped or rotated while the part is draining.

(iii) Parts baskets or parts may not be removed from the in-line vapor cleaning machine until dripping has ceased.

(iv) Flushing or spraying of parts using a flexible hose or other flushing device shall be performed within the vapor zone of the in-line vapor cleaning machine or within a section of the machine that is not exposed to the ambient air. The solvent spray shall be a solid fluid stream, not an atomized or shower spray.

(v) Sponges, fabric, wood, leather, paper products and other absorbent materials may not be cleaned in the in-line vapor cleaning machine.

(vi) Spills during solvent transfer and use of the in-line vapor cleaning machine shall be cleaned up immediately. **[~~and the wipe rags or other sorbent material shall be immediately stored in covered containers for disposal or recycling.~~]**

(vii) Work area fans shall be located and positioned so that they do not blow across the in-line vapor cleaning machine.

(viii) During startup of the in-line vapor cleaning machine the primary condenser shall be turned on before the sump heater.

(ix) During shutdown of the in-line vapor cleaning machine, the sump heater shall be turned off and the solvent vapor layer allowed to collapse before the primary condenser is turned off.

(x) Spraying operations shall be done in the vapor zone or within a section of the machine that is not exposed to the ambient air.

(xi) When solvent is added to or drained from the in-line vapor cleaning machine, the solvent shall be transferred using threaded or other leakproof couplings and the end of the pipe in the solvent sump shall be located beneath the liquid solvent surface.

(d) *Airless cleaning machines and airtight cleaning machines.* **EXCEPT FOR THOSE SUBJECT TO THE FEDERAL NESHAP FOR HALOGENATED SOLVENT CLEANERS UNDER 40 CFR PART 63,** this section applies to airless cleaning machines and airtight cleaning machines **THAT USE SOLVENT CONTAINING GREATER THAN 5% VOC CONTENT BY WEIGHT FOR THE CLEANING OF METAL PARTS.**

(1) The operator of each machine shall maintain a log of solvent additions and deletions for each machine including the weight of solvent contained in activated carbon or other sorbent material used to control emissions from the cleaning machine.

(2) The operator of each machine shall demonstrate that the emissions from each machine, on a 3-month rolling average, are equal to or less than the allowable limit determined by the use of the following equation:

$$EL = 330\ (vol)^{0.6}$$

where:

EL = the 3-month rolling average monthly emission limit (kilograms/month).

vol = the cleaning capacity of machine (cubic meters)

~~[(3) The operator of each machine shall operate the machine in conformance with the manufacturer's instructions and good air pollution control practices.]~~

[~~(4)~~] (3) The operator of each machine equipped with a solvent adsorber shall measure and record the concentration of solvent in the exhaust of the carbon adsorber weekly with a colorimetric detector tube designed to measure a concentration of 100 ppm by volume of solvent to air at an accuracy of ± 25 ppm by volume. This test shall be conducted while the solvent cleaning machine is in the working mode and is venting to the adsorber.

[~~(5)~~] (4) The operator of each machine equipped with a solvent adsorber shall maintain and operate the machine and adsorber system so that emissions from the adsorber exhaust do not exceed 100 ppm by volume measured while the solvent cleaning machine is in the working mode and is venting to the adsorber.

[~~(6)~~] (5) The machine shall be equipped with a permanent, conspicuous label summarizing the operating requirements in paragraph (5).

[~~(7)~~] (6) Airless cleaning machines and airtight cleaning machines shall be operated in accordance with the following procedures:

(i) Waste solvent, still bottoms and sump bottoms shall be collected and stored in closed containers. The closed containers may contain a device that allows pressure relief, but does not allow liquid solvent to drain from the container.

(ii) Parts shall be oriented so that the solvent drains freely from the parts. Cleaned parts shall be drained at least 15 seconds or until dripping ceases, whichever is longer. Parts having cavities or blind holes shall be tipped or rotated while the part is draining.

(iii) Parts baskets or parts may not be removed from the in-line vapor cleaning machine until dripping has ceased.

(iv) Sponges, fabric, wood, leather, paper products and other absorbent materials may not be cleaned in the airless cleaning machines and airtight cleaning machines.

(v) Spills during solvent transfer and use of the airless cleaning machines and airtight cleaning machines shall be cleaned up immediately.[~~and the wipe rags or~~

~~other sorbent material shall be immediately stored in covered containers for disposal or recycling.]~~

(vi) Work area fans shall be located and positioned so that they do not blow across the airless cleaning machine and airtight cleaning machine.

(vii) Spraying operations shall be done in the vapor zone or within a section of the machine that is not exposed to the ambient air.

(viii) When solvent is added to or drained from the airless cleaning machine and airtight cleaning machine, the solvent shall be transferred using threaded or other leakproof couplings and the end of the pipe in the solvent sump shall be located beneath the liquid solvent surface.

~~[(c) Hand-wipe cleaning operations. The following applies to hand-wipe cleaning operations using cleaning solvents containing greater than 5% VOC or HAP by weight. Cloths, rags, paper towels and other fabrics used for hand-wipe cleaning shall be placed in closed containers for disposal or recycling.]~~

[~~(f)~~] (e) *Alternative provisions for solvent cleaning machines.* This section applies to all solvent cleaning machines **USED TO PROCESS METAL PARTS THAT USE SOLVENTS CONTAINING GREATER THAN 5% VOC CONTENT BY WEIGHT.** As an alternative to complying with subsections [~~(a)~~] (b)--(d), the operator of a solvent cleaning machine may demonstrate compliance with paragraph (1) or (2). The operator shall maintain records sufficient to demonstrate compliance. The records shall include, at a minimum, the quantity of solvent added to and removed from the solvent cleaning machine, the dates of the addition and removal and shall be maintained for not less than 2 years.

(1) If the solvent cleaning machine has a solvent/air interface, the owner or operator shall:

(i) Maintain a log of solvent additions and deletions for each solvent cleaning machine.

(ii) Ensure that the emissions from each solvent cleaning machine are equal to or less than the applicable emission limit presented in ~~[the following table]~~ **TABLE 1:**

TABLE 1

Emission Limits for Solvent Cleaning Machines with a Solvent/Air Interface

Solvent cleaning machine	*3-month rolling average monthly emission limit*	
	(kg/m²/month)	*lb/ft²/month*
Batch vapor solvent cleaning machines	150	30.7
Existing in-line solvent cleaning machines	153	31.3
In-line solvent cleaning machines installed after the effective date of the regulation	99	20.2

(2) If the solvent cleaning machine is a batch vapor cleaning machine and does not have a solvent/air interface, the owner or operator shall:

(i) Maintain a log of solvent additions and deletions for each solvent cleaning machine.

(ii) Ensure that the emissions from each solvent cleaning machine are equal to or less than the appropriate limits as described in paragraphs (3) and (4).

(3) For solvent cleaning machines without a solvent/air interface with a cleaning capacity that is less than or equal to 2.95 cubic meters, the emission limit shall be determined using Table ~~[IV]~~ 2 or the equation in paragraph (4). If the table is used, and the cleaning capacity of the cleaning machine falls between two cleaning capacity sizes, the lower of the two emission limits applies.

(4) For cleaning machines without a solvent/air interface with a cleaning capacity that is greater than 2.95 cubic meters, the emission limit shall be determined using the following equation.

$$EL = 330\ (vol)^{0.6}$$

where:

EL = the 3-month rolling average monthly emission limit (kilograms/month)

vol = the cleaning capacity of machine (cubic meters)

(5) Each owner or operator of a batch vapor or in-line solvent cleaning machine complying with this subsection shall demonstrate compliance with the applicable 3-month rolling average monthly emission limit on a monthly basis. If the applicable 3-month rolling average emission limit is not met, an exceedance has occurred.

Exceedances shall be reported to the Department within 30 days of the determination of the exceedance.

TABLE ~~[6]~~ 2. EMISSION LIMITS FOR SOLVENT CLEANING MACHINE WITHOUT A SOLVENT/AIR INTERFACE

Cleaning capacity (cubic meters)	3-Month rolling average monthly emission limit (kilograms/month)	Cleaning capacity (cubic meters)	3-Month rolling average monthly emission limit (kilograms/month)	Cleaning capacity (cubic meters)	3-Month rolling average monthly emission limit (kilograms/month)
0.00	0	1.00	330	2.00	500
0.05	55	1.05	340	2.05	508
0.10	83	1.10	349	2.10	515
0.15	106	1.15	359	2.15	522
0.20	126	1.20	368	2.20	530
0.25	144	1.25	377	2.25	537
0.30	160	1.30	386	2.30	544
0.35	176	1.35	395	2.35	551
0.40	190	1.40	404	2.40	558
0.45	204	1.45	412	2.45	565
0.50	218	1.50	421	2.50	572
0.55	231	1.55	429	2.55	579
0.60	243	1.60	438	2.60	585
0.65	255	1.65	446	2.65	592
0.70	266	1.70	454	2.70	599
0.75	278	1.75	462	2.75	605
0.80	289	1.80	470	2.80	612
0.85	299	1.85	477	2.85	619
0.90	310	1.90	485	2.90	625
0.95	320	1.95	493	2.95	632

Notice of Final Rulemaking
Department of Environmental Protection
Environmental Quality Board
25 *Pa. Code* Chapters 121 and 129
Solvent Cleaning Operations

Order

The Environmental Quality Board (Board) by this Order amends 25 *Pa. Code* Chapters 121 (relating to definitions) and 129 (relating to standards for sources) as set forth in Annex A.

The final rulemaking adds and revises definitions for terms in Chapter 121 that are used in the substantive sections of Chapter 129. A new Section 129.63 changes the current Section 129.63 in order to update equipment requirements for solvent cleaning machines to make the requirements consistent with current technology. In addition, the operating requirements in Section 129.63 are revised to specify improved operating practices. The final revisions also specify volatility limits for solvents used in cold cleaning machines.

This order was adopted by the Board at its meeting of September 18, 2001.

A. Effective Date

These amendments will be effective upon publication in the *Pennsylvania Bulletin* as final rulemaking.

B. Contact Persons

For further information, contact Terry Black, Chief, Regulation and Policy Development Section, Division of Compliance Enforcement, Bureau of Air Quality, 12th Floor, Rachel Carson State Office Building, P.O. Box 8468, Harrisburg, PA 17105-8468, telephone: 717-787-1663 or R. A. Reiley, Assistant Counsel, Bureau of Regulatory Counsel, Office of Chief Counsel, 9th Floor, Rachel Carson State Office Building, P.O. Box 8464, Harrisburg, PA 17105-8464, telephone: 717-787-7060.

C. Statutory Authority

This action is being taken under the authority of Section 5 of the Air Pollution Control Act (35 P.S. §4005) which grants the Board the authority to adopt regulations for the prevention, control, reduction, and abatement of air pollution.

D. Background of the Amendments

The purpose of this final rulemaking is to reduce volatile organic compounds (VOCs) emitted from solvent cleaning operations. This regulation is a part of Pennsylvania's plan to achieve and maintain the National Ambient Air Quality Standard (NAAQS) for ozone in the Commonwealth. These recommendations were supported by the Reading-Lehigh Valley and Southcentral Ozone Stakeholder Groups, which met subsequent to the proposed rulemaking. The final rulemaking is based on the recommendations of the Southwest and Southeast Pennsylvania Ozone Stakeholders Working Groups, which recommended that the Department revise the requirements relating to use of solvents for cleaning of parts in order to reduce emissions of ozone precursors.

The final rulemaking revises requirements for the operation of solvent cleaning machines. In general, industry uses two types of solvent cleaning machines – vapor and cold cleaning. Based on available inventory data and information, the Department estimates that there are fewer than 100 vapor machines and over 71,000 cold cleaning machines in Pennsylvania. Solvent cleaning machines are used in a variety of settings including auto repair facilities, manufacturing operations, and maintenance shops at commercial, industrial, and institutional facilities. These requirements only apply to those operations that use solvents containing greater than 5% VOC content by weight for the cleaning of metal parts. In addition, the final rulemaking exempts solvent cleaning machines that are subject to the federal Maximum Achievable Control Technology (MACT).

The final rulemaking provides operators of solvent cleaning machines a choice of compliance options for meeting the requirements of this regulation. In general, owners and operators of affected solvent cleaning machines can either implement a program using low volatility solvents or they can assure that the affected units meet specific hardware requirements. These compliance options will reduce the evaporative loss of solvents, which will improve air quality and reduce operating costs.

The final rulemaking is based, in part, on the recommendations of a separate, technical workgroup formed to consider the recommendations of the Southeast and Southwest Ozone Stakeholder Working Groups. These groups consisted of representatives of the major equipment and solvent suppliers, the automotive service industry, environmental groups and regulatory agencies. The regulations were developed taking into account technology, environmental, economic, and enforcement considerations. These groups also believe that the best way to implement the regulation is through an outreach and education program to the users of solvent cleaning equipment, particularly small businesses.

Some of the VOC control requirements in the final regulation are more stringent than the control requirements in the federal Control Techniques

Guidelines issued in November of 1977. Both the technical workgroup and the stakeholders determined that these revised control requirements were necessary for solvent cleaning operations to enable the Commonwealth to attain and maintain the ozone NAAQS.

Specifically, the proposed revisions include requirements adopted in the federal MACT standard for solvent cleaning operations utilizing non-hazardous air pollutant (HAP) VOC solvents, as well as HAP VOC solvents. These provisions will discourage operators from converting to non-HAP VOC solvents in order to avoid the more stringent MACT requirements, which could adversely affect air quality.

The Department worked with the Air Quality Technical Advisory Committee (AQTAC) in the development of these regulations. At its May 24, 2001 meeting, AQTAC discussed certain provisions related to mandatory operating requirements for cold cleaners. These provisions related to the specified minimum requirements for draining of parts, location of work area fans, and the operation of pump agitators in solvent baths. The Committee concluded that these provisions were too subjective to be included as enforceable provisions in the regulations. Therefore, these provisions were deleted from the final rulemaking, but will be included in outreach information as suggestions for operators to minimize emissions.

E. Summary of Regulatory Revisions

The final rulemaking amends Chapter 121 by adding and revising definitions of the terms used in the substantive provisions of Chapter 129. The new definitions include: "airless cleaning system", "airtight cleaning system", "batch vapor cleaning machine", "carbon adsorber", "cold cleaning machine", "dwell", "dwell time", "extreme cleaning service", "freeboard refrigeration device", "idling mode", "immersion cold cleaning machine", "in-line vapor cleaning machine", "reduced room draft", "remote reservoir cold cleaning machine", "solvent/air interface", "solvent cleaning machine", "solvent cleaning machine automated parts handling system", "solvent cleaning machine down time", "solvent vapor zone", "superheated vapor system", "vapor cleaning machine", "vapor cleaning machine primary condenser", "vapor pressure", "vapor up control switch", and "working mode cover". The amended definition includes "freeboard ratio". The definition of "solvent cleaning machine idle time" is deleted. Proposed revisions to the definition of "hand-wipe cleaning operation" are deleted in the final rulemaking.

Except for those machines subject to the federal NESHAP for halogenated solvent cleaners under 40 CFR Part 63, the changes to Section 129.63(a)-(c) and the addition of (d) apply to cold cleaning machines, batch vapor cleaning machines, in-line vapor cleaning machines, airless cleaning machines, and airtight cleaning machines that use solvents containing greater than 5% VOC content by weight to process metal parts. These revisions update equipment requirements for these

solvent cleaning machines in order to make the equipment requirements consistent with current technology. These equipment specifications are consistent with the federal MACT requirements for solvent cleaning machines. However, as described in Section D of this order, these revisions are, in part, more stringent than the control requirements in the federal control techniques guidelines. Finally, new Section 129.63(e) proposes to specify volatility limits for solvents in certain cleaning machines. There are no federal volatility limits for solvents.

Specifically, Section 129.63(a) applies to cold cleaning machines. However, certain types of operations are exempt from some of these requirements, like cold cleaning machines used in extreme cleaning service and where compliance would result in unsafe operating conditions.

Section 129.63(b) applies to batch vapor cleaning machines.

Section 129.63(c) applies to in-line vapor cleaning machines.

Section 129.63(d) applies to airless cleaning machines and airtight cleaning machines.

Section 129.63(e) provides alternative provisions for solvent cleaning machines and requires operators to maintain compliance records.

This regulatory revision will be submitted to the Environmental Protection Agency as an amendment to the State Implementation Plan (SIP).

F. Comments and Responses

Following publication of the Notice of Proposed Rulemaking in the *Pennsylvania Bulletin* on August 28, 1999 (29 *Pa. B.* 4661) the Board received comments from twenty-one commentators including the Independent Regulatory Review Commission (IRRC). A summary of the comments and responses is provided below.

One commentator thinks that it may be difficult for operators to find suitable, low volatility, replacement solvents, and if they are available, they may be costly and result in production inefficiencies and quality problems.

The Board understands this concern, and the final rulemaking provides operators a choice of compliance options for cold cleaners. Operators of affected cold cleaners can either implement a program using low volatility solvents or they can assure that the affected unit meets specific hardware requirements. For most, if not all applications, however, low volatility solvents and aqueous cleaning systems can provide acceptable cleaning at an acceptable or reasonable cost, which will

alleviate cost, production and quality problems. In addition, the final rulemaking exempts machines that are subject to the federal MACT.

Several commentators believe that the proposed regulation is too broad since it extends the provisions of the federal MACT standard to all solvent cleaning operations, including those using non-HAP VOC solvents and non-VOC solvents. In addition, the commentators note that the Board has not demonstrated that these provisions, which are more restrictive than the federal requirements, are necessary to attain the NAAQS. This is contrary to Executive Order 1996-1 and Section 4.2 of the Pennsylvania Air Pollution Control Act (APCA).

The Board, in part, agrees. The final regulation applies only to those solvent cleaning machines using VOCs in the cleaning solvent. The final requirements do not apply to aqueous cleaning systems or to other cleaning systems using compounds listed by EPA as exempt by the Administrator of EPA. However, the Board believes that it is necessary to have essentially the same level of control requirements for vapor cleaning machines using non-HAP VOC solvents as for HAP VOC solvents. Lower levels of control requirements for non-HAP VOC machines could result in switching from non-VOC HAP solvents to non-HAP VOCs with the resulting potential for increased ozone formation. While the final rulemaking is, in part, more stringent than federal requirements, the emission reductions that will result from this rulemaking are a significant part of the Commonwealth's efforts to continue toward attainment and maintenance of the health-based NAAQS for ozone throughout Pennsylvania. As a result, this regulation is neither contrary to Executive Order 1996-1 nor to Section 4.2 of the APCA.

One commentator feels there is no supporting information to justify extending the requirements of the revised solvent cleaning limits beyond areas designated as moderate or severe ozone nonattainment with the 1-hour NAAQS. This regulation has been designed not only to achieve the ozone standard, but to maintain it as well. In addition, with over 75,000 solvent cleaning machines throughout the Commonwealth, the Board has determined that to limit this regulation to the Southeastern and Southwestern regions only would be inequitable since it would leave businesses in those regions at a competitive disadvantage.

One commentator thinks that the definition of "solvent" is to broad and should not include non-VOC compounds that are exempted under EPA's definition of VOC. Since this proposed rulemaking is to address ozone air quality issues, it does not seem reasonable to impose additional control requirements on materials that do not contribute to the ozone problem. Non-VOC cleaners should be exempt from the requirements.

The Board agrees. The final rulemaking has been revised to apply only to solvent cleaning machines using cleaning solvents that contain VOCs. As a result, the definition of "solvent cleaning machine" does not include non-VOC compounds.

One commentator believes the requirements of the provisions for cold cleaners should be limited to machines used for the removal of grease or contaminants, and should not extend to the removal of coatings and materials, such as photoresist, used in the electronics industry.

The Board agrees. The definition of solvent cleaning machine has been revised in the final rulemaking by removing the reference to removal of coatings. Removal of coatings, such as photoresist, is not considered solvent cleaning for purposes of this rulemaking.

Another commentator feels the provisions related to cold cleaning should be limited to the cleaning of metal parts. The Board agrees. The final rulemaking has been revised to apply only to the cleaning of metal parts.

One commentator believes that there should be a de minimis threshold for solvent cleaning machines in the proposed regulation. The Board agrees. The final rulemaking establishes a de minimis threshold for cold cleaning operations that contain 2 gallons or more of VOC solvents.

Another commentator believes the 10 square foot de minimis applicability criteria in the existing regulation should be retained because these machines do not generate significant emissions. The Board disagrees. The sheer number of small cold cleaning solvent units and the aggregate mass of emissions from these machines, based on emission factor estimates, indicates a need for measures to reduce emissions from smaller sources. In addition, the emission reductions techniques for cold cleaners, in many cases, have been implemented. The operators of small vapor cleaning machines may implement one of several compliance options or they may demonstrate that emissions meet an alternative emission limit as set forth in the regulation.

One commentator believes that the proposed rule should be no more stringent than the MACT for cold cleaners and allow the use of the six halogenated solvents covered by the MACT. The Board agrees. The final rulemaking allows the use of solvents that exceed the 1.0 mm Hg volatility limit, if the cold cleaning machine has a freeboard ratio of 0.75 or greater.

One commentator feels the final rulemaking should exempt cold cleaning machines that are covered by the MACT. In addition, MACT requirements should not be mandated for machines using non-HAP VOC solvents.

The Board, in part, agrees. Cold cleaning machines that use non-VOC solvents are not covered by the final rulemaking. However, machines using HAP or non-HAP solvents that are also VOCs are subject to the final rule. The Board believes that it is necessary to have essentially the same level of control

requirements for vapor cleaning machines using non-HAP VOC solvents as for HAP VOC solvents. Lower levels of control requirements for non-HAP machines could result in switching from non-VOC HAP solvents to VOCs, with the resulting potential for increased ozone formation. In addition, the final rulemaking has been revised to specify that cold cleaning machines subject to the MACT are exempt from the provisions of Section 129.63.

Another commentator thinks the requirement to dispose of hand-wipe cleaning rags into closed containers will prohibit air-drying of rags and increase disposal costs, particularly for small businesses.

The Board agrees. While the Board is concerned that the practice of "air drying" of solvent cleaning rags will result in the emissions of HAPs and VOCs, the Board also does not believe that imposing regulatory requirements to prohibit this practice is the best approach to the issue, and has deleted the requirement from the final rulemaking, except for aerospace operations. Hand-wipe cleaning rags in aerospace operations have been subject to requirements to store solvent-laden rags in closed containers under existing requirements, and these will be retained. For other hand-wipe activities the Board encourages, but will not require, operators to implement pollution prevention programs, including use of non-VOC and non-HAP solvents for hand-wipe cleaning.

Several commentators believe that the Board's calculation of the VOC reductions and program implementation costs are flawed. The majority of the VOC losses from cold cleaners are from drag-out and not from standing losses. Reducing the volatility of the solvent will not significantly reduce the drag-out of solvents on parts. It will only increase the parts drying time and may reduce production efficiency.

The Board disagrees. Based on information developed by Maryland and incorporated into a state implementation plan (SIP) revision approved by EPA, the Board believes that the emission reductions predicted are accurate and applicable to Pennsylvania. Costs of compliance for cold cleaning machines may, in fact, be overstated. Suppliers of solvents and machines have indicated that a significant segment of the industry has already changed solvent blends and that much of the solvent in use meets the 1 mm Hg volatility limit. These changes were made to facilitate compliance with other requirements, including those related to hazardous material transport. Therefore, the costs that were predicted for changing to low volatility solvents have in many cases already been imposed and would continue regardless of the 1 mm Hg volatility limit.

One commentator thinks the requirement for a freeboard ratio of 0.75 or greater for immersion cold cleaners will result in the replacement of a large number of serviceable cold cleaning machines at great cost to industry. The regulation should adopt a size limitation for the applicability of the 0.75 freeboard ratio.

Alternatively, the regulation should specify a freeboard ratio of 0.50 for all immersion cold cleaning machines.

The Board disagrees. The final rulemaking allows operators of cold cleaning machines the option of using low volatility (1 mm Hg) solvents in a machine with a freeboard ration of 0.5 or greater. A freeboard ratio of 0.75 or greater is required only if the solvent volatility is greater than 1 mm Hg. As a result, there will not be high cost for replacement since operators have compliance options.

Several commentators believe the provisions should provide an exemption for certain electronics manufacturing operations because low solvents are not available to meet the cleaning needs for production of silicon wafers use for semiconductors.

The Board agrees. The final rulemaking applies only to the cleaning of contaminants from metal parts. Therefore, removal of contaminants such as photoresist, during the production of silicon wafers, is not subject to these final regulations.

One commentator feels use of low vapor pressure solvents creates a substantial risk if residual solvents are exposed to reactive atmospheres. An exception should be made to the volatility requirements in the regulation if there are compelling health and safety reasons.

The Board agrees. The final rulemaking specifies safety related exemptions. Cold cleaning machines used in extreme cleaning service, i.e., highly reactive or corrosive atmospheres are exempt from the solvent volatility requirements. In addition, if the owner or operator of the cold cleaning machine demonstrates that compliance with the volatility requirements will result in unsafe operating conditions, an exemption can be granted by the Department.

One commentator feels the regulation should exempt halogenated solvent cleaning machines provided the solvent cleaning machine is subject to the federal National Emission Standard for Hazardous Air Pollutants (NESHAP), under 40 CFR Part 63.

The Board agrees. The final rulemaking has been revised to provide this exemption for all cleaning machines subject to the federal NESHAP.

One commentator feels the proposed rulemaking does not discuss the impacts of the revised regulations and applicability levels of the Department's plan approval and permitting process. Major sources will be subject to RACT, Title V, and perhaps the NESHAP.

The regulations currently exempt certain sources and classes of sources from plan approval and permitting requirements for a number of reasons, including

insignificant levels of emissions. This regulation will not alter those determinations already made under the provisions of 25 *Pa. Code* Section 127.14(a)(8). If an existing source is so large as to be considered a major source, the source could be affected by other programs such as RACT, Title V, and the NESHAP. The requirements in this regulation will affect those determinations.

The commentator indicates that the regulation will become federally enforceable as part of the SIP and that the requirements must be included in the Title V permit. This will pose compliance certification problems because of the sweeping nature of the requirements.

The Board disagrees. Whether or not the regulations are part of the SIP, the requirements will be included in the Title V permit, and the operator will be required to certify compliance. However, the final rulemaking contains a number of revisions that should minimize the compliance certification concerns. Among these are the establishment of a de minimis level of two gallons for cold cleaners and limiting the regulation's applicability to the cleaning of metal parts.

One commentator believes the Board has not explained the implications of the rulemaking for permitted sources.

The establishment of these requirements will impact only those sources with Title V permits that have more than three years remaining in the life of the permit. The Department will develop a program to minimize the impact on the facilities that are affected. The revisions do not specifically require permitting activities.

One commentator feels the Board has not identified any non-regulatory alternatives to this rulemaking or explained why it disagrees with EPA's conclusion that existing regulations are adequate to protect the public health.

The Board has determined that the emission reductions that will result from this rulemaking are a significant component of the Commonwealth's strategy to continue toward attainment and maintenance of the health-based NAAQS for ozone throughout Pennsylvania. Although certain of the requirements in the regulation may be met through voluntary measures, in order for the emission reductions to be creditable in the SIP, there must be an enforceable program to assure that they are permanent.

One commentator feels the Board has not described a compelling public interest that demands stronger regulation than the current federal standards.

The Board disagrees. Much of Pennsylvania is in nonattainment with the health-related NAAQS for ozone. Reductions of the precursors of ozone formation, VOC and oxides of nitrogen are necessary to move the Commonwealth toward attainment and maintenance of the health-related standard. Attaining and

maintaining the ambient ozone standard will reduce the incidence of respiratory problems in susceptible individuals, the young, asthmatics, the elderly and those with pre-existing respiratory problems. In addition, the emission reductions that will result from this rulemaking are a significant component of the Commonwealth's strategy to continue toward attainment and maintenance of the health-based NAAQS for ozone throughout Pennsylvania.

One commentator feels the proposed language of Section 129.63 varies from the comparable federal provisions at 40 CFR 63.463. The Department should either conform its requirements to the federal requirements or adopt the federal NESHAP by reference.

The Board agrees. The final rule exempts from the requirements of Section 129.63 those machines subject to the federal MACT. Therefore, there are no inconsistent provisions applicable to solvent cleaning machines.

One commentator thinks the Board has not identified the outreach efforts it will use to assist in the implementation of the requirements.

The Board has found that because most of the affected solvent cleaning machines are located at small businesses such as automotive repair facilities, the Department will work closely with the Small Business Compliance Assistance Program to alert these operators. In addition, because many of these machines are installed and operated under contract with service providers, the Department will coordinate its outreach efforts closely with these businesses.

One commentator feels the Board has not identified the emission reductions that will result from the implementation of the requirements.

The EPA emission factor estimates indicate that unregulated emissions from cold cleaning activities from facilities such as automobile repair facilities, where small cold cleaning units predominate, and from manufacturing cold cleaning are approximately 3.6 pounds per person per year. Based on an estimated population of 12.1 million and this emission factor, unregulated emissions are estimated to be 21,780 tons per year statewide. Based on determinations of emission reduction benefits of approximately 66 percent resulting from reduced solvent volatility for the Maryland state implementation plan (SIP) approved by EPA, the Board estimates that the requirements will result in enforceable emission reductions of approximately 14,375 tons per year statewide.

One commentator believes the Board has not explained why the proposed rulemaking requirements deviate from the federal MACT.

The Board did not intend that the requirements in the proposed rulemaking deviate from or conflict with the federal MACT. The final rulemaking has been

revised to exempt from the requirements in Section 129.63 any solvent cleaning units subject to the federal MACT.

One commentator feels the Board should assure that the regulation addresses situations where low volatility solvents or the specified compliance options are not viable options for solvent cleaning machines.

The Board agrees. The final rulemaking provides operators of affected cold cleaning machines the option of using low volatility solvent, or increasing the freeboard ratio for the machine to 0.75 or greater. In addition, affected facilities have the option of demonstrating that an alternative program is as effective as the regulation under the equivalency provisions in Section 129.51. Operators of cold cleaning machines subject to the federal MACT are not affected by the requirements of Section 129.63.

One commentator provided cost data related to development of alternative solvent programs for a number of the company's facilities. These facilities are involved in printing and surface coating operations. The company estimates total development costs of approximately $500,000 with an estimated $220,000 in annual operating costs if the company's facilities are affected by the requirements.

The Board has determined that several changes made in the final rulemaking will minimize the potential cost impact to the regulated community, including the operations at the commentator's facilities. The final rulemaking has been revised to apply only to the removal of oils, waxes, greases and soils from metal parts where VOCs are used. It does not apply to the removal of coatings and inks. In addition, the final rulemaking exempts operations that are subject to the federal NESHAP for solvent cleaning. The provisions of Section 129.51 allow an operator the option of developing an alternative compliance plan. The final rulemaking also provides exemptions based on safety considerations.

One commentator believes the requirements for recordkeeping regarding the volatility of cold cleaning solvents are redundant and should be eliminated.

The Board disagrees. The requirements for maintenance of the documentation regarding solvent volatility are retained in the final rulemaking. If the operator can retain the Material Safety Data Sheet (MSDS) on file for the solvent in use, that will be satisfactory for demonstration of compliance.

One commentator thinks the Board should revise the definition of "remote reservoir cold cleaning machine" to include certain machines that drain solvent into a covered container.

The Board agrees. The definition of "remote reservoir cold cleaning machine" has been revised in the final rulemaking to include the phrase suggested by the commentator.

One commentator thinks the Board should consider changing the title of the requirements to more accurately describe the section of the regulations.

The Board disagrees. The title of the section has been retained in the final rulemaking because the provisions could potentially relate to both VOC and non-VOC materials, especially as they relate to HAPS.

One commentator feels the definition of "freeboard ratio" should be changed to be consistent with the definition in the MACT.

The Board agrees. The definition of "freeboard ratio" has been revised in the final rulemaking to be consistent with the MACT definition.

One commentator thinks that the phrase "or that heats the solvent" in the definition of the term "vapor cleaning machine" is inconsistent with the federal definition.

The Board agrees. The technical stakeholders who worked to formulate the regulation suggested the proposed definition. In the final rulemaking the definition is revised to be consistent with the federal MACT definition.

Another commentator indicated that the definitions of "dwell" and "dwell time" are inconsistent and should be clarified in the final regulation.

The Board agrees. These terms have been clarified in the final regulation.

G. Benefits, Costs and Compliance

Executive Order 1996-1 requires a cost benefit analysis of the final regulation.

Benefits

Overall, the citizens of the Commonwealth will benefit from these recommended changes because they will result in improved air quality by reducing ozone precursor emissions, recognize and encourage pollution prevention practices, and encourage new technologies and practices which reduce emissions. Moreover, it is estimated that these proposed changes will save industry approximately $7.3 million the first year and $14.6 million annually thereafter statewide.

Compliance Costs

These regulations will slightly increase the operating costs of industry. However, the cost increase will be offset by the reduced evaporative loss of solvent which will result from the lower volatility, thereby reducing the need to purchase additional solvent.

Compliance Assistance Plan

The Department plans to educate and assist the public and the regulated community with understanding the newly revised requirements and how to comply with them. This will be accomplished through the Department's ongoing Regional Compliance Assistance Program.

Paperwork Requirements

The regulatory revisions will not increase the paperwork that is already generated during the normal course of business operations.

H. Sunset Review

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

I. Regulatory Review

Under section 5(a) of the Regulatory Review Act, (71 P.S. §745.5(a)), the Department submitted a copy of the proposed rulemaking on August 17, 1999, to the Independent Regulatory Review Commission (IRRC) and the Chairpersons of the Senate and House Environmental Resources and Energy Committees for review and comment.

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

Under section 5.1(d) of the Regulatory Review Act (71 P.S. § 745.5a(d)), on _____, these final-form regulations were deemed approved by the House and Senate Committees. Under section 5.1(e) of the Regulatory

Review Act, IRRC met on _____ and approved the final-form regulations.

J. 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. §§ 1202 and 1202) and regulations promulgated thereunder in 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 final-form regulations do not enlarge the purpose of the proposal published at 29 Pa.B. 4661 (August 28, 1999).

(4) These final-form regulations are necessary and appropriate for administration and enforcement of the authorizing acts identified in Section C of this preamble and are reasonably necessary to achieve and maintain the NAAQS for ozone.

K. Order of the Board

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

(a) The regulations of the Department, 25 *Pa. Code* Chapters 121 and 129, are amended by amending § 121.1 and by amending §§ 129.63(a)-(e) to read as set forth in Annex A with the ellipses referring to the existing text of regulations.

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

(c) The Chairperson shall submit this order and Annex A to IRRC and the Senate and House Environmental Resources and Energy Committees as required by the Regulatory Review Act.

(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) These final-form regulations are effective upon publication in the *Pennsylvania Bulletin*.

David E. Hess
Chairperson

Solvent Cleaning Operations
Comment and Response Document

May 1, 2001

Bureau of Air Quality
Department of Environmental Protection

The Environmental Quality Board (Board) published notice of the public comment period and public hearings for the Solvent Cleaning Operations proposed rulemaking in the *Pennsylvania Bulletin* on August 28, 1999 (29 *Pa. B.* 4661). The Board held three public hearings on the proposal at the following Regional Offices of the Department of Environmental Protection:

September 28, 1999

DEP Southwest Regional Office
400 Waterfront Drive
Pittsburgh, PA

October 1, 1999

DEP Southeast Regional Office
Suite 601 Lee Park
555 North Lane
Conshohocken, PA

October 5, 1999

DEP Southcentral Regional Office
Susquehanna River Conference Room
909 Elmerton Ave.
Harrisburg, PA

The public comment period for the Solvent Cleaning Operations proposed rulemaking closed on October 27, 1999. Testimony received during the public hearings and written comments received during the public comment period are summarized in this comment and response document. The identity of each commentator is indicated by the assigned number(s) in parentheses after each comment.

This is a list of corporations, organizations and interested individuals from whom the Environmental Quality Board has received comments regarding the solvent cleaning proposed regulation.

ID	Name/Address	Zip	Submitted 1 pg Summary	Provided Testimony	Req Final Rulemaking
1	Ms. Sharon Roth PA Chamber of Business & Industry One Commerce Square 417 Walnut Street Harrisburg, PA	17101		T	
2	Mr. John P. O'Sullivan Lucent Technologies Environment, Health and Safety Dept. 2525 N. 12th Street Reading, PA	19612-3396		T	
3	Mr. Charles E. Fiore Compliance Services Manager ZEP Manufacturing Company 1310 Seaboard Industrial Blvd., N.W. P.O. Box 2015 Atlanta, GA	30301			
4	Mr. David C. Ruskey Mr. Phil Wegener Mr. Paul Sargent Intersil 125 Crestwood Rd. Mountaintop, PA	18707			
5	Mr. Francis P. Rudy Sr. Environmental Coordinator Specialty Gas Division Air Products and Chemicals, Inc. P.O. Box 351, R.R. 1 Tamaqua, PA	18252	S		
6	Mr. Richard Gudz CARDONE Industries, Inc. World Headquarters 5501 Whitaker Ave. Philadelphia, PA	19124-1799	S		

ID	Name/Address	Zip	Submitted 1 pg Summary	Provided Testimony	Req Final Rulemaking
7	Graphic Arts Association c/o Mr. William J. Cluck Saul, Ewing, Remick & Saul LLP Penn National Insurance Tower 2 N. 2nd Street, 7th Fl. Harrisburg, PA	17101			
8	Lucent Technologies, Inc. c/o Mr. John W. Carroll Pepper Hamilton 200 One Keystone Plaza N. Front & Market St. P.O. Box 1181 Harrisburg, PA	17108-1181	S		
9	Mr. James J. Masiak Vice President of Manufacturing Superior Tube Company 3900 Germantown Pike Collegeville, PA	19426-3112			
10	Steven G. Olson Director DOD Regional Environmental Coordination Region III - Regional Environmental Group Commander Navy Region - Mid Atlantic Navy Public Works Center (Code 910) 9472 Maryland Ave., Ste. 211 Norfolk, VA	23511-2797			
11	Mr. Anthony M. Skicki Manager - Environmental Affairs GPU Energy 2800 Pottsville Pike Reading, PA	19640			
12	Mr. David A. Wagner Sr. Environmental Manager Safety-Kleen 1140 Greenhill Rd. West Chester, PA	19380			
13	Ms. Wendy Cooper Environmental Engineer Allegro 3900 Welsh Rd. Willow Grove, PA	19090			

ID	Name/Address	Zip	Submitted 1 pg Summary	Provided Testimony	Req Final Rulemaking
14	Mr. Sean McGowan Chairman, SSIPA Environmental Committee Carpenter Technology Corp. P.O. Box 14662 Reading, PA	19612-4662			
15	Mr. Peter A. Scaccia Director, Environment, Health & Safety Armstrong World Industries, Inc. P.O. Box 3209 Lancaster, PA	17604-3209	S		
16	Mr. Fred A. Sembach Vice President, Government Affairs Pennsylvania Chamber of Business and Industry 417 Walnut St. Harrisburg, PA	17101-1902	S		
17	Mr. Wayne A. Belko Chairman, PEA Environmental Committee Pennsylvania Electric Assn. 800 N. 3rd St., Ste. 301 Harrisburg, PA	17102	S		
18	Mr. Douglas L. Biden Secretary - Treasurer Electric Power Generation Assn. 301 APC Bldg. 800 N. 3rd St. Harrisburg, PA	17102	S		
19	Mr. David Patti President Pennsylvania Chemical Industry Council 25 N Front St., Ste. 100 Harrisburg, PA	17101			
20	The Honorable Mary Jo White Senate of Pennsylvania Room 168, Main Capitol Bldg. Harrisburg, PA	17120			
21	Independent Regulatory Review Commission 14th Floor, Harristown #2 333 Market Street Harrisburg, PA	17120			

1. **Comment:** The proposed definitions of "cold cleaning machine" and "vapor cleaning machine" are not consistent with the federal definitions. The definition of "cold cleaning machine" should be revised to encompass all non-boiling VOC solvent cleaners. This would make the definition consistent with the EPA definition and definitions in other states. (1,2,6,9,14,16,21)

   Response: The Department agrees. The definition of "cold cleaning machine" has been revised in the final rulemaking to include all non-boiling VOC solvent cleaners. Solvent cleaning machines that use heated, but non-boiling solvents, are not considered vapor cleaning machines. These changes make the Pennsylvania definitions consistent with EPA.

2. **Comment:** It may be difficult for operators to find suitable, low volatility, replacement solvents and if they are available, they may be costly and result in production inefficiencies and quality problems. (1,15,16)

   Response: The final rulemaking provides operators a choice of compliance options for cold cleaners. Operators of affected cold cleaners can either implement a program using low volatility solvents or they can assure that the affected unit meets specific hardware requirements. For most, if not all applications, however, low volatility solvents and aqueous cleaning systems can provide acceptable cleaning at an acceptable or reasonable cost, which will alleviate cost, production and quality problems. In addition, the final rulemaking exempts machines that are subject to the federal maximum achievable control technology (MACT).

3. **Comment:** The proposed regulation extends the provisions of the federal MACT standards to all solvent cleaning operations, including those using non-HAP solvents and non-VOC solvents. The Environmental Quality Board (EQB) has not demonstrated that these provisions, that are more restrictive than the federal requirements, are necessary to attain the NAAQS. This is contrary to Executive Order 1996-1 and Section 4.2 of the Pennsylvania Air Pollution Control Act (APCA). (1,2,8,13,14,16,19,21)

   Response: The Department, in part, agrees. The final regulation applies only to those solvent cleaning machines using volatile organic compounds (VOC) in the cleaning solvent. The final requirements do not apply to aqueous cleaning systems or to other cleaning systems using compounds listed by EPA as exempt by the Administrator of EPA. However, the Board believes that it is necessary to have essentially the same level of control requirements for vapor cleaning machines using non-HAP VOC solvents as for HAP VOC solvents. Lower levels of control requirements for non-HAP VOC machines could result in switching from non-VOC HAP solvents to non-HAP VOCs with the resulting potential for increased ozone formation. While the final rulemaking is, in part, more stringent than federal requirements, the emission reductions that will result from this rulemaking are a significant part of the Commonwealth's efforts to continue toward attainment and

maintenance of the health-based NAAQS for ozone throughout Pennsylvania. As a result, this regulation is not contrary to either Executive Order 1996-1 or Section 4.2 of the APCA.

4. **Comment:** There is no supporting information to justify extending the requirements of the revised solvent cleaning limits beyond areas designated as moderate or severe ozone nonattainment with the 1-hour National Ambient Air Quality Standard (NAAQS). (1,19)

   Response: With over 71, 000 solvent cleaning machines throughout the Commonwealth, the Board has determined that to limit this regulation to the Southeastern and Southwestern regions only would be inequitable since it would leave businesses in those regions at a competitive disadvantage. In addition, this regulation has been designed not only to achieve the ozone standard, but to maintain it as well.

5. **Comment:** The broad definition of "solvent" includes non-VOC compounds that are exempted under EPA's definition of VOC. Since this proposed rulemaking is to address ozone air quality issues, it does not seem reasonable to impose additional control requirements on materials that do not contribute to the ozone problem. Non-VOC cleaners should be exempt from the requirements. (1,8,14,16)

   Response: The Department agrees. The final rulemaking has been revised to apply only to solvent cleaning machines using VOC as the cleaning solvent. As a result, the definition does not include non-VOC compounds.

6. **Comment:** The requirements of the provisions for cold cleaners should be limited to machines used for the removal of grease or contaminants and should not extend to the removal of coatings and materials such as photoresist used in the electronics industry. (1,6,8,16)

   Response: The Department agrees. The definition of solvent cleaning machine has been revised in the final rulemaking by removing the reference to removal of coatings. Removal of coatings such as photoresist is not considered solvent cleaning for purposes of this rulemaking.

7. **Comment:** There is no de minimis threshold for solvent cleaning machines in the proposed regulation. (1,2,8,14,15,16)

   Response: In the final rulemaking the Department has established a de minimis threshold for cold cleaning operations. The final rulemaking applies to cold cleaning machines that contain 2 gallons or more of VOC.

8. **Comment:** The 10 square foot de minimis applicability criteria in the existing regulation should be retained because these machines do not generate significant emissions. (1,8,11,12,13,16)

   Response: The sheer number of small cold cleaning solvent units and the aggregate mass of emissions from these machines, based on emission factor estimates, indicates a need for measures to reduce emissions from smaller sources. In addition, the emission reductions techniques for cold cleaners, in many cases, have been implemented. The operators of small vapor cleaning machines may implement one of several compliance options or they may demonstrate that emissions meet an alternative emission limit as set forth in the regulation.

9. **Comment:** The proposed rule is more stringent than the MACT for cold cleaners in that it disallows the use of the six halogenated solvents covered by the MACT because their vapor pressure exceeds the levels specified in the proposed regulation. (1,2,6,16)

   Response: The final rulemaking allows the use of solvents that exceed the 1.0 mm Hg volatility limit if the cold cleaning machine has a freeboard ratio of 0.75 or greater. As a result, use of these six solvents is allowed.

10. **Comment:** The final rulemaking should exempt cold cleaning machines that are covered by the MACT. However, these MACT requirements should not be mandated for machines using non-HAP solvents. (1,2,16)

    Response: Cold cleaning machines that use non-VOC solvents are not covered by the final rulemaking. Machines using HAP solvents that are also VOC's are subject to the final rule. However, the final rulemaking has been revised to specify that cold cleaning machines subject to the MACT are exempt from the provisions of Section 129.63.

    The Department believes that it is necessary to have essentially the same level of control requirements for vapor cleaning machines using non-HAP VOC solvents as for HAP solvents. Lower levels of control requirements for non-HAP machines could result in switching from non-VOC HAP solvents to VOCs, with the resulting potential for increased ozone formation. This should not be misconstrued as the Department is encouraging the continued use of HAP solvents, but only as a measure to minimize VOC emissions to the extent practical.

11. **Comment:** The requirement to dispose of hand-wipe cleaning rags into closed containers will prohibit air drying of rags and increase disposal costs, particularly for small businesses. (1,2,16)

    Response: The Department agrees. However, the Board is concerned that the practice of "air drying" of solvent cleaning rags can result in the emissions of HAPs

and VOCs that are cost effective to control. However, at this time, the Board does not believe that imposing regulatory requirements to prohibit this practice is the best approach to the issue, and has deleted the requirement from the final rulemaking, except for aerospace operations. Hand-wipe cleaning rags in aerospace operations have been subject to requirements to store solvent-laden rags in closed containers under existing requirements, and these will be retained. For other hand-wipe activities the Department encourages, but will not require, operators to implement pollution prevention programs, including use of non-VOC and non-HAP solvents for hand-wipe cleaning.

12. **Comment:** The provisions of the regulation are internally inconsistent in that Section 129.63(f) states that "as an alternative to complying with subsections (a) through (d), the operator of a solvent cleaning machine may demonstrate compliance with paragraph (1)", an exemption based on emission limits. The proposed regulation does not provide such exemption levels for cold cleaning machines. (1,6,16)

    Response: The Department agrees. This was an error in the proposed rulemaking. The alternative compliance provisions in the proposed Section 129.63(f), new subsection (e), do not apply to cold cleaning machines. Operators of cold cleaning machines containing VOCs may either use a solvent that meets the volatility limit or may use a machine with a freeboard ratio of 0.75 or greater.

13. **Comment:** The Department's calculation of the VOC reductions and the costs for the program implementation are flawed. The majority of the VOC losses from cold cleaners are from drag-out and not from standing losses. Reducing the volatility of the solvent will not significantly reduce the drag-out of solvents on parts. It will only increase the parts drying time and may reduce production efficiency. (1,6,16)

    Response: Based on information developed by Maryland and incorporated into a state implementation plan (SIP) revision approved by EPA, the Department believes that the emission reductions predicted are accurate and applicable to Pennsylvania. Costs of compliance for cold cleaning machines may, in fact, be over-stated. Suppliers of solvents and machines have indicated that a significant segment of the industry has already changed solvent blends and that much of the solvent in use meets the 1 mm Hg volatility limit. These changes were made to facilitate compliance with other requirements, including those related to hazardous material transport. Therefore, the costs that were predicted for changing to low volatility solvents have in many cases already been imposed and would continue regardless of the 1 mm Hg volatility limit.

    For production shops, the final regulation provides the operator the alternative compliance option of using a cleaning machine freeboard of 0.75 or greater and continuing the use of the current solvent. If increased freeboard is necessary, the costs should be nominal.

14. **Comment:** Exemptions should be provided for those who use non-VOC or low volatility solvents. (1,16)

    Response: The Department agrees. The final rulemaking exempts solvent cleaning machines that use non-VOC solvents. The operating requirements applicable to those using low volatility requirements are necessary to assure that machines are operated with good operating practices. The record keeping requirements related to solvent purchases are necessary to assure that operators are being provided with solvents at the compliance levels.

15. **Comment:** Low volatility and non-VOC products are unavailable for the semiconductor and microelectronics industry that meet the stringent cleaning and production requirements of the industry. The provisions should be limited to pertain only to the removal of contaminants from metal parts or should carve out an exemption for certain electronics manufacturing operations. (2,8)

    Response: The Department agrees. The final rulemaking applies only to the cleaning of contaminants from metal parts. Therefore, removal of contaminants during the production of silicon wafers is not subject to these final regulations.

16. **Comment:** The requirement for a freeboard ratio of 0.75 or greater for immersion cold cleaners will result in the scrappage of a large number of serviceable cold cleaning machines and the resulting high cost for replacement. The regulation should adopt a size limitation for the applicability of the 0.75 freeboard ratio. Alternatively, the regulation should specify a freeboard ratio of 0.50 for all immersion cold cleaning machines. (3)

    Response: The final rulemaking allows operators of cold cleaning machines the option of using low volatility (1 mm Hg) solvents in a machine with a freeboard ration of 0.5 or greater. A freeboard ratio of 0.75 or greater is required if the solvent volatility is greater than 1 mm Hg. As a result, there will not be high cost for replacement.

17. **Comment:** The provisions should provide an exemption for certain electronics manufacturing operations because low solvents are not available to meet the cleaning needs for production of silicon wafers used for semiconductors. (4,8)

    Response: The Department agrees. The final rulemaking applies only to the cleaning of contaminants from metal parts. Therefore, removal of contaminants such as photoresist during the production of silicon wafers is not subject to these final regulations.

18. **Comment:** The removal of the 10 ft^2 applicability limit for solvent cleaning machines should be retained. Eliminating the requirement will result in overly

burdensome regulations being applied to equipment that has a relatively small impact on VOC emissions from solvent cleaning. (5,19)

Response: Individually, units smaller than 10 ft^2 are not significant sources of VOC. However, in aggregate, their emissions are significant, and reducing the VOC emissions from this class of sources is important to the Commonwealth's attaining the NAAQS for ozone. Consequently, the rulemaking will provide the 2-gallon applicability limit.

19. **Comment:** Use of low vapor pressure solvents creates a substantial risk if residual solvents are exposed to reactive atmospheres. An exception should be made to the volatility requirements in the regulation if there are compelling health and safety reasons. (5,19)

    Response: The Department agrees. The final rulemaking specifies safety related exemptions. Cold cleaning machines used in extreme cleaning service, i.e., highly reactive or corrosive atmospheres are exempt from the solvent volatility requirements. In addition, if the owner or operator of the cold cleaning machine demonstrates that compliance with the volatility requirements will result in unsafe operating conditions, an exemption can be granted by the Department.

20. **Comment:** The regulation provides alternative compliance options for other types of solvent cleaning, but not for cold cleaning machines. The regulation should provide alternative compliance options for cold cleaners. (5,19)

    Response: The final regulation provides that operators of immersion cold cleaning machines may comply by the use of a low volatility solvent and a freeboard ratio of 0.50 or greater, or by using a machine with a freeboard ratio of 0.75 or greater. In addition, the final regulation exempts units that are subject to the federal NESHAP for halogenated solvent cleaning.

21. **Comment:** The regulation should exempt halogenated solvent cleaning machines provided the solvent cleaning machine is subject to the federal National Emission Standard for Hazardous Air Pollutants, 40 CFR Part 63. (6)

    Response: The Department agrees. The final rulemaking has been revised to provide this exemption for both cold cleaning machines and vapor cleaning machines.

22. **Comment:** The regulation should not apply the more stringent MACT provisions to machines using non-HAP solvents. (16)

    Response: The Department agrees. Cold cleaning machines that use non-VOC solvents are not covered by the final rulemaking. Machines using HAP solvents that are also VOC's are subject to the final rule. However, the final rulemaking has been

revised to specify that cold cleaning machines subject to the MACT are exempt from the provisions of Section 129.63.

The Department believes that it is necessary to have essentially the same level of control requirements for vapor cleaning machines using non-HAP VOC solvents as for HAP solvents. Lower levels of control requirements for non-HAP machines could result in switching from non-VOC HAP solvents to VOCs, with the resulting potential for increased ozone formation. This should not be misconstrued as the Department's encouraging the continued use of HAP solvents, but only as a measure to minimize VOC emissions to the extent practical.

23. **Comment:** The Department has not explained why the CTG and RACT requirements for cold cleaning machines are inadequate to protect the public health. (9)

    Response: Much of Pennsylvania is in nonattainment with the health related NAAQS for ozone. Reductions of the precursors of ozone formation, VOC and oxides of nitrogen are necessary to move the Commonwealth toward attainment of the health-related standard. Attaining the ambient ozone standard will reduce the incidence of respiratory problems in susceptible individuals, the young, asthmatics, the elderly and those with pre-existing respiratory problems. As a result, this regulation has been designed to be more protective to suit the current public health needs of the Commonwealth.

24. **Comment:** The Department should clarify the language related to the requirements for a "vapor up" control switch for vapor degreasers. The change should clarify that a switch is needed only if the machine has a spray pump. (9)

    Response: The Department agrees. The final regulation incorporates this suggested revision at Section 129.63(b)(iv).

25. **Comment:** The Preamble does not explain the rationale for limiting the volatility of solvents used in cold cleaning machines. (9)

    Response: The proposed cold cleaning machine solvent volatility limits are part of the Commonwealth's efforts to reduce ambient ozone levels to attain the NAAQS. Reduction of the solvent volatility levels will result in reduced emissions of VOC, an ozone precursor.

    Currently, most residents of the Commonwealth are exposed to levels of ozone that exceed the levels determined by EPA to be necessary to protect the public health.

26. **Comment:** If the Department is going to submit this regulation to EPA as part of the SIP for ozone, the Department should quantify the emission reduction that it anticipates from the regulation. (9)

Response: The Department estimates that the reduced solvent volatility limits for cold cleaning machines will result in VOC emission reductions of approximately 66 percent from currently enforceable levels. This assumption is based in part on similar SIP approved regulatory programs in Maryland and Illinois. It is estimated that the reduced volatility limits will reduce enforceable VOC emissions by approximately 20 tons per day in the Southeast Pennsylvania ozone nonattainment area.

27. **Comment:** The proposed rulemaking does not discuss the impacts of the revised regulations and applicability levels on the Department's plan approval and permitting process. Major sources will be subject to RACT, Title V, and perhaps the NESHAP. (9)

    Response: The Department currently exempts certain sources and classes of sources from plan approval and permitting requirements for a number of reasons, including insignificant levels of emissions. This regulation will not alter those determinations already made under the provisions of Section 127.14(a)(8).

    If an existing source is so large as to be considered a major source, the source could be affected by other programs such as RACT, Title V, and the NESHAP. The requirements in this regulation will affect those determinations.

28. **Comment:** The proposed rulemaking does not explain why the Department is deviating from the NESHAP for halogenated solvent cleaning operations. (9)

    Response: The Department has proposed reduced solvent volatility limits for VOC solvents to reduce emissions of ozone precursors and therefore ozone concentrations to protect the public health. In the final rulemaking, the Board is providing an exemption from the volatility limits for operations that are subject to the NESHAP requirements in 40 CFR Part 63.

29. **Comment:** The Department has not identified any non-regulatory alternatives to this rulemaking or explained why it disagrees with EPA's conclusion that existing regulations are adequate to protect the public health. (9)

    Response: The emission reductions that will result from this rulemaking are a significant component of the Commonwealth's strategy to continue toward attainment of the health-based NAAQS for ozone throughout Pennsylvania. Although certain of the requirements in the regulation may be being met through voluntary measures, in order for the emission reductions to be creditable in the SIP, there must be an enforceable program to assure that they are permanent.

30. **Comment:** The Department contends that the Degreasing Stakeholders indicated that the best way to implement the regulation was through outreach and education. The

proposed rulemaking package does not discuss or define this approach, especially as it relates to small business. (9)

Response: The Department's principal mechanism for outreach will be through the Department's Small Business Compliance Assistance Program. In addition, because the requirements are, for the most part, pollution prevention activities, DEP's Office of Pollution Prevention and Compliance Assistance will be involved. Many small business operators of cold cleaning machines use contract services to provide and maintain the machines. It is anticipated that the contractor will assure that the equipment is in compliance.

31. **Comment:** The preamble indicates that the Department is adverse to companies substituting less toxic solvents for more toxic solvents. (14)

    Response: This is an incorrect interpretation of the statement in the preamble. The Department is proposing the same level of control for both HAP and non-HAP solvents to remove incentives for converting from nonreactive compounds to reactive compounds that will increase ozone concentrations. The Department is not averse to companies making the change from HAP solvents, but such a change should not be made if the result is an increase in emissions.

32. **Comment:** The Department indicates in Section 10 of the Regulatory Analysis Form that there is no legal reason to adopt these requirements. (14)

    Response: Section 10 of the Regulatory Analysis Form relates to whether there is a "mandate" for a regulatory initiative. There is not a mandate specifically for these requirements. The reduction of VOC emissions from solvent cleaning operations was a recommendation of the Ozone Stakeholder Working Groups. The emission reductions are a significant component of the Commonwealth's efforts to meet and maintain the NAAQS for ozone throughout the Commonwealth.

33. **Comment:** The commentator indicates that the regulation will become federally enforceable as part of the SIP and that the requirements must be included in the Title V permit. This will pose compliance certification problems because of the sweeping nature of the requirements. (14)

    Response: Whether or not the regulations are part of the SIP, the requirements will be included in the Title V permit, and the operator will be required to certify compliance. The final rulemaking contains a number of revisions that should minimize the compliance certification concerns. Among these is the establishment of a de minimis level of two gallons for cold cleaners and limiting the applicability to the cleaning of metal parts.

34. **Comment:** The commentator indicates that the documentation does not present any evidence that the regulation will have any specific benefit on air quality in

Pennsylvania or describe who will benefit. In addition, the Department has described no compelling public interest that demands stronger regulation than the federal requirements. (14)

Response: Much of Pennsylvania is in nonattainment with the health-related NAAQS for ozone. Reductions of the precursors of ozone formation, VOC and oxides of nitrogen are necessary to move the Commonwealth toward attainment of the health-related standard. Attaining the ambient ozone standard will reduce the incidence respiratory problems in susceptible individuals, the young, asthmatics, the elderly and those with pre-existing respiratory problems. In addition, the emission reductions that will result from this rulemaking are a significant component of the Commonwealth's strategy to continue toward attainment of the health-based NAAQS for ozone throughout Pennsylvania.

35. **Comment:** The proposed regulation does not indicate how business will save money by switching to lower volatility solvent. (14)

    Response: Operators will save money because of a reduced need to replace solvent lost due to evaporation.

36. **Comment:** The Department did not consider the increased costs for additional chemicals needed to control rust on parts cleaned in non-solvent cleaners, nor did the Department consider the parts damage that will result from the use of solvent alternatives. The provisions of the regulation will drive business to non-solvent cleaners. (14)

    Response: The business decision to abandon solvent cleaning in favor of non-solvent cleaning will be primarily on the basis of least cost while maintaining product quality. Switching to non-solvent cleaning systems will be done because it is a lower cost option than remaining with a solvent cleaning system.

37. **Comment:** The Department did not take into account the number of businesses that will cease operation because of the requirements of this rule. (14)

    Response: The Department is not aware of any businesses that will be forced to cease operations because of the requirements in this regulation. Because many businesses have already complied with these requirements as a cost-efficiency measure, it is anticipated that no business will be forced to close.

38. **Comment:** The commentator indicates that the proposed regulation will have significant adverse impact on the public, business and government because of its broad applicability. (14)

    Response: The final regulation has limited the applicability of the requirements for the program. Specifically, the final regulation applies only to metal parts cleaning

using VOC; cold cleaning activities where the VOC quantity is less than 2 gallons are exempted; and operations subject to the federal NESHAPs are not regulated.

39. **Comment:** The Department's estimates of costs and benefits are inaccurate. (14)

    Response: The Department believes that its cost and benefit assessments are accurate. The Board based its estimates on the value of the solvent that would not be lost if the anticipated emission reductions occur. The emission reduction estimates are consistent with estimates for similar SIP-approved programs in Maryland and Illinois.

    Other cost data have not been provided to the Department.

40. **Comment:** The commentator asserts that the Department did not consider any non-regulatory options. (14)

    Response: The Department considered non-regulatory approaches, but in order to obtain approval of emission reductions for SIP purposes, the emission reduction strategy must be enforceable. Other than through permits, a regulatory approach is the only way to make the reductions enforceable. It is estimated that there are in excess of 10,000 small cold cleaners in Pennsylvania. Permitting of this number of sources is not practical or cost effective.

41. **Comment:** The regulation will impact certain waste disposal activities by small quantity generators who will no longer be able to allow solvent-contaminated rags to evaporate as a method of waste disposal. (14)

    Response: Managing solvent-contaminated rags and hazardous volatile materials by evaporative drying is not an environmentally sound practice. Ozone levels throughout much of Pennsylvania continue to exceed the health-based ozone NAAQS. Toxic pollutants in the air, especially in urban environments, are a growing concern.

    The final regulation does not require that hand-wipe cleaning rags be placed in covered containers. However, the Department recommends that operators develop alternative disposal techniques or implement non-solvent based cleaning alternatives.

42. **Comment:** The definition of "hand-wipe cleaning operation" is overly broad and should be eliminated. (16)

    Response: The Department agrees. Consistent with eliminating from the final regulation the requirements for placing of hand-wipe rags in closed containers, the Department will not expand the existing definition of "hand-wipe cleaning operation" adopted as part of the Department's VOC regulations for the aerospace industry.

43. **Comment:** The proposed language of Section 129.63 varies from the comparable federal provisions at 40 CFR 63.463. The Department should either conform its requirements to the federal requirements or adopt the federal NESHAP by reference. (8,19)

Response: The Department agrees. The final rule exempts from the requirements of Section 129.63 those machines subject to the federal MACT. Therefore, there are no inconsistent provisions applicable to solvent cleaning machines.

44. **Comment:** The commentator supports comments submitted by The PA Chamber of Business and Industry and Lucent Technologies and encourages the Environmental Quality Board to consider the experiences and recommendations offered in those comments. (20)

Response: The Department has taken their comments into consideration and has made changes where appropriate.

45. **Comment:** The EQB has not estimated the emission reductions that will be achieved through implementation of the regulation, nor has it quantified the extent to which it will help Pennsylvania attain the required reductions under the Clean Air Act. (21)

Response: The Department estimates that the reduced solvent volatility limits for cold cleaning machines will result in VOC emission reductions of approximately 66 percent from currently enforceable levels. This assumption is based in part on similar SIP-approved regulatory programs in Maryland and Illinois. Solvent cleaning VOC emission reductions are necessary for Pennsylvania's efforts to attain and maintain the NAAQS for ozone statewide. It is estimated that this regulation will result in approximately 14,375 tons of enforceable emission reductions statewide.

46. **Comment:** The EQB should explain the compelling public interest and environmental benefit of extending the more stringent MACT to non-HAP solvents. (21)

Response: The Department's intention in specifying the MACT level of control for non-HAP solvents was to assure that changes from HAP solvents to non-HAP VOCs would not be made at the expense of the environment. The Department is proposing the same level of control for both HAP and non-HAP solvents to remove incentives for converting from non-reactive compounds to reactive compounds that will increase ozone concentrations. The Department is not averse to companies making the change from HAP solvents, but such a change should not be made if the result is an increase in ozone precursor emissions.

47. **Comment:** The Department should justify the expansion of the requirements to include non-metal parts cleaning. Consideration should be given to exempting electronics industry and limiting the requirements to only metal parts. In addition, the

Department should provide a more accurate estimate of the costs associated with the applicability of the requirements to include non-metal parts. (21)

Response: The final rulemaking limits the applicability to the removal of grease, oil and soils from metal parts. The final requirements do not apply to the removal of paints, inks or coatings, or to non-metal parts cleaning.

48. **Comment:** The Department should explain the reasonableness of eliminating the de minimis threshold and for not applying some smaller exemption level and should quantify the amount of VOC reductions that will result from the elimination of the de minimis threshold. (21)

    Response: Most cold cleaning units presently in use are below the existing size threshold. These are units used primarily in mobile equipment service facilities and industrial maintenance shops. The bulk of the VOC emissions from cold cleaners reported in the emission inventory for solvent cleaning arise from these historically unregulated repair and maintenance degreasing operations. The final regulation provides a de minimis level of 2 gallons of solvent for cold cleaning operations. This level is consistent with the MACT for cold cleaning.

    The existing requirements for vapor cleaning machines are based on equipment technology more than 25 years old. The technology specified for vapor cleaning machines is readily available to reduce emissions from the machines. As an alternative to meeting the hardware/technology requirements, the operator can show that the VOC emissions from the vapor cleaning machine meet certain specified levels.

49. **Comment:** The Department should clarify the effect of this rulemaking on Title V permits, including whether operators will be required to revise their Title V permits to reflect the revisions.(10,21)

    Response: Facility operators may be required to revise their Title V operating permits following the adoption of the final regulation. For those Title V permits with three or more years remaining before the permit expiration, the operator will be required to revise the permit. A review of Title V permit data indicates that approximately 240 of the approximately 600 Title V permits will have more than three years remaining as of the fall of 2002, the compliance date for the revised cold cleaner requirements. It is not clear that all of these facilities will be affected.

    The Department will develop a process for opening and revising those permits with longer than 3 years to the permit expiration that will require minimal effort for the affected facilities.

50. **Comment:** The Department should provide a more accurate estimate of the costs of the rulemaking. (21)

Response: The Department believes that the cost estimates reflect the upper limits of the new costs due to the requirements and are the most accurate costs. Most cold cleaning machines are already using low volatility solvents and should experience no additional costs.

51. **Comment:** The Department should provide an estimate of the benefits of eliminating the de minimis threshold and should address whether the reduced solvent volatility will result in significant VOC emission reductions. (21)

    Response: Based on EPA emission factor estimates, the majority of the emissions from cold cleaning operations result from activities at automobile repair facilities where small cold cleaning machines are the predominate sources. Emission factor estimates indicate emissions of approximately 2.5 pounds per person per year from automobile repair cold cleaning activities. An additional estimated 1.1 pounds per person per year results from manufacturing cold cleaning activities. Total solvent cleaning emission factor estimates are approximately 4.3 pounds per person per year, including vapor and in-line cleaning machines. The reduced volatility is estimated to result in emission reductions of approximately 66 percent from unregulated levels from cold cleaning activities.

52. **Comment:** The commentator supports appropriate handling of solvent bearing cloths, but is concerned about permitting and enforcement issues related to the proposed regulatory requirements. (9)

    Response: The Department believes that the proper management of solvent-soaked cloths can result in significant reductions of HAPs and VOCs. Other commentators have expressed that allowing the cloths to air dry, releasing the solvent to the atmosphere, permits the disposal of the cloths as general waste, rather than as hazardous waste. Although the requirement for properly managing these cloths may result in reduced emissions and exposure for workers and the public, the implementation of such a program through regulatory requirements may not be practical at this time. Therefore, the requirement for placing solvent-bearing cloths into closed containers has been removed from the final rulemaking.

53. **Comment:** The Board indicates that the proposed requirements are consistent with the requirements in effect in Maryland and Illinois. However, those rules contain exemptions not provided for in the proposed regulation. (8)

    Response: The major differences between the proposed regulation and the rules in other states relate to the applicability to the types of parts cleaned and the materials removed during the cleaning. The proposed regulation applied to the removal of all types of coatings, inks, greases, oil and other soils from all materials. The final regulation applies only to the removal of grease, oil and similar soils from metal parts.

It does not apply to the removal of coatings, inks or such materials as photoresist, and it does not apply to cleaning of non-metal parts.

54. **Comment:** The Department has not identified non-regulatory alternatives to this proposal. (9)

Response: The emission reductions that will result from this rulemaking are a significant component of the Commonwealth's strategy to continue toward attainment and maintenance of the health-based NAAQS for ozone throughout Pennsylvania. Although certain of the requirements in the regulation may be being met through voluntary measures, in order for the emission reductions to be creditable in the SIP, there must be an enforceable program to assure that they are permanent.

55. **Comment:** The Department has not identified the outreach efforts it will use to assist in the implementation of the requirements. (9)

Response: Because most of the affected solvent cleaning machines are located at small businesses such as automotive repair facilities, the Department will work closely with the Small Business Compliance Assistance Program to alert these operators. In addition, because many of these machines are installed and operated under contract with service providers, the Department will coordinate its outreach efforts closely with these businesses.

56. **Comment:** The Department has not identified the emission reductions that will result from the implementation of the requirements. (9,21)

Response: EPA emission factor estimates indicate that unregulated emissions from cold cleaning activities from facilities such as automobile repair facilities where small cold cleaning units predominate and from manufacturing cold cleaning are approximately 3.6 pounds per person per year. Based on an estimated population of 12.1 million and this emission factor, unregulated emissions are estimated to be 21,780 tons per year statewide. Based on determinations of emission reduction benefits of approximately 66 percent resulting from reduced solvent volatility for the Maryland state implementation plan (SIP) approved by EPA, the Board estimates that the requirements will result in enforceable emission reductions of approximately 14,375 tons per year statewide.

57. **Comment:** The Department does not explain the rationale for limiting the volatility of solvents used in cold cleaning machines. (9)

Response: Establishment of limits on the volatility of solvents used in cold cleaning machines is a part of the Board's efforts to move to attainment of the anticipated standard designations throughout the Commonwealth.

58. **Comment:** The Department does not explain why the proposed rulemaking requirements deviate from the federal MACT. (9)

Response: The Department did not intend that the requirements in the proposed rulemaking deviate from or conflict with the federal MACT. The final rulemaking has been revised to exempt from the requirements in Section 129.63 any solvent cleaning units subject to the federal MACT.

59. **Comment:** The Department does not explain the implications of the rulemaking for permitted sources. (9,10,15,21)

Response: The establishment of these requirements will impact only those sources with Title V permits that have more than three years remaining in the life of the permit. As is discussed in the response to Comment 49, the Department will develop a program to minimize the impact on the facilities that are affected. The revisions do not specifically require permitting activities.

60. **Comment:** The Department should change the definition of immersion cold cleaners to include the phrase "an open top...." (12)

Response: The Department agrees. This change has been made in the final rulemaking.

61. **Comment:** The Department should consider exempting from the 0.75 freeboard requirements immersion cold cleaning machines that are kept closed except when parts or solvent are being added or removed. (12)

Response: The freeboard ratio requirement of 0.75 is applicable only to those machines that use a solvent with volatility greater than 1.0 mm Hg. The operator may use 0.50 if the machine uses solvent with a volatility of 1.0 mm Hg or less.

62. **Comment:** The Department should revise the definition of remote reservoir cold cleaning machine to include certain machines that drain solvent into a covered container. (12)

Response: The Department agrees. The definition of "remote reservoir cold cleaning machine" has been revised in the final rulemaking to include the phrase suggested by the commentator.

63. **Comment:** The Department should consider changing the title of the requirements to more accurately describe the section of the regulations. (13)

Response: The Department agrees. The title of section 129.63 has been revised in the final rulemaking to reflect that it applies to "VOC Cleaning Operations."

64. **Comment:** The word "parts" should be defined to specifically include size, material and/or shape. (13)

Response: The term "parts" is not defined in the final rulemaking. The common meaning of the word is adequate.

65. **Comment:** The definition of "freeboard ratio" should be changed to be consistent with the definition in the MACT. (17,18)

Response: The Department agrees. The definition of "freeboard ratio" has been revised in the final rulemaking to be consistent with the MACT definition.

66. **Comment:** The Department should add definitions for "idling mode" and "vapor pressure." (17,18)

Response: The Department agrees. The final rulemaking includes definitions for these terms.

67. **Comment:** A de minimis level should be included for machines using low volatility solvent. (17,18)

Response: The Department disagrees. Setting a de minimis exemption level for small units is not a practical alternative. The majority of anticipated emission reductions will result from comparatively small units. In order for emission reductions to be creditable for SIP purposes, they must result from enforceable requirements.

68. **Comment:** The Department should identify the costs of recordkeeping associated with the elimination of the de minimis exemption level. (21)

Response: The additional recordkeeping costs associated with the elimination of the de minimis threshold for cold cleaners should not increase recordkeeping significantly. As commentators noted, the records relating to solvent volatility are available as part of the MSDS record and are kept as a normal business practice, as are the bills of lading, purchase receipts or other information necessary to demonstrate compliance. The elimination of the threshold for vapor cleaning machines will require significant additional recordkeeping.

69. **Comment:** The Department should provide an estimate of the increased costs associated with compliance with the cold cleaning machine volatility requirements. (21)

Response: The final rulemaking provides compliance options for affected facilities. The operator can elect to use low volatility solvents or to increase the cleaning machine freeboard ratio. In most cases, compliance can be achieved by the use of low

volatility solvents. Inasmuch as many facilities have switched to low volatility solvents, the cost has already been incurred. For facilities that prefer to continue to use higher volatility solvents, increasing the height in the solvent tank should be nominal.

70. **Comment:** The Department should assure that the regulation addresses situations where low volatility solvents or the specified compliance options are not viable options for solvent cleaning machines. (21)

    Response: The final rulemaking provides operators of affected cold cleaning machines the option of using low volatility solvent, or increasing the freeboard ratio for the machine to 0.75 or greater. In addition, affected facilities have the option of demonstrating that an alternative program is as effective as the regulation under the equivalency provisions in Section 129.51 of Chapter 129. Operators of cold cleaning machines subject to the federal MACT are not affected by the requirements of Section 129.63.

71. **Comment:** The term "solvent cleaning machine idle time" is not used in Section 129.63, and the definition in Section 121.1 is not necessary. (21)

    Response: The Department agrees. The definition has been deleted from the final regulation.

72. **Comment:** The terms "solvent vapor zone" and "vapor zone" appear to be used interchangeably. One or the other should be defined and used. (21)

    Response: The Department agrees. The term "solvent vapor zone" is defined and used in the final regulation.

73. **Comment:** The terms "solvent vapor layer" and "solvent vapor" are undefined. If the terms are the same, one or the other should be defined and used. If they are different, each should be defined. (21)

    Response: These terms are used in definitions used in the federal MACT and are undefined in the MACT. To assure consistency with the MACT interpretation, no definitions are provided for the terms.

74. **Comment:** The definition of the term "vapor cleaning machine" adds the phrase "or that heats liquid solvent," which is inconsistent with the federal definition. The EQB should explain why it has diverted from the federal definition. (21)

    Response: The technical stakeholders who worked to formulate the regulation suggested the proposed definition. In the final rulemaking the definition is revised to be consistent with the federal MACT definition.

75. **Comment:** Section 129.63(a)(3)(v) prohibits the use of air agitated baths. 40 CFR 63.462(c)(6) does not. The Board should explain this difference. (21)

Response: Air agitated baths "strip" solvent from the solvent cleaning machine and increase VOC emissions. Other agitation mechanisms are available that result in reduced emissions.

76. **Comment:** The EQB should address whether low volatility solvents are readily available to the affected industry. (21)

Response: The major cold cleaner service provider and other equipment suppliers have indicated to the Board that the majority of cold cleaning machines have been using lower volatility solvents for several years. Adequate supplies of complying solvents do not appear to be an issue.

77. **Comment:** The EQB should clarify what is meant by the term "new in-line cleaning machine" in paragraph 129.63(f)(1)(ii). (21)

Response: The Department agrees. The meaning of the phrase has been clarified. For purposes of machines subject only to the provisions of Section 129.63, the phrase means sources constructed or re-constructed after the date of publication of the final rulemaking.

78. **Comment:** The EQB should clarify whether the alternative compliance provisions in the proposed Section 129.63(f) apply to all solvent cleaning machines, including cold cleaning machines. (21)

Response: The Department did not intend that these alternative provisions would apply to cold cleaning machines. This has been corrected in the final rulemaking.

79. **Comment:** The EQB should correct what appear to be numbering inconsistencies in the tables in Section 129.63. (21)

Response: Corrections have been made in the final regulation.

80. **Comment:** The EQB should determine the applicability of requirements similar to the proposed rulemaking in other states. (21)

Response: Presently, Maryland's low volatility requirements apply in the Baltimore nonattainment area. The Maryland requirements affect removal of grease, oil and soils from metal parts and exempt non-metal cleaning activities. In Illinois, low volatility cold cleaning solvent requirements affect the cleaning of oil, grease, and soils from metal parts.

Most other states that regulate VOC emissions from solvent cleaning apply the requirements only to metal parts cleaning and do not specify maximum solvent volatility limits.

81. **Comment:** The commentator supports proper handling and disposal of hand-wipe cleaning cloths. However, the commentator expressed general concern about the hand-wipe cleaning provision including: the lack of a de minimis level in the proposed regulation; no information concerning costs and benefits; fire hazards related to rag storage; and possible Title V permitting and enforcement issues. (7)

    Response: The Department believes that all reasonable measures should be implemented to reduce emission from the evaporative drying of solvent and HAP materials from cloths. However, the Department has removed the hand-wipe cleaning requirements from the final rulemaking and will not, at this time, impose new regulatory requirements for general hand-wipe cleaning activities.

82. **Comment:** The commentator provided cost data related to development of alternative solvent programs for a number of the company's facilities. These facilities are involved in printing and surface coating operations. The company estimates total development costs of approximately $500,000 with an estimated $220,000 in annual operating costs if the company's facilities are affected by the requirements. (15)

    Response: Several changes made in the final rulemaking will minimize the potential cost impact to the regulated community, including the operations at the commentator's facilities. The final rulemaking has been revised to apply only to the removal of oils, waxes, greases and soils from metal parts where VOCs are used. It does not apply to the removal of coatings and inks. In addition, the final rulemaking exempts operations that are subject to the federal NESHAP for solvent cleaning. The provisions of Section 129.51 allow an operator the option of developing an alternative compliance plan. The final rulemaking also provides exemptions based on safety considerations.

83. **Comment:** The requirements for recordkeeping regarding the volatility of cold cleaning solvent are redundant and should be eliminated. (15)

    Response: The requirements for maintenance of the documentation regarding solvent volatility are retained in the final rulemaking. If the operator can relate the Material Safety Data Sheet (MSDS) on file to the solvent in use, that will be satisfactory for demonstration of compliance.

84. **Comment:** The proposed rulemaking provides alternative compliance options for batch vapor and in-line cleaning machines, but does not provide options for cold cleaning machines. This could force operators to switch to vapor cleaning machines for cleaning small parts. (15)

Response: The final rulemaking provides compliance alternatives for affected cold cleaning machines. Operators can use either low volatility solvents or increased freeboard ratio as means of compliance. Also, operators can demonstrate that some alternative compliance program is equivalent under the provisions of Section 129.51 of Chapter 129.

85. **Comment:** The commentator indicated that the Department should maintain the 10^2 foot exemption for cold cleaners and should exempt those units using solvent with a volatility less than 1mm Hg. (15)

    Response: The majority cold cleaning machines are units less than 10^2 feet. Creditable emission reductions are a significant part of the Commonwealth's efforts to attain and maintain the ozone standard throughout the Commonwealth.

86. **Comment:** The Regulatory Analysis does not adequately support the Department's contention that the proposed rulemaking will save the regulated community $7.3 million the first year and $14.6 million in subsequent years. (9)

    Response: These estimates were based on the value of the solvent that would not be lost if the anticipated emission reductions occur. The emission reduction estimates are consistent with estimates for similar SIP-approved programs in Maryland and Illinois.

87. **Comment:** The commentators indicated that the regulation should clarify that the hand-wipe cleaning provisions do not apply to consumer products already regulated by federal requirements. (17,18)

    Response: Except for pre-existing requirement related to hand-wipe cleaning at aerospace facilities, the final rulemaking does not contain provisions regarding handling and disposal of hand-wipe cleaning rags. Therefore, language clarifying this exemption is not necessary.

88. **Comment:** The commentator indicated that the Department should revise its cost estimates to account for commentators' concerns. (21)

    Response: Commentators indicated that the broadened scope of the requirements to include removal of materials other than grease, oil, and the like, and the applicability to non-metal parts could impose additional costs for development of solvent systems for these uses. The final rulemaking narrows the scope of applicability to cleaning of oil, grease, and similar materials from metal parts. Further, the requirements apply only to machines using VOC as the cleaning solvent, and provide exemptions for machines subject to the federal NESHAP. These changes have eliminated most of the areas of cost concern raised by the commentators. The availability of compliance options for affected facilities allows operators to chose the least-cost option.

89. **Comment:** The commentator indicated that the definitions of "dwell" and "dwell time" are inconsistent and should be clarified in the final regulation. (21)

Response: The Department agrees. These terms have been clarified in the final regulation.

90. **Comment:** The commentator questioned whether a waiver process would be included in the final rulemaking. (21)

Response: The final rulemaking provides a number of exemptions, including one related to safety and another for sources subject to the federal NESHAP. In addition, the scope of the final rulemaking has been narrowed to include only machines using VOC for cleaning of metal parts.

91. **Comment:** The commentator raised several issues related to hand- wipe cleaning, including: the applicability of the provisions to janitorial supplies and consumer products; enforcement and de minimis provisions; and uncertainty about how the requirements would reduce emissions. (21)

Response: The hand-wipe cleaning provisions have been removed from the final rulemaking.

92. **Comment:** The Department should revise terminology related to hand-wipe cleaning in Sections 129.63 (c)(vi) and (d)(7)(v). (21)

Response: The final rulemaking does not contain provisions relating to hand-wipe cleaning rags. However, the final rulemaking does require that wipe rags used for the clean-up of solvent spills be placed into closed containers for storage and disposal.

93. **Comment:** Section 129.63(d)(3) in the proposed rulemaking requires the operator of a machine to operate the machine in conformance with "good air pollution control practices." To improve clarity, the EQB should define or reference what these practices are. (21)

Response: These "good air pollution control practices" can vary with individual machines, so a general definition of the practices that would apply to all machines is not practical. Therefore, the EQB has deleted the requirement from the final rulemaking.

Pennsylvania Department of Environmental Protection

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September 21, 2001

The Secretary

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Mr. Robert E. Nyce, Executive Director
Independent Regulatory Review Commission
14th Floor, Harristown #2
333 Market Street
Harrisburg, PA 17120

RE: Final Rulemaking: Solvent Cleaning Operations (#7-346)

Dear Bob:

Pursuant to Section 5.1(a) of the Regulatory Review Act, enclosed is a copy of a final-form regulation for review by the Commission. This final rulemaking was approved by the Environmental Quality Board (EQB) on September 18, 2001.

This rulemaking revises requirements for the operation of solvent cleaning machines and applies only to those operations that use solvents containing greater than 5% VOC content by weight for the cleaning of metal parts. The final amendments are limited to the removal of grease and oils from metal parts. Major provisions include adding a volatility limit of 1 mm Hg for the VOC used in cold cleaning machines and establishing hardware technology requirements for vapor cleaning machines. These amendments will require operators of these machines to either modify existing equipment or use lower volatility cleaning solvents in order to reduce evaporative emissions. Exemptions and alternative compliance options are provided for in the final rule. Proposed requirements for containerizing solvent-laden hand-wipe rags for storage and disposal have been eliminated.

This rulemaking is part of Pennsylvania's strategy to achieve and maintain the one-hour ozone NAAQS and is supported by the four Pennsylvania Ozone Stakeholder Working Groups. In addition to these groups, the Department worked closely with the AQTAC during the regulatory development process. The AQTAC endorsed the amendments, but requested deletion of specific mandatory operating requirements for cold cleaners that it considered too subjective to be enforceable. The provisions in question were deleted in the final rulemaking.

The proposed rulemaking was adopted by the EQB on May 19, 1999, and published for public comment on August 28, 1999. During the 60-day public comment period and at three public hearings, nearly 100 comments were received from 21 organizations. Most of these

commentators objected to the proposal, indicating that the amendments could unnecessarily restrict the use of solvents while increasing operational costs. Many commentators also disagreed with the cost estimates and the impact the changes would have on their industries. To address these concerns, the scope of the rulemaking has been narrowed and numerous revisions have been made in the final rulemaking.

The Department will provide the Commission with any assistance required to facilitate a thorough review of this final-form regulation. Section 5.1(e) of the Act provides that the Commission shall, within ten days after the expiration of the committee review period, approve or disapprove the final-form regulation.

For additional information, please contact Sharon Trostle, Regulatory Coordinator, at 787-4526.

Sincerely,

David E. Hess
Secretary

Enclosures

TRANSMITTAL SHEET FOR REGULATIONS SUBJECT TO THE REGULATORY REVIEW ACT

I.D. NUMBER:	7-346
SUBJECT:	Solvent Cleaning Operations
AGENCY:	DEPARTMENT OF ENVIRONMENTAL PROTECTION

TYPE OF REGULATION

Proposed Regulation

X Final Regulation

Final Regulation with Notice of Proposed Rulemaking Omitted

120-day Emergency Certification of the Attorney General

120-day Emergency Certification of the Governor

Delivery of Tolled Regulation
a. With Revisions b. Without Revisions

FILING OF REGULATION

DATE	SIGNATURE	DESIGNATION
9/21/01	Kay O'Brien	HOUSE COMMITTEE ON ENVIRONMENTAL RESOURCES & ENERGY
9/21/01	Pat Carnathan	SENATE COMMITTEE ON ENVIRONMENTAL RESOURCES & ENERGY
9/21/01	Elena Pagán	INDEPENDENT REGULATORY REVIEW COMMISSION
		ATTORNEY GENERAL
		LEGISLATIVE REFERENCE BUREAU

September 20, 2001