



**Linda S. Adams**  
Secretary for  
Environmental Protection

# Air Resources Board

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**Mary D. Nichols, Chairman**  
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**Arnold Schwarzenegger**  
Governor

January 26, 2009

Mr. Lawrence Lim, Chairman  
Ko-Am Cleaners Association of California  
5420 Ygnacio Valley Road, Suite 60  
Concord, California 94521

Dear Mr. Lim:

On December 1, 2008, the California Air Resources Board (ARB or Board) received your letter together with the petition entitled "Second Petition of the Ko-Am Cleaners Association of California to the California Air Resources Board for Amendments to section 93109, Title 17 California Code of Regulations" (hereinafter the Petition). This section refers to the Airborne Toxic Control Measure for Emissions of Perchloroethylene (Perc) from Dry Cleaning and Water Repelling Operations (Dry Cleaning ATCM). You have cited the following as authority for the requested action: California Government Code sections 11340.6 and 11340.7.

The California Administrative Procedure Act (APA) provides that any interested person may petition a state agency requesting the adoption, amendment, or repeal of a regulation as provided in Government Code section 11340.6. The petition must clearly and concisely state the substance or nature of the regulation, amendment, or repeal requested, the reason for the request, and reference to the authority of the state agency to take the action requested. (Government Code section 11340.6(a)-(c)). The APA further provides that a state agency shall notify the petitioner in writing of the receipt and shall within 30 days either deny the petition indicating why the agency has reached its decision on the merits of the petition in writing or schedule the matter for public hearing in accordance with the notice and hearing requirements of the APA. (Government Code section 11340.7.) ARB requested and appreciates the extension you granted to respond by January 26, 2009. The extension provided an opportunity to consider and discuss the circumstances raised in the petition with the State Fire Marshal and others. By this letter, we are advising you that ARB has denied the Petition.<sup>1</sup> The basis for the denial is set forth in this letter and the references listed on the enclosure to this letter.

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<sup>1</sup> The Board may delegate any duty it deems appropriate to its Executive Officer (Health and Safety Code section 39515(a)). The Board is conclusively presumed to have delegated any of its powers to the Executive Officer unless it has expressly reserved that power to itself (Health and Safety Code (HSC) *The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption. For a list of simple ways you can reduce demand and cut your energy costs, see our website: <http://www.arb.ca.gov>.*

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California Environmental Protection Agency

## **Summary of Findings for the Denial**

The findings upon which the denial is based are summarized below and the basis for these findings is discussed in more detail later in this letter. The findings are as follows:

- ARB finds that sufficient information was not provided to support the petitioner's claim that given the current state of the economy implementation of the Dry Cleaning ATCM will have "dramatic adverse consequences" on the dry cleaning industry.
- ARB finds that the petitioner has not provided sufficient information on the estimated costs of installing fire suppression systems.
- ARB estimates, based on information ARB staff gathered, that the average cost to install an automatic sprinkler system, for a typical installation, could result in a \$0.05 increase in the cost of cleaning a garment.
- ARB finds that a \$0.05 increase in the cost of cleaning a garment is not sufficient to warrant changes to the regulation.
- ARB finds that it is premature to conclude that all new hydrocarbon dry cleaning facilities will have to install automatic sprinkler system until the petitioner fully explores the alternative compliance options or administrative remedies provided under the 2007 California Fire Code (CFC).

## **The Regulation Addressed by the Petition**

The Petition contains the second request for ARB to amend section 93109 of Title 17, California Code of Regulations (CCR), the Dry Cleaning ATCM. The Dry Cleaning ATCM prohibits the sale or lease of new Perc dry cleaning machines beginning on January 1, 2008, eliminates the use of existing Perc machines at co-residential facilities (facilities that share a wall with, or are located in the same building, as a residence) by July 1, 2010, requires Perc machines that are 15 years or older be removed from service by July 1, 2010, and requires that all other Perc machines be removed from service once they become 15 years old or by January 1, 2023, whichever is sooner. In addition, the Dry Cleaning ATCM expands good operating practices and recordkeeping and reporting requirements for Perc dry cleaners, and requires Perc manufacturers and distributors to report and keep records of their Perc sales to California dry cleaners.

The Petition requests ARB to either reverse the action taken by the Board on January 25, 2007 by deleting the adopted regulatory text or the final regulation order (Reference A) and restoring the deleted regulatory text (Reference B) or by amending

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section 39516.) The Board has not reserved the power to act on rulemaking petitions and it is, therefore, appropriate for the Executive Officer to act on the Petition under delegated authority.

the regulatory text to include additional lead time of 5 to 10 years to all of the compliance dates. In the Petition, you restated the reasons contained in the previous petition entitled "Petition of the Ko-Am Cleaners Association of California to the California Air Resources Board for Amendments to section 93109, Title 17, California Code of Regulations" (Reference C, hereinafter the First Petition) and added two additional reasons why the Board should consider amending the Dry Cleaning ATCM. ARB's responses to the reasons in the First Petition were addressed in ARB's March 7, 2008 letter to you (Reference D, hereinafter March 2008 Letter). The two additional reasons and ARB's responses to them are addressed in the following discussion.

### **Petitioner's Claim No. 1 - The Current State of California's Economy**

The first new reason cited in the Petition is the claim that the Board's decision at the January 25, 2007 hearing was based on an economic analysis that did not reflect California's current economy. The Petition states that:

[T]he Board's January 25, 2007 decision that included the ban on perchloroethylene-based dry cleaning machines was based on an economic analysis that did not reflect the current state of California's economy. Rather, the Board's 2007 decision was based on what are now known as erroneous assumptions that vastly overstated the dry cleaning industry's ability to finance the purchase of alternative dry cleaning machines and the ability of the industry to recover those costs by passing them on to customers... CARB's failure to make the requested changes to section 93109 will have dramatic adverse consequences for the dry-cleaning industry and in small cleaners in particular.

### **Response to Claim No. 1**

The Board's decision at the January 25, 2007 hearing considered the economic and cost information on the effects of the Dry Cleaning ATCM and the projected total cost at that time. Since then, the California's economy has taken a downturn. The California economy has seen an increase in unemployment rates, a decrease in consumer spending, and a loss of revenue for businesses. However, the extent and impact this downturn has had on the dry cleaners are not known and the petitioner did not provide this information. The petitioner has not provided any information on the economic loss suffered by dry cleaners in California or examples of the industry's inability to purchase alternative dry cleaning machines. More importantly, the major requirements of the Dry Cleaning ATCM, which requires the replacement of existing Perc machines, will not begin until July 2010 and will not be completed until 2023.

Therefore, staff finds that the claim that California's current economy will have a "dramatic adverse consequence for the dry-cleaning industry" is unsubstantiated.

### **Petitioner's Claim No. 2 - Costs Associated with Installation of Sprinklers for Newly Installed Hydrocarbon Cleaning Systems**

The second new reason cited in the Petition is the claim that costs associated with the use of high flash point hydrocarbon solvent in dry cleaning machines are higher than estimated in the rule making process because the 2007 CFC requires installation of fire suppression systems at all dry cleaning facilities using high flash point hydrocarbon solvent-based machines. The petitioner claims that this higher cost results in the hydrocarbon based systems being unviable alternatives and renders the Board's findings incorrect. The Petition states that:

[T]he Board's January 25, 2007 decision that included the ban on perchloroethylene-based dry cleaning machines was based on an analysis of alternative technologies that failed to properly account for all of the costs associated with alternatives... [T]he California State Fire Marshal is requiring the installation of fire suppression systems at all dry cleaning facilities using the high flash point hydrocarbon solvent based machines... CARB staff's conclusion that hydrocarbon based systems are a viable alternative to perchloroethylene-based dry cleaning machines is erroneous and that fact renders the Board's finding based on that conclusion incorrect.

### **Response to Claim No. 2**

#### Background

The 2007 CFC, effective on January 2008, requires fire suppression systems (automatic sprinklers) in buildings where new dry cleaning systems using Class II, Class IIIA, or Class IIIB solvents are installed. Existing dry cleaning facilities that started using Class II, Class IIIA, and Class IIIB solvents before January 2008 will continue to fall under the previous CFC (2001) which exempts facilities that store less than 330 gallons of solvent onsite. As a result, existing hydrocarbon dry cleaning operations will not have to retroactively install fire suppression systems. Also, the 2007 CFC will not impact dry cleaning facilities that already have sprinklers in place.

The Board's decision at the January 25, 2007 hearing did not include consideration of the impact of the 2007 CFC because the 2007 version was still under development and was not effective until January 2008. Because Class II, Class IIIA, and Class IIIB solvents are some of the most popular alternatives to Perc and the Dry Cleaning ATCM requires replacement of existing Perc machines starting in July 1, 2010, with all Perc

machines to be replaced by January 2023, up to 2500 facilities statewide could be impacted by the 2007 CFC.

If required to meet the 2007 CFC, a dry cleaning facility owner who installs a new dry cleaning solvent system that use solvents in Class II (Stoddard Solvent) and Class III (high flash point hydrocarbon solvents, GreenEarth<sup>®</sup> and Rynex<sup>™</sup>) would have three options to comply. The first option would be to comply with the 2007 CFC as it is written and install an automatic sprinkler system. The second option would be to employ an alternative fire prevention method (requires approval from the local fire authority). The third option would be to participate in the CFC's amendment process with the Office of the State Fire Marshal (OSFM) to attempt to amend the 2007 CFC requirements concerning hydrocarbon dry cleaning facilities. The following discusses ARB's findings concerning each option.

#### Option 1 – Installation of an Automatic Sprinkler System

Concerning the first option, the installation of an automatic sprinkler system, the petitioner claims that this option would make hydrocarbon machines too costly to be considered a viable alternative to Perc dry cleaning systems. The petitioner did not provide any specific information concerning the cost of installing automatic sprinkler systems, how many hydrocarbon systems installed in 2008 were required to add automatic sprinkler systems, or how many facilities per year are likely to have to install these systems between 2010 and 2023.

Since no cost information was provided, ARB staff contacted Office of the State Fire Marshal (OSFM), dry cleaning industry representatives, and local air district personnel to gather additional information on the potential impacts of 2007 CFC. Staff found that the total cost for installing a new automatic sprinkler system will be site-specific and depend on a number of factors. These include the size of the building, whether the dry cleaning facility is in a stand-alone building or part of a larger building, whether an additional water supply and its associated piping is needed, whether any structural upgrades are needed, whether there are permit and inspection fees, and whether there are any local fire authority requirements.

Based on our investigation, staff estimates that the cost for installing automatic sprinkler systems will be between 2 to 4 dollars per square foot of building space. For an average sized dry cleaning facility of 2000 square feet, this would result in an average cost of about \$6,000 (range of \$4,000 to \$8,000). This average cost assumes the facility will not have to make any significant to its water supply system or the building structural. It also does not include any permit and inspections fees.

Adding the \$6,000 cost to the cost of hydrocarbon machines, would increase staff's estimated cost for installing a new hydrocarbon machine from \$75,000 to \$81,000. This

would change the "Cost Recover Price Increase" reported to the Board (See Table VII-11 of the Staff Report: Initial Statement of Reasons released on December 8, 2006, Reference E, herein) from \$0.56 to \$0.61.

Staff believes a \$0.05 change in the "Cost Recover Price Increase" is not sufficient to warrant changes to the regulation.

#### Option 2 – Use an alternative method of fire protection

The second option, using an alternative method of fire protection, is allowed under section 111.2.4 of the 2007 CFC. Facility owners can use an alternative method of protection provided that the method would provide equivalent fire protection and there is agreement and approval from the facility's local fire authority. Ms. Kate Dargan, the State Fire Marshal, addressed this option in her December 23, 2008 letter (Reference F, hereinafter, December 2008 Letter) to Mr. David Suber, President of the California Cleaners Association. The December 2008 Letter is incorporated herein by reference. In the December 2008 Letter, Ms. Dargan stated that NFPA 32 (National Fire Protection Association Standard for Dry Cleaning Plants) may exclude the requirement for an automatic sprinkler system and the OSFM is considering alternate methods of protection utilizing the provisions of NFPA 32. Local fire authorities have the authority and often use the option of applying alternate methods of protection to comply with the CFC. Besides the use of NFPA 32, other methods maybe considered and implemented to demonstrate that dry cleaning facilities' treatment of Class II and Class III solvents will provide equivalent fire protection. Individual facility owners will need to work with local fire authorities and seek their approval.

#### Option 3 – Seeking Amendments to 2007 CFC

The third option, seeking amendments to 2007 CFC, is allowed under the OSFM's rule making process. In the December 2008 Letter, Ms. Kate Dargan noted that the OSFM is reviewing provisions in NFPA 32 for possible adoption into the next CFC, tentatively proposed for 2011; NFPA 32 provides an exemption for facilities that store no more than 330 gallons of solvent. ARB staff estimates that a majority of the Perc dry cleaners will not be required by the Dry Cleaning ATCM to replace their Perc machines until 2011 or after. Participation in the OSFM's rule making process, which should start in the March/April 2009, can ensure proper representation of the dry cleaning industry and potentially provide an exemption from sprinkler installation to those dry cleaning facility owners that will choose to switch from Perc to a Class III solvent in 2011 and beyond.

ARB finds that until the petitioner fully explores this option it is premature to conclude that all new hydrocarbon dry cleaning facilities will have to install an automatic sprinkler system.

Mr. Lawrence Lim, Chairman  
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## **Conclusion**

Based on the foregoing analysis, ARB find that the Petition has not demonstrated the Dry Cleaning ATCM to be inconsistent with the overall statutory charge to protect public health through the control of Perc as a toxic air contaminant, nor has the Petition demonstrated further amendments to the Dry Cleaning ATCM to be reasonably necessary to effectuate the purposes of the Health and Safety Code sections 39665 and 39666.

The record upon which this denial is based includes the Petition and its enclosures. The record also includes this letter and all of the material incorporated by reference.

In accordance with Government Code section 11340.7(d), a copy of this letter is being transmitted to the Office of Administrative Law for publication in the California Regulatory Notice Register. The agency contact person on this matter is Robert Krieger, Manager, Emissions Evaluation Section at (916) 323-1202. Interested parties may obtain a copy of the Petition from Lori Andreoni, ARB Office of Legal Affairs, 1001 I Street, P.O. Box 2815, Sacramento, CA 95812, (916) 322-5594.

Sincerely,

/s/

James N. Goldstene  
Executive Officer

## **Enclosures**

cc: Robert Krieger, Manager  
Emissions Evaluation Section  
Stationary Source Division

Lori Andreoni, Manager  
Board Administration  
and Regulations Coordination Unit  
Office of Legal Affairs

## LIST OF REFERENCES\*

Response to Ko-Am Cleaners Association of California's Second Petition for Amendments to Section 93109, Title 17 California Code of Regulations, January 2009

- Reference A: Final Regulation Order  
<http://www.arb.ca.gov/regact/2007/perc07/frorev.pdf>
- Reference B: Deleted Regulatory Text  
<http://www.arb.ca.gov/regact/2007/perc07/frodel.pdf>
- Reference C: Petition of the Ko-Am Cleaners Association of California to the California Air Resources Board for Amendments to Section 93109, Title 17, California Code of Regulations (Enclosed)
- Reference D: Petition Response Letter from Mr. James N. Goldstene, Executive Officer of ARB, to Mr. Lawrence Lim, Chairman of Ko-Am Cleaners Association of California, Dated March 7, 2008 (Enclosed)
- Reference E: Staff Report: Initial Statement of Reasons for the Propose Amendments to the Control Measure for Perchloroethylene Dry Cleaning Operations, December 8, 2006  
<http://www.arb.ca.gov/regact/2007/perc07/isor.pdf>
- Reference F: Letter from Ms. Kate Dargan, State Fire Marshal to Mr. David Suber, President of California Cleaners Association, Dated December 23, 2008 (Enclosed)

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\* References A, B, and E are available on the websites noted and are not included; References C, D, and F are enclosed.

**Reference C**

**Petition of the Ko-Am Cleaners Association of California to the  
California Air Resources Board for Amendments to  
Section 93109, Title 17, California Code of Regulations**

Petition of the Ko-Am Cleaners Association of California  
to the California Air Resources Board for Amendments to  
Section 93109, Title 17 California Code of Regulations

## **Introduction**

This petition, submitted pursuant to §11340.6 and §11340.7 of the California Government Code,<sup>1</sup> requests specific amendments to Section 93109 of Title 17 California Code of Regulations as it was adopted by the California Air Resources Board (CARB) on January 25, 2007.<sup>2</sup>

In light of the requirements set forth in §11340.6 and §11340.7, this petition:

1. Summarizes the background associated with CARB's proceedings leading to the January 25, 2007 adoption of the current regulation at §93109;
2. Describes the specific changes requested to §93109 and provides suggested regulatory language<sup>3</sup>;
3. Provides the reasons why the specific changes are being requested; and
4. References the authority of CARB to make the requested changes to §93109.

## **Background**

Regulatory History - During the 1930s, perchloroethylene began to replace Stoddard solvent and other hydrocarbon-based dry cleaning solvents. It has subsequently become by far the most widely used dry cleaning solvent. In 1991, CARB identified perchloroethylene as a toxic air contaminant (TAC). In 1993, CARB adopted<sup>4</sup> an "Airborne Toxic Control Measure for Emissions of Perchloroethylene from Dry Cleaning Operations." The regulation was codified as section 93109 of Title 17 of the California Code of Regulations.

Despite finding that, by 2003, the 1993 regulations had reduced perchloroethylene emissions by 70% from 1993 levels, CARB staff proposed modifications to section

1 These sections of the California Government Code are reproduced in Attachment A.

2 See State of California Air Resources Board Resolution 07-05 and attachments.

3 The suggested regulatory language is provided in Attachment B.

4 See <http://www.arb.ca.gov/toxics/atcm/perctrn.pdf>

931095 intended to further reduce emissions from perchloroethylene from dry cleaning operations in California. These proposed regulations were rejected by the Board at a Public Hearing held on May 25, 2006. At the hearing, the Board and CARB officially cancelled the previous rulemaking<sup>6</sup> and began work on a rulemaking that would ban the use of perchloroethylene.

Had they been adopted, the proposed regulations considered at the May 25, 2006 hearing would have banned by July 1, 2010, the use of perchloroethylene-based dry cleaning in the limited number of so-called "co-residential" facilities operating in the state and would have ultimately required the replacement of all older perchloroethylene dry cleaning machines with more advanced, lower-emitting, machines and the installation of improved ventilation systems. According to CARB staff (see reference 5), implementation of the regulations rejected by the Board in 2006 as well as CARB measures targeting perchloroethylene emissions from other sources would have reduced the risk due to ambient exposure to perchloroethylene to less than one in a million.

In 2007, CARB staff again proposed modifications to section 931097 that were adopted on January 25, 2007. These modifications, which have now been approved by the California Office of Administrative Law, include a ban on the installation of new perchloroethylene dry cleaning machines in California, beginning January 1, 2008; and require the retirement of any perchloroethylene dry cleaning machine operating in California once the machine reaches 15 years old, beginning July 1, 2010. CARB staff claimed again that the implementation of the adopted regulations, as well as CARB measures targeting perchloroethylene emissions from other sources, will ultimately reduce the risk due to ambient exposure to perchloroethylene to less than one in a million. According to CARB staff (see reference 7) alternatives to perchloroethylene-based dry cleaning machines include machines using the following solvents:

- Water-based "professional wet-cleaning";
- Carbon dioxide;
- Hydrocarbon solvents including Stoddard solvent;
- Decamethylcyclopentasiloxane; and
- Aliphatic glycol ethers.

CARB Data Regarding the Relative Risks Associated with Perchloroethylene and Other TACs - CARB staff has, since 1989, monitored ambient levels of perchloroethylene and reports that data as well as the estimated risk associated with exposure to these levels of perchloroethylene annually.<sup>8</sup> The mean ambient concentration data and estimated risks

5 "Staff Report: Initial Statement of Reasons for The Proposed Amendments to the Control Measure for Perchloroethylene Dry Cleaning Operations," California Air Resources Board, April 7, 2006.

6 See <http://www.arb.ca.gov/regact/perc06/cancellationperc.pdf>

7 "Staff Report: Initial Statement of Reasons for The Proposed Amendments to the Control Measure for Perchloroethylene Dry Cleaning Operations and Adoption of Requirements for Manufacturers and Distributors of Perchloroethylene," California Air Resources Board, December 8, 2006.

8 See <http://www.arb.ca.gov/adam/toxics/statepages/percstate.html>.

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published by CARB staff for the period from 1989 to 2006 are shown in Figure 1. As shown in Figure 1, based on CARB data, the mean concentration of perchloroethylene in California air has dropped by about 90% from 1989 to 2006 as has the CARB staff's estimate of the health risk. It should be noted that the 2007 CARB rulemaking discussed above has not yet been implemented and therefore has had no effect on observed levels of perchloroethylene in ambient air.

Figure 1 0.50 18 0.45 16 0.40 0.35 0.30 0.25 0.20 0.15 0.10 0.05 0.00

14 12 10 8 6 4 2 0

Health Risk(Excess Cancer Cases/Million)

Perchloroethylene (ppb)

Year Annual Average Concentration Health Risk

In addition to data regarding the ambient concentrations of perchloroethylene and the associated health risks, CARB staff publishes an annual summary of

emissions in California and California air quality data that includes data regarding the health risk posed by 10 TAC compounds, including perchloroethylene. According to CARB staff,<sup>9</sup> data for these TACs are presented because they "pose the most substantial health risk." The health risk values based on ambient concentrations observed in 1990 and 2005 at CARB monitoring sites as reported by CARB staff (see reference 9) are summarized below in Table 1.

<sup>9</sup> "The California Almanac of Emissions and Air Quality - 2007 Edition," California Air Resources Board, 2007. See also <http://www.arb.ca.gov/aqd/almanac/almanac07/almanac07.htm>.

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Table 1

Summary of CARB 1990 and 2005 Health Risk Estimates for Exposure to TACs in Ambient Air in California (from Reference 8)

Compound	1990 Health Risk <sup>a</sup>	2005 Health Risk <sup>a</sup>	2005 Ranking
Diesel Particulate Matter	~900	~500	1
Benzene	~240	~50	2
1,3 Butadiene	~150	~40	3
Carbon Tetrachloride	~35	~25 <sup>b</sup>	4
Formaldehyde	~16	~20	5
Hexavalent Chromium	~40 <sup>c</sup>	~15	6
para-Dichlorobenzene	~9 <sup>d</sup>	~10	7
Acetaldehyde	~8	~6	8
Perchloroethylene	~11	~2	9
Methylene Chloride	~4	~1	10
Total 2005 Health Risk	~1,413	~669	
% of Total Health Risk			
Due to Perchloroethylene	0.8%	0.3%	

<sup>a</sup> Excess cancer cases per million people.

<sup>b</sup>Based on 2003 as that is the last year for which CARB staff provides an estimate.

<sup>c</sup>Based on 1992 as that is the first year for which CARB staff provides an estimate.

<sup>d</sup>Based on 1991 as that is the first year for which CARB staff provides an estimate.

As shown in Table 1, in 2005 perchloroethylene accounts for just 0.3% of the total health risk estimated by CARB staff for the 10 TAC compounds. It ranks 9th on CARB's list of the top 10 TACs and, based on CARB staff's estimates, poses a risk that is 250 times less than that posed by exposure to Diesel exhaust PM. As one would have expected, based on Figure 1, CARB staff's estimates of the health risk posed by perchloroethylene dropped dramatically from 1990 to 2005. (Again, it is important to note that these changes in perchloroethylene concentration and risk are in no way influenced by the regulations adopted by CARB in January 2007.) In contrast, the health risk estimated for Diesel particulate matter has dropped by less than 50% over that same time, and the health risk estimated by CARB staff for formaldehyde has actually increased.

Requested Amendments to Section 93109

The Ko-Am Cleaners Association of California requests that CARB adopt changes to Section 93109 that are in essence the same changes proposed by CARB staff to the Board for adoption at the May 25, 2006 Board hearing. In general, the amendments to Section 93109 requested by this petition are as follows:

1. Eliminate the prohibition of the installation of perchloroethylene-based dry cleaning machines;
2. Eliminate the general requirement to remove perchloroethylene-based dry cleaning machines from service when the machines reach 15 years of age; and
3. Extend the date at which primary, converted, and "add-on" secondary control perchloroethylene-based dry cleaning machines must be removed.

The requested text of the amended section is provided in Attachment B. It differs from the May 25, 2006 staff proposal mainly in terms of the lead time provided for compliance given the time that will have elapsed between May 2006 and the time at which CARB could adopt the requested changes. In addition, additional lead time has been provided regarding the phase-out of primary, converted, and "add-on" secondary control machines.

#### Reasons for the Requested Amendments

In this section, the reasons for the requested amendments to section 93109 are presented.

The Ban Enacted on the Use of Perchloroethylene-Based Dry Cleaning Machines is Not Necessary to Adequately Protect Public Health - The fact that a ban on the use of perchloroethylene-based dry cleaning machines is not required to adequately protect public health is proved by the April 7, 2006 CARB staff report; the staff's original proposed revisions to section 93109, which did not include a ban on perchloroethylene; and the testimony presented at the May 25, 2006 hearing on the staff proposal. It is clear that the Board's decision to ban perchloroethylene was not based on any specific finding related to public health; rather, the Board simply made a policy decision that it preferred a ban.

Further, the ban on perchloroethylene is inconsistent with CARB's policies with respect to the control of other TACs. As shown above, based on CARB data, exposure to perchloroethylene accounts for less than 1% of the risk posed by ambient exposure to TACs in California, while Diesel PM and benzene account for more than 80% of that risk. In the case of both Diesel PM and benzene, CARB's control efforts, like the staff's original proposed revisions to section 93109, have focused on controlling emissions rather than banning the use of Diesel-powered vehicles, banning the use of gasoline-powered vehicles, or requiring that the benzene content of gasoline be lowered to zero. Another example is CARB's promotion of the expanded use of ethanol as a gasoline additive and as an alternative fuel (E85), despite the well-known fact that the use of ethanol leads to substantial increases in vehicular emissions of the TAC acetaldehyde.

#### There are No Viable Alternatives to the Use of Perchloroethylene-Based Dry Cleaning Machines at ALL Dry Cleaning Facilities

As discussed above, the California dry cleaning industry has a long history of using perchloroethylene-based machines and has both developed considerable experience with those machines as well as made considerable investments in

them. Unless section 93109 is modified, that experience and those investments will be lost as the result of the ban on the use of perchloroethylene.

Instead, as noted above, the April and December 2006 ISOR documents provided a number of alternatives to perchloroethylene-based dry cleaning machines that dry cleaners should consider in replacing their existing equipment. This issue was further addressed in March 2007, when CARB issued a "Fact Sheet" regarding the amended dry cleaning ATCM requirements that listed what it referred to as "available alternative dry cleaning technologies." The following technologies are listed in the fact sheet:<sup>10</sup>

1. Water-based cleaning;
2. Carbon dioxide;
3. Hydrocarbon solvent;
4. GreenEarth®;
5. Propylene glycol ether;
6. Stoddard solvent; and
7. Puredry®.

Unfortunately, despite the staff's recommendation and the Board's actions at the January 25, 2007 hearing, none of these technologies is a suitable replacement for all of the perchloroethylene-based dry cleaning machines in operation in California. In order to understand why this is, it is important to consider the nature of the dry cleaning industry in California. Based on data collected and published by CARB staff,<sup>11</sup> 90% of all dry cleaning operations have only one machine (see Table IV-4 of reference 11), the total floor space at approximately 80% of dry cleaning operations is 2,000 square feet or less (see Figure IV-4 of reference 11), many perchloroethylene-based dry cleaning machines last far longer than the 15-year lifetime incorporated in the current regulations (see Figure IV-1 of reference 11), and roughly 60% have two or fewer employees. While a full 40% have total annual receipts of less than \$100,000 (see Table IV-1 of reference 11). In addition, according to CARB staff's most recent data for 2006 from reference 7, perchloroethylene-based machines account for 70% percent of the market.

Based on the above data collected by CARB staff, it is clear that most dry cleaning operations are small facilities with limited revenues that operate a single perchloroethylene-based dry cleaning machine and would, in the absence of a ban, continue to operate that machine for far longer than 15 years. Given this, the operator

<sup>10</sup> See <http://www.arb.ca.gov/toxics/dryclean/factsheetmarch2007.pdf>

<sup>11</sup> "California Dry Cleaning Industry Technical Assessment Report," California Air Resources Board, Stationary Source Division, Emissions Assessment Branch, February 2006.

must bear the economic impacts associated with removal of the existing perchloroethylene machine and must be able to affordably replace that machine with another single machine that performs the same function. Further, given that operators could choose to simply go out of business instead of choosing to replace the perchloroethylene machine, they must be able to rely on the

fact that they will be able use the replacement machine for its entire lifetime in order to justify that decision.

Now that the nature of most dry cleaning operations has been established, each of the alternative technologies can be examined in that light.

Water-Based Cleaning - The main problem with water-based cleaning is that it is not an effective replacement for dry cleaning using perchloroethylene-based machines. The processes of dry cleaning and professional dry cleaning with respect to garments are defined in Section 423 of Title 16 of the Federal Code of Regulations which relate to clothing care labels. These processes are distinct from water-based cleaning (or washing) and intentional submission of dry-clean-only materials to water-based cleaning is clearly at odds with the intent of the federal garment care labeling requirements. It is for this reason that water-based cleaning is often used, as noted by CARB staff,<sup>7</sup> as an adjunct to dry cleaning in "mixed shops" that have more than one cleaning machine. In addition, as also noted by CARB staff, water-based cleaning requires specialized equipment in addition to the machine, and small operations will likely lack sufficient floor space to accommodate the equipment.

Carbon Dioxide - As CARB staff indicated in reference 7, the capital cost associated with installation of a carbon dioxide system is over \$140,000 per machine, which CARB staff found to be "prohibitively expensive" for many facilities given that the capital cost exceeds the total receipts of at least 40% of California dry cleaning operations.

Hydrocarbon and Stoddard Solvent and Puredry® - Hydrocarbon and Stoddard and Puredry® solvents, as noted by CARB staff, represent the most generally viable alternative to perchloroethylene-based dry cleaning machines. However, Section V of reference 7 raises some concerns regarding the toxicity of these solvents and notes that their use results in the release of volatile organic compounds (VOC), which are precursors to ozone formation into the atmosphere. As is well known, many areas of California do not comply with existing federal and state ambient air quality standards for ozone, and compliance will become an even greater issue if the federal ozone standards that are currently under review are made more stringent. As noted in the transcript of the May 25, 2006 hearing, concerns regarding increased VOC emissions due to the use of these solvents in dry cleaning was one of the primary reasons why staff did not recommend a ban on perchloroethylene at that time. Further, at the January 25th hearing the Board did not provide any assurances that it would not target VOC emissions from dry cleaning for future controls or refrain from banning the use of hydrocarbon and Stoddard and Puredry® solvent-based machines in the future, although the Board did direct the staff to "ensure that they consider the full useful life of equipment in any future rule making for this source category." Based on the above, these solvents are simply not

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a viable alternative for small single-machine operations that will not be able to survive the economic impacts of additional controls or bans on the technology.

GreenEarth® - This solvent is decamethylcyclopentasiloxane and, as noted in

reference 7, its toxicity is under investigation by both the U.S. EPA and the State of California. Given this, it appears, particularly in light of the ban on perchloroethylene-based dry cleaning machines, that there is a high likelihood of a similar ban on this technology. Therefore, it is not suitable as a general replacement for perchloroethylene in dry cleaning operations.

Propylene Glycol Ether - As noted by CARB staff, the toxicity of this solvent is also under investigation by the State of California. Again, given this, it appears, particularly in light of the ban on perchloroethylene-based dry cleaning machines, that there is a high likelihood of a similar ban on this technology. It is therefore not suitable as a general replacement for perchloroethylene in dry cleaning operations.

#### Authority of the California Air Resources Board to Make the Requested Amendments

CARB has documented its authority to adopt changes to Section 93109 in references 6 and 7 above as well in other areas. We do not believe that there is any issue related to CARB's authority to adopt regulations that the Board essentially considered for adoption in May 2006.

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#### Attachment A

##### Text of California Government Code Sections 11340.6 and 11340.712

11340.6. Except where the right to petition for adoption of a regulation is restricted by statute to a designated group or where the form of procedure for such a petition is otherwise prescribed by statute, any interested person may petition a state agency requesting the adoption, amendment, or repeal of a regulation as provided in Article 5 (commencing with Section 11346). This petition shall state the following clearly and concisely:

- (a) The substance or nature of the regulation, amendment, or repeal requested.
- (b) The reason for the request.
- (c) Reference to the authority of the state agency to take the action requested.

11340.7. (a) Upon receipt of a petition requesting the adoption, amendment, or repeal of a regulation pursuant to Article 5 (commencing with Section 11346), a state agency shall notify the petitioner in writing of the receipt and shall within 30 days deny the petition indicating why the agency has reached its decision on the merits of the petition in writing or schedule the matter for public hearing in accordance with the notice and hearing requirements of that article.

- (b) A state agency may grant or deny the petition in part, and may grant any other relief or take any other action as it may determine to be warranted by the petition and shall notify the petitioner in writing of this action.
- (c) Any interested person may request a reconsideration of any part or all of a decision of any agency on any petition submitted. The request shall be

submitted in accordance with Section 11340.6 and include the reason or reasons why an agency should reconsider its previous decision no later than 60 days after the date of the decision involved. The agency's reconsideration of any matter relating to a petition shall be subject to subdivision (a).

(d) Any decision of a state agency denying in whole or in part or granting in whole or in part a petition requesting the adoption, amendment, or repeal of a regulation pursuant to Article 5 (commencing with Section 11346) shall be in writing and shall be transmitted to the Office of Administrative Law for publication in

12 Text obtained from:

<http://www.leginfo.ca.gov/cgi-bin/displaycode?section=gov&group=1100112000&file=11340-11342.4>

the California Regulatory Notice Register at the earliest practicable date. The decision shall identify the agency, the party submitting the petition, the provisions of the California Code of Regulations requested to be affected, reference to authority to take the action requested, the reasons supporting the agency determination, an agency contact person, and the right of interested persons to obtain a copy of the petition from the agency.

#### Attachment B

#### Requested Regulatory Changes

Modify current Section 93109, Title 17, California Code of Regulations, to read as follows:

Section 93109. Airborne Toxic Control Measure for Emissions of Toxic Air Contaminants from Dry Cleaning Operations.

(a) Purpose.

The purpose of this control measure is to reduce emissions of toxic air contaminants (TACs), including perchloroethylene (Perc), from dry cleaning operations. Reducing these emissions will further protect the public health, especially for Californians who live or work near dry cleaning facilities.

(b) Applicability.

This section applies to any person who owns, operates, manufactures, or distributes dry cleaning equipment in California that uses any solvent that contains Perc or an identified TAC.

(c) Definitions. The definitions in Health and Safety Code division 26, part 1, chapter 1, commencing with section 39010, shall apply, with the following additions:

(1) "Add-on secondary control machine" means a closed-loop machine with a secondary control system that is designed or offered as a separate retrofit system for use on multiple machine makes and models.

(2) "Adsorptive cartridge filter" means a replaceable cartridge filter that contains diatomaceous earth, activated carbon, or activated clay as the filter medium.

(3) "Carbon adsorber" means an air cleaning device that consists of an inlet for exhaust gases from a dry cleaning machine; activated carbon in the form of a fixed bed, cartridge, or canister, as an adsorbent; an outlet for exhaust gases; and a system to regenerate or reclaim saturated adsorbent.

(4) "Cartridge filter" means a replaceable cartridge filter that contains one of the following as the filter medium, including but not limited to, paper, activated carbon, clay, paper and clay, or paper and activated carbon. Cartridge filters include, but are not limited to, standard filters, split filters, "jumbo" filters, and all carbon polishing filters.

(5) "Closed-loop machine" means dry cleaning equipment in which washing, extraction, and drying are all performed in the same single unit (also known as dry-to-dry) and which recirculates Perc-laden vapor through a primary control system with or without a secondary control system with no exhaust to the atmosphere during the drying cycle. A closed-loop machine may allow for venting to the ambient air through a fugitive control system after the drying cycle is complete and only while the machine door is open.

(6) "Co-residential" means sharing a common wall, floor, or ceiling with a residence or located within the same building.

(7) "Converted machine" means an existing vented machine that has been modified to be a closed-loop machine by eliminating the aeration step, installing a primary control system, and providing for recirculation of the Perc-laden vapor with no exhaust to the atmosphere or workroom during the drying cycle. A converted machine may allow for venting to the ambient air through a fugitive control system after the drying cycle is complete and only while the machine door is open.

(8) "Cool-down" means the portion of the drying cycle that begins when the heating mechanism deactivates and the refrigerated condenser continues to reduce the temperature of the air recirculating through the drum to reduce the concentration of Perc in the drum.

(9) "Desorption" means regeneration of an activated carbon bed, or any other type of vapor adsorber by removal of the adsorbed solvent using hot air, steam, or other means.

(10) "Dip tank operations" means the immersion of materials in a solution that contains Perc, for purposes other than dry cleaning, in a tank or container that is separate from the dry cleaning equipment.

(11) "District" means an air pollution control or air quality management district as defined in Health and Safety Code section 39025.

(12) "Drum" means the rotating cylinder or wheel of the dry cleaning machine that holds the materials being cleaned.

(13) "Dry cleaning" means the process used to remove soil, greases, paints, and other unwanted substances from materials with Perc or other solvents.

(14) "Dry cleaning equipment" means any machine, device, or apparatus that uses a solvent to dry clean materials or to remove residual solvent from previously cleaned materials. Dry cleaning equipment may include, but is not limited to, a converted machine, a closed-loop machine, a reclaimer, a drying cabinet; a primary control machine, primary control machine with a secondary control system; or an integral secondary control machine.

(15) "Dry cleaning system" means all of the following equipment, devices, or apparatus associated with any dry cleaning process: dry cleaning equipment; filter or purification systems; waste holding, treatment, or disposal systems; solvent supply systems; dip tanks; pumps; gaskets; piping, ducting, fittings, valves, or flanges that convey Perc or other TAC vapors; and control systems.

(16) "Drying cabinet" means a housing in which materials previously cleaned with Perc or another solvent containing a TAC are placed to dry and which is used only to dry materials that would otherwise be damaged by the heat and tumbling action of the drying cycle.

(17) "Drying cycle" means the process used to actively remove the Perc remaining in the materials after washing and extraction. For closed-loop

machines, the heated portion of the cycle is followed by cool-down and may be extended beyond cool-down by the activation of a control system. The drying cycle begins when heating coils are activated and ends when the machine ceases rotation of the drum for a converted or primary control machine, or at the end of the adsorption cycle for a secondary control machine.

(18) "Enhanced ventilation system" means a ventilation system that is specifically designed to capture fugitive emissions from a dry cleaning machine. Types of enhanced ventilation systems include local ventilation systems, partial vapor barrier rooms, and full vapor barrier rooms.

(19) "Environmental training program" means an initial course or a refresher course of the environmental training program for dry cleaning operations that has been authorized by the Air Resources Board according to the requirements of title 17, California Code of Regulations, section 93110.

(20) "Executive Officer of the Air Resources Board" means the executive officer of the California Air Resources Board or his or her delegate.

(21) "Existing facility" means any facility that operated Perc dry cleaning equipment prior to July 1, 2009.

(22) "Facility" means any entity or entities which own or operate dry cleaning equipment, are owned or operated by the same person or persons, and are located on the same parcel or contiguous parcels.

(23) "Fugitive control system" means a device or apparatus that collects fugitive Perc vapors from the machine door, button and lint traps, still, or other intentional openings of the dry cleaning equipment and routes those vapors to a device that reduces the mass of Perc prior to exhaust of the vapor to the atmosphere.

(24) "Full-time employee" means any person who is employed at the dry cleaning facility and averages at least 30 hours per week in any 90-day period.

(25) "Full vapor barrier room" means a room that completely surrounds a closed loop machine and is constructed of material resistant to diffusion of solvent vapors. Fugitive emissions are vented through a stack above the building. According to specifications, the exhaust fan may be installed inside the full vapor barrier room or near the ceiling at the back of the machine or outside the facility on a wall or on the roof. The fan should be of a high pressure (1-3 inches of water) design with a minimum capacity of 1,000 cubic feet per minute; and it should be in continuous operation (24 hours a day, 365 days a year) in a co-residential facility and whenever the dry cleaning machine is operating or being maintained in a non-residential facility. A control interlock must be installed to interrupt power to the dry cleaning machine if the ventilation fan is not operating. The stack should extend at least 5 feet (a 10-foot stack is recommended) above the roofline or any adjacent roof and at least 30 feet from any air intake or window. Emissions must be exhausted vertically (no rain caps). In addition, there should be one air exchange every 5 minutes. The diameter of the stack should generally be 8 to 14 inches with an air flow rate of 1,000 to 2,500 cubic feet per minute.

(26) "Gallons of perchloroethylene purchased" means the volume of Perc, in gallons, introduced into the dry cleaning equipment, and not recovered at the facility for reuse on-site in the dry cleaning equipment, over a specified time period.

(27) "Halogenated-hydrocarbon detector" means a portable device capable of detecting vapor concentrations of Perc of 25 ppmv or less and indicating an increasing concentration by emitting an audible signal or visual indicator that varies as the concentration changes.

(28) "Integral secondary control machine" means a closed-loop machine that is designed and offered with an integral secondary control system.

(29) "Integral secondary control system" means a carbon adsorber, or an equivalent device that is designed and offered as an integral part of a production package with a single make and model of dry cleaning machine and primary control system.

(30) "Liquid leak" means a leak of liquid containing Perc of more than 1 drop every 3 minutes.

(31) "Local ventilation system" means a ventilation system with a high capacity fan, exhaust stack, and physical apparatus/structures (such as fume hoods, shrouds, flexible walls - vertical plastic strips), near the closed-loop machine, that are designed and constructed of materials resistant to diffusion of solvent vapors. A minimum of 1,000 cubic feet per minute airflow with a capture velocity greater than 100 feet per minute is required for the ventilation fan. The fan should be in operation whenever the dry cleaning machine and related equipment are operated. A control interlock must be installed to interrupt power to the dry cleaning machine if the ventilation fan is not operating. In addition, for stand-alone buildings, there should be one air exchange rate every 5 minutes. Walls or plastic strip curtains should extend at least 3 feet in front and back of the machine. The exhaust point should be at least 5 feet above the building or adjacent building and 30 feet from any window or air intake.

(32) "Materials" means wearing apparel, draperies, linens, fabrics, textiles, rugs, leather, and other goods that are dry cleaned.

(33) "Muck cooker" means a device for heating Perc-laden waste material to volatilize and recover Perc.

(34) "New facility" means a facility that did not operate any dry cleaning equipment using Perc or any solvent that contains a TAC prior to July 1, 2009. Facility relocations shall be considered new facilities for the purposes of this control measure.

(35) "Partial vapor barrier room" means a room that encloses the back of a closed-loop machine using materials resistant to diffusion of solvent vapors, with the front panel and loading door exposed for convenient loading and unloading. A high capacity fan within the room draws fugitive vapor through a stack for release outside. The ventilation duct or fan intake should be placed near the ceiling directly above the back of the machine or at the rear of the partial vapor barrier room. The fan should be in operation whenever the dry cleaning machine and related equipment are operated. A control interlock must be installed to interrupt power to the dry cleaning machine if the ventilation fan is not operating. In addition, there should be one air exchange rate every 5 minutes. The stack should extend at least 5 feet above the building roofline or any adjacent roof and at least 30 feet from any air intake or window. Emissions must be exhausted vertically (no rain caps). The diameter of the stack should generally be 8 to 14 inches with an air flow rate of 1,000 to 2,500 cubic feet per minute.

(36) "Perchloroethylene (Perc)" means the substance with the chemical formula 'C2Cl4', also known by the name 'tetrachloroethylene', which has been identified by the Air Resources Board and listed as a TAC in title 17, California Code of Regulations, section 93000.

(37) "Pounds of materials cleaned per load" means the total dry weight, in pounds, of the materials in each load dry cleaned at the facility, as determined by weighing each load on a scale prior to dry cleaning and recording the value.

(38) "Primary control machine" means a closed loop machine used for dry cleaning that is equipped with a primary control system.

(39) "Primary control system" means a refrigerated condenser, or an equivalent closed-loop vapor recovery system approved by the district.

(40) "Reclaimer" means a machine, device, or apparatus used only to remove residual Perc from materials that have been previously cleaned in a separate piece of dry cleaning equipment.

(41) "Reasonably available", as it applies to an initial course for the environmental training program, means that the course is offered within 200 miles of the district boundaries and that all such courses have a capacity, in the aggregate, that is adequate to accommodate at least one person from each facility in the district required to certify a trained operator at that time.

(42) "Refrigerated condenser" means a closed-loop vapor recovery system into which Perc vapors are introduced and recovered by cooling below the dew point of the Perc.

(43) "Residence" means any dwelling or housing which is owned, rented, or occupied by the same person for a period of 180 days or more, excluding short-term housing such as a motel or hotel room rented and occupied by the same person for a period of less than 180 days.

(44) "Secondary control system" means a device or apparatus (typically a carbon adsorber) that reduces the concentration of Perc in the recirculating air at the end of the drying cycle beyond the level achievable with a refrigerated condenser alone.

(45) "Self-service dry cleaning machine" means a Perc dry cleaning machine that is loaded, activated, or unloaded by the customer.

(46) "Sensitive receptor" means any residence; any educational resource for minors including, but not limited to, schools or preschools for kindergarten through twelfth grade (K-12) or early childhood education; and any facility licensed under Health and Safety Code division 2, commencing with section 1200, for health care or community care including, but not limited to, hospitals, clinics, skilled nursing, long-term care, adult day care, foster and small family homes, child care centers, and family day care homes.

(47) "Separator" means any device used to recover Perc from a water-Perc mixture.

(48) "Solvent" means a liquid substance other than water used in dry cleaning equipment.

(49) "Substantial use of an authority to construct" means one or more of the following: (A) the equipment that constitutes the source has been purchased or acquired; (B) construction activities, other than grading or installation of utilities or foundations, have begun and are continuing; or (C) a contract to complete construction of the source within one year has been entered into.

(50) "TAC" or "toxic air contaminant" means an air contaminant that has been identified by the California Air Resources Board under sections 93000 and 93001 of title 13, California Code of Regulations, or under title 42, United States Code, section 7412(b) and its implementing federal regulations.

(51) "Trained operator" means the owner, the operator, or an employee of the facility, who holds a record of completion for the initial course of an environmental training program and maintains her/his status by successfully completing the refresher courses as required.

(52) "Transfer machine" means a combination of Perc dry cleaning equipment in which washing and extraction are performed in one unit and drying is performed in a separate unit.

(53) "Vapor adsorber" means a bed of activated carbon or other adsorbent into which Perc vapors are introduced and trapped for subsequent desorption.

(54) "Vapor leak" means an emission of Perc vapor from unintended openings in the dry cleaning system, as indicated by a rapid audible signal or visual signal from a halogenated-hydrocarbon detector or a concentration of Perc exceeding 50 ppmv as Perc as indicated by a portable analyzer.

(55) "Vented machine" means dry cleaning equipment in which washing, extraction, and drying are all performed in the same single unit and in which fresh air is introduced into the drum in the last step of the drying cycle and exhausted to the atmosphere, either directly or through a control device.

(56) "Wastewater treatment unit" means a device that treats Perc contaminated wastewater through the addition of thermal or chemical energy, or through physical action, such as carbon or another type of adsorbent filtration system.

(57) "Water-repelling operations" means the treatment of materials with a Perccontaining solution for the purpose of making the material water resistant or water-repelling.

(58) "Workday" means any consecutive 24-hour period commencing at the same time each calendar day as defined in the California Code of Regulations, Labor Code section 500(a).

(59) "Zoned for residential use" means that a local land-use ordinance or other government requirement allows residences as a permitted use.

(d) Prohibitions. The owner/operator of a facility shall not operate any of the following types of equipment related to Perc dry cleaning:

(1) A transfer machine, including any reclaimer or other device in which materials that have been previously dry cleaned with Perc are placed to dry;

(2) A vented machine;

(3) A self-service dry cleaning machine;

(4) A primary control or converted machine installed after July 1, 2009;

(5) A drying cabinet;

(6) Dip tank operations; and

(7) A secondary control system that has not been certified pursuant to subsection (1).

(e) Requirements for Co-residential Facilities.

(1) No co-residential facility shall install any dry cleaning equipment which uses solvents that contain Perc.

(2) Existing co-residential facilities shall remove any currently installed Perc dry cleaning machine by July 1, 2010.

(f) Requirements for New Facilities.

(1) No person shall operate a new facility which uses Perc unless the following conditions are met:

(A) The facility is located at least 300 feet from a sensitive receptor;

(B) The facility is located outside of and at least 300 feet from the boundary of an area that is zoned for residential use;

(C) An enhanced ventilation system has been installed; and

(D) Facilities using Perc shall install, operate, and maintain an integral secondary control machine.

(2) No person shall operate a new facility which uses a TAC other than Perc unless the following conditions are met:

(A) The facility shall install, operate, and maintain best available control technology as required by applicable district rules or regulations; or

(B) In the absence of applicable district rules or regulations, the owner or operator of a new facility shall submit to and have approved by the district a control method or methods that achieve reductions in the risk associated with the TAC that equal or exceed the reductions for Perc under this section.

(3) A new facility shall be deemed to meet the requirement specified in subsection (f)(1)(A) and (B) if one of the following criteria is met, even if the new facility does not meet the requirement at the time of initial startup

(e.g., because of a zoning change that occurs after the authority to construct is issued):

(A) If it meets the requirement at the time it is issued an authority to construct by the permitting agency, and substantial use of the authority to construct takes place within one year after it is issued; or

(B) If it meets the requirement at the time it is issued an authority to construct by the permitting agency, and substantial use of the authority to construct takes place before any zoning change occurs that affects the operation's ability to meet the standard at the time of initial startup.

(g) Requirements for Existing Facilities.

(1) All existing facilities that operate any dry cleaning equipment using Perc shall use an integral secondary control machine. For existing facilities that operated Perc dry cleaning equipment prior to July 1, 2007, and that do not have an integral secondary control machine, the compliance schedule is as follows:

(A) If the facility is 100 feet or more from a sensitive receptor, the facility shall install an integral secondary control machine (or non-Perc alternative) by July 1, 2014, or when the primary, converted, or "add-on" secondary control machine is 20 years of age, whichever comes later.

(B) If a facility is within 100 feet of a sensitive receptor, the facility shall install an integral secondary control machine (or non-Perc alternative) by July 1, 2014, or when the primary, converted, or "add-on" secondary control machine is 20 years of age, whichever is later.

(C) All existing facilities that have not already done so under (A) or (B) above, shall install an integral secondary control machine (or non-Perc alternative) by July 1, 2020.

(D) An existing primary control machine that is designed to accept a secondary control system will qualify as an integral secondary control machine if the following conditions are met:

1. The existing primary control machine is less than five years old on July 1, 2007;

2. The secondary control system has been designed for the make and model of the existing primary control machine;

3. The secondary control system has been demonstrated, pursuant to the requirements of subsection (1), to achieve a Perc concentration in the drum of 300 ppmv or less in each test; and

4. The secondary control system is installed by the machine manufacturer or distributor by July 1, 2010.

(2) All existing facilities shall install an enhanced ventilation system. Compliance shall be according to the following:

(A) By July 1, 2011, if a sensitive receptor is within 100 feet of the facility as of July 1, 2009; or

(B) By July 1, 2012, if a sensitive receptor is 100 feet or greater from the facility as of July 1, 2009.

(h) Specifications for Integral Secondary Control Systems. An integral secondary control system shall:

(1) Be designed to function with a primary control system or be designed to function as a combined primary control system and secondary control system that meets all of the applicable requirements of this section;

(2) Not exhaust to the atmosphere or workroom;

(3) Not require the addition of any form of water to the secondary control system that results in physical contact between the water and Perc;

(4) Have a holding capacity equal to or greater than 200 percent of the maximum quantity of Perc vapor expected in the drum prior to activation of the system; and

(5) Use a technology that has been demonstrated, pursuant to the requirements of subsection (1), to achieve a Perc concentration in the drum of 300 ppmv or less in each test.

(i) Required Good Operating Practices. No person shall operate Perc dry cleaning equipment unless all of the following requirements are met:

(1) Environmental training requirements. Each facility shall have one or more trained operators.

(A) A trained operator shall be the owner, the operator, or another employee of the facility, who successfully completes the initial course of an environmental training program to become a trained operator. Evidence of successful completion of the initial course shall be the original record of completion issued pursuant to title 17, California Code of Regulations, Section 93110.

(B) One person cannot serve as the trained operator for two or more facilities simultaneously.

(C) The trained operator shall be an owner or employee of the facility and be on site while the dry cleaning machine is in operation.

(D) Each trained operator shall successfully complete the refresher course of an environmental training program at least once every three years. Evidence of successful completion of each refresher course shall be the date of the course and the instructor's signature on the original record of completion.

(E) If the facility has only one trained operator and the trained operator leaves the employ of the facility, the facility shall:

1. Notify the district in writing within 15 days of the departure of the trained operator; and

2. Obtain certification for a replacement trained operator within 3 months.

i. If the district determines that the initial course of an environmental training program is not reasonably available, the district may extend the certification period for a replacement trained operator until 1 month after the course is reasonably available.

(2) Operation and maintenance requirements. The trained operator shall operate and maintain all components of the dry cleaning system in accordance with the requirements of this section and the conditions specified in the facility's operating permit. For operations not specifically addressed, the components shall be operated and maintained in accordance with the manufacturer's recommendations.

(A) The district shall provide an operation and maintenance checklist to the facility. Each operation and maintenance function and the date performed shall be recorded on the checklist. The operation and maintenance checklist shall include, at a minimum, the following requirements:

1. Refrigerated condensers shall be operated to ensure that exhaust gases are recirculated until the air-vapor stream temperature on the outlet side of the refrigerated condenser, downstream of any bypass, is less than or equal to 45°F (7.2°C).

i. Refrigerated condensers shall have a graduated or digital thermometer with a minimum range from 0°F (18°C) to 150°F (66°C), which measures the temperature of the outlet vapor stream, downstream of any bypass of the condenser, and is easily visible to the operator.

2. Primary control systems, other than refrigerated condensers, shall be operated to ensure that exhaust gases are recirculated until the Perc

concentration in the drum is less than or equal to 8,600 ppmv at the end of the drying cycle, before the machine door is opened.

3. Vapor adsorbers used as a primary control system or a secondary control system shall be operated to ensure that exhaust gases are recirculated at the temperature specified by the district, based on the manufacturer's recommendations for optimum adsorption. These vapor adsorbers shall be desorbed according to the conditions specified by the district in the facility's operating permit, including a requirement that no Perc vapors shall be routed to the atmosphere during routine operation or desorption.

4. Cartridge filters and adsorptive cartridge filters shall be handled using one of the following methods:

- i. Drained in the filter housing, before disposal, for no less than 24 hours for cartridge filters and 48 hours for adsorptive cartridge filters. If the filters are then transferred to a separate device to further reduce the volume of Perc, this treatment shall be done in a system that routes any vapor to a primary control system, with no exhaust to the atmosphere or workroom; or
- ii. Dried, stripped, sparged, or otherwise treated, within the sealed filter housing, to reduce the volume of Perc contained in the filter.

5. A still, and any muck cooker, shall not exceed 75 percent of its capacity, or an alternative level recommended by the manufacturer. A still, and any muck cooker, shall cool to 100°F (38°C) or less before emptying or cleaning.

6. Button and lint traps shall be cleaned and inspected for damage each workday and the lint placed in a tightly sealed container.

7. The facility owner/operator shall keep on site a spare set of gaskets for the loading door, still, lint trap, button trap, and water separator.

8. The facility owner/operator shall keep on site a spare lint filter.

9. All parts of the dry cleaning system where Perc may be exposed to the atmosphere or workroom shall be kept closed at all times except when access is required for proper operation and maintenance.

10. Wastewater treatment units shall be operated to ensure that no liquid Perc or visible emulsion is allowed to vaporize.

11. Carbon adsorbers in integral secondary control machines must be designed for non-contact steam or hot air stripping operation, and must be stripped or desorbed in accordance with manufacturer's instructions or at least weekly, whichever is more frequent.

(3) Leak check and repair requirements. The trained operator shall inspect the dry cleaning system for vapor leaks. The district shall provide a leak inspection checklist to the facility. The trained operator, shall record the status of each component on the checklist.

(A) Weekly Leak Checks. The dry cleaning system shall be inspected at least once per week for both liquid leaks and vapor leaks, using one of the following techniques:

1. A halogenated-hydrocarbon detector; or
2. A portable gas analyzer or an alternative method approved by the district.

(B) Annual Leak Checks. The dry cleaning system shall be inspected at least once per year for liquid and vapor leaks using a portable detector which gives quantitative results with less than ten percent uncertainty at 50 ppmv of Perc.

(C) Any liquid leak or vapor leak that has been detected by the operator shall be noted on the checklist and repaired according to the requirements of this subsection. If the leak is not repaired at the time of detection, the leaking component shall be physically marked or tagged in a manner that is readily observable by a district inspector.

(D) Any liquid leak or vapor leak detected by the district, which has not been so noted on the checklist and marked on the leaking component of the dry

cleaning system, shall constitute a violation of this section. For enforcement purposes, the district shall identify the presence of a vapor leak by determining the concentration of Perc with a portable analyzer according to ARB Test Method 21 (title 17, California Code of Regulations, section 94124).

(E) Any liquid leak or vapor leak shall be repaired immediately upon detection. For the purposes of this section a business day shall mean Monday through Friday, except holidays, as provided in Government Code of Regulation section 6700 and following.

1. If repair parts are not available at the facility, the parts shall be ordered within the next business day of detecting such a leak. Such repair parts shall be installed within two business days after receipt. A facility with a leak that has not been repaired by the end of the 7th business day after detection shall not operate the dry cleaning machine, until the leak is repaired, without a leak-repair extension from the district.

2. A district may grant a leak-repair extension to a facility, for a single period of 30 days or less, if the district makes the following findings:

i. The delay in repairing the leak could not have been avoided by action on the part of the facility;

ii. The facility used reasonable preventive measures and acted promptly to initiate the repair;

iii. The leak would not significantly increase exposure to TACs near the facility; and

iv. The facility is in compliance with all other requirements of this section and has a history of compliance.

(4) Annual Drum Concentration Checks. Effective July 1, 2010, each facility shall perform annual drum concentration testing as specified below.

(A) Sampling ports shall be installed in the piping, upstream and downstream of the carbon bed. The sampling ports should be in a straight section of piping, and at least six pipe or duct diameters downstream (shown as distance B in figure below) and two pipe or duct diameters upstream (shown as distance A in figure below) from any flow disturbance such as a bend, expansion, contraction or process in that pipe, if possible.

(B) The sampling ports shall be at least ¼" (one-quarter inch) in diameter. Each port shall be equipped with a Swagelok® male connector, or equivalent, 1/8" (one-eighth inch) national pipe thread (NPT), 1/8" (one-eighth inch) tube fitting and 1/8" (one-eighth inch) tubing plug.

(C) At least once per year measure the Perc concentration at the end of a drying cycle from the sampling ports using a portable Perc detector that gives quantitative results with less than ten percent uncertainty at 50 ppmv of Perc.

(D) The concentration of Perc in the drum, as represented by the reading from the sample port upstream of the carbon bed, shall be:

1. Less than 500 ppmv at the end of the drying cycle for a new integral secondary control machine during the initial start-up period (under the Authority to Construct); and

2. Less than 1000 ppmv at the end of the drying cycle during normal operation after the initial start-up period.

(E) The concentration of Perc at the sampling port downstream of the carbon bed shall be less than 100 ppmv while the secondary control system is operating.

(j) Recordkeeping Requirements.

(1) The following records shall be retained by all facilities for at least 5 years:

- (A) Method of wastewater disposal. If a wastewater treatment unit is being used, then the make and model of the treatment unit shall be recorded;
  - (B) Purchase and delivery receipts for the dry cleaning solvent indicating the volume in gallons;
  - (C) For add-on or integral secondary control machine operations: the start time and finish time of each regeneration; and the temperature of chilled air;
  - (D) Effective July 1, 2010, for add-on or integral secondary control machine: Perc concentrations measured annually at the sampling ports located upstream and downstream of the secondary control system at the end of the drying cycle;
  - (E) The operation and maintenance checklists required by subsection (i)(2)(A) and the completed leak inspection checklists required by subsection (i)(3);
  - (F) For liquid leaks or vapor leaks that were not repaired at the time of detection, a record of the leaking component(s) of the dry cleaning system awaiting repair and the action(s) taken to complete the repair. The record shall include copies of purchase orders or other written records showing when the repair parts were ordered and/or service was requested; and
  - (G) The type of enhanced ventilation system in the facility (e.g. local ventilation system, partial vapor barrier room, or full vapor barrier room).
- (2) The manufacturer's operating manual for all components of the dry cleaning system shall be retained for the life of the equipment.
- (3) The original record of completion of the environmental training program for each trained operator shall be retained during the employment of that person. A copy of the record of completion shall be retained for an additional period of two years beyond the separation of that person from employment at the facility.
- (4) All records, or copies thereof, shall be maintained in English and shall be accessible at the facility at all times.

(k) Reporting Requirements.

- (1) The owner or operator of each facility shall prepare an annual report which covers the period of January 1st through December 31st of each year. The annual report shall include the following information:
- (A) The estimated distance of the facility to the nearest sensitive receptor and nearest business;
  - (B) A copy of the record of completion of the environmental training program for each trained operator;
  - (C) The total of the pounds of materials cleaned;
  - (D) The gallons of solvent purchased for all solvent additions in the reporting period;
  - (E) The make, model, serial number, and date of manufacture of the dry cleaning machine;
  - (F) The type of enhanced ventilation system in the facility (e.g. local ventilation system, partial vapor barrier room, or full vapor barrier room); and
  - (G) The method of wastewater disposal. If a wastewater treatment unit is used, the make and model of the treatment unit shall be reported.
- (2) The owner or operator of each facility shall submit this annual report to the district by February 2nd of each year.
- (3) A district may exempt a source from item (1) of this subsection if the district maintains current equivalent information on the facility.
- (4) The districts shall report to ARB the annual Perc purchases of permitted facilities by April 2nd of each year or an alternative date agreed upon by the district and ARB.
- (1) Testing and Certification of Secondary Control Systems.

(1) Test Program and Scope.

(A) For a given design, a single test program shall be conducted, in accordance with the following procedures, to meet the specifications in subsection (h).

(B) The person conducting the test program shall prepare a test plan that describes, in detail, the dry cleaning machine and control systems being tested, the test protocol, and the test method.

(C) A minimum of three tests shall be conducted for each test program on each control system design.

(D) All tests for a single test program shall be conducted on a single dry cleaning machine.

(E) When testing a particular dry cleaning machine model that is available in various drum capacities and carbon weights in the secondary control system, the testing shall, at a minimum, be conducted on the configuration with the largest ratio of drum capacity to weight of the carbon. The dry cleaning machine drum/carbon ratio shall be calculated as follows: machine drum capacity (pounds)

drum / carbon ratio = Weight of carbon in absorber (pounds)

(F) Test results may not be applied to a different make/model or replacement dry cleaning machine that has been reconfigured.

(2) Test Conditions. Testing shall be conducted under normal operating conditions, unless otherwise specified.

(A) Each test shall be conducted during the cleaning of one load of materials, after running 80 percent of the manufacturer's recommended number of loads before carbon regeneration.

1. The machine shall be filled to no less than 85 percent of its drum capacity with materials for each test. At least 70 percent of the load to be cleaned must consist of woolen or absorbent padded material.

2. The weight of materials shall be recorded for each test.

(B) An integral secondary control machine shall be tested on a closed-loop machine with the primary control system operating normally.

(3) Test Methods.

(A) The temperature of the air in the dry cleaning machine drum shall be measured and recorded continuously during the entire drying cycle, including the operation of the secondary control system.

(B) Sampling shall be conducted as follows:

1. Sampling shall begin at the end of the drying cycle and be completed within 5 minutes.

2. Sampling shall be completed prior to the opening of the dry cleaning machine door and activation of any fugitive control system.

(C) The Perc concentration in the dry cleaning machine drum shall be determined by one of the following methods:

1. A sampling port and valve shall be appropriately placed to draw a sample from the interior of the drum or the lint filter housing. The sampling port shall be connected to a gas chromatograph by ¼" (one-quarter inch), outside diameter, Teflon tubing. Any sampling pump shall have Teflon diaphragms. The gas chromatograph shall measure the concentrations of Perc in accordance with ARB Method 422 (title 17, California Code of Regulations, section 94132) or NIOSH Method 1003 (NIOSH Manual of Analytical Methods, U.S. Department of Health and Human Services, August 15, 1987).

2. A sampling port and valve shall be appropriately placed to draw a sample from the interior of the drum or the lint filter housing. The sampling port

shall be connected by ¼" (onequarter inch) outside diameter Teflon tubing to a Tedlar bag. Any sampling pump shall have Teflon diaphragms. The concentration of Perc in the air sampled shall be measured in accordance with ARB Method 422 (title 17, California Code of Regulations, section 94132) or NIOSH Method 1003 (NIOSH Manual of Analytical Methods, U.S. Department of Health and Human Services, August 15, 1987) within 24 hours of sampling. If an independent laboratory is contracted to perform the analysis of the samples, the chain of custody procedures contained in ARB Method 422 or NIOSH Method 1003 shall be followed.

(D) An alternative test method deemed acceptable by the Executive Officer of the Air Resources Board.

(4) Certification Procedures.

(A) The manufacturer shall submit to the Air Resources Board the following information:

1. A detailed description of the dry cleaning system including control devices;
2. A copy of the operations manual, written in plain English;
3. Production photographs of the front and rear of the dry cleaning machine for which certification is being requested;
4. The test plan required by subsection (1)(1)(B), including a detailed summary of the test results; and
5. Any other information deemed necessary by the Air Resources Board to consider the request for certification.

(m) Wastewater Treatment.

(1) Effective July 1, 2010, wastewater shall be hauled away by a registered hazardous waste transporter or treated in a wastewater treatment unit.

(2) The wastewater treatment unit shall meet the following requirements:

(A) A self-contained unit designed to minimize solvent discharge to the environment, including but not limited to the air, water, and sewer system.

(B) The wastewater shall be placed in a wastewater treatment unit that has adequate processing capacity for the facility as determined by the district; and

(C) The wastewater treatment unit shall be equipped with a separator.

The separator shall have all of the following:

1. A solvent/water separation settling chamber; and
2. Carbon or another type of adsorbent filtration system that the wastewater cycles through.

(n) Water-repelling Operations.

(1) No person shall perform water-repelling operations unless all materials to be treated with Perc water-repelling solutions are treated in a closed-loop machine.

(o) Severability.

Each part of this section is deemed severable, and in the event that part of this section is held to be invalid, the remainder of this section shall continue in full force and effect.

NOTE: Authority cited: sections 39600, 39601, 39650, 39655, 39656, 39658, 39659, 39665, and 39666, Health and Safety Code; sections 7412 and 7416, title 42, United States Code.

**Reference D**

**Petition Response Letter from Mr. James N. Goldstene, Executive Officer of ARB,  
to Mr. Lawrence Lim, Chairman of Ko-Am Cleaners Association of California,  
Dated March 7, 2008**



**Linda S. Adams**  
Secretary for  
Environmental Protection

# Air Resources Board

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**Mary D. Nichols, Chairman**  
1001 I Street • P.O. Box 2815  
Sacramento, California 95812 • [www.arb.ca.gov](http://www.arb.ca.gov)



**Arnold Schwarzenegger**  
Governor

March 7, 2008

Mr. Lawrence Lim, Chairman  
Ko-Am Cleaners Association of California  
5420 Ygnacio Valley Road, Suite 60  
Concord, California 94521

Dear Mr. Lim:

On February 7, 2008, the California Air Resources Board (ARB or Board) received your letter together with the petition entitled "Petition of the Ko-Am Cleaners Association of California to the California Air Resources Board for Amendments to Section 93109, Title 17 California Code of Regulations" (hereinafter the Petition). You have cited the following as authority for the requested action: Health and Safety Code (HSC) sections 39600 and 39601(a).

The California Administrative Procedure Act (APA) provides that any interested person may petition a state agency requesting the adoption, amendment, or repeal of a regulation as provided in Government Code section 11340.6. The petition must clearly and concisely state the substance or nature of the regulation, amendment or repeal requested, the reason for the request, and reference to the authority of the state agency to take the action requested. (Government Code section 11340.6(a)-(c)). The APA further provides that a state agency shall notify the petitioner in writing of the receipt and shall within 30 days either deny the petition indicating why the agency has reached its decision on the merits of the petition in writing or schedule the matter for public hearing in accordance with the notice and hearing requirements of the APA. (Government Code section 11340.7.) By this letter, we are advising you that ARB has denied the Petition.<sup>2</sup> The basis for my denial is set forth in this letter and the references listed on the attachment to this letter.

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<sup>2</sup> The Board may delegate any duty it deems appropriate to its Executive Officer (Health and Safety Code section 39515(a)). Moreover, the Board is conclusively presumed to have delegated any of its powers to the Executive Officer unless it has expressly reserved that power to itself (Health and Safety Code (HSC) section 39516.) The Board has not reserved the power to act on rulemaking petitions and it is, therefore, appropriate for me to act on the Petition pursuant to my delegated authority.

*The energy challenge facing California is real. Every Californian needs to take immediate action to reduce energy consumption. For a list of simple ways you can reduce demand and cut your energy costs, see our website: <http://www.arb.ca.gov>.*

California Environmental Protection Agency

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## **The Regulation Addressed by the Petition**

The Petition requests that ARB amend section 93109 of title 17, California Code of Regulations (CCR), which is generally known as the Airborne Toxic Control Measure for Emissions of Perchloroethylene (Perc) from Dry Cleaning and Water-Repelling Operations (Dry Cleaning ATCM). We will briefly summarize some of the key provisions of the regulation. The Dry Cleaning ATCM prohibits the sale or lease of new Perc dry cleaning machines beginning on January 1, 2008, eliminates the use of existing Perc machines at co-residential facilities (facilities that share a wall with, or are located in the same building, as a residence) by July 1, 2010, requires that machines that are 15 years or older be removed from service by July 1, 2010, and requires that all other Perc machines be removed from service once they become 15 years old or by January 1, 2023, whichever is sooner. In addition, the Dry Cleaning ATCM expands good operating practices and recordkeeping and reporting requirements for Perc dry cleaners, and requires Perc manufacturers and distributors to report and keep records of their Perc sales to California dry cleaners.

The Petition requests ARB to amend the Dry Cleaning ATCM to incorporate most of the requirements of the proposal that was considered by the Board at its May 25, 2006 public hearing. The key elements of your request include: 1) elimination of the prohibition on installation of Perc-based dry cleaning machines; 2) elimination of the general requirement to remove Perc-based dry cleaning machines from service when the machines reach 15 years of age; and 3) extension of the date at which primary, converted, and “add-on” secondary control Perc-based dry cleaning machines must be removed. The proposals differ from ARB staff’s May 25, 2006 proposal mainly in terms of the lead time provided for compliance and timeframe during which ARB would adopt the requested changes. The amendments also provide additional time to phase-out primary, converted, and “add-on” secondary control machines.

In the Petition, you stated three reasons why the Board should consider amending the Dry Cleaning ATCM. The reasons and ARB’s responses to them are addressed in the following discussion.

## **The Board’s Rationale for Banning Perc Dry Cleaning**

The first reason cited in the Petition is the claim that the Board’s decision at the May 25, 2006 meeting to ban Perc dry cleaning is based on policy rather than protecting public health. The Petition states that:

The Ban Enacted on the Use of Perchloroethylene-Based Dry Cleaning Machines is Not Necessary to Adequately Protect Public Health – The fact that a ban on the use of perchloroethylene-based dry cleaning machines is not required

to adequately protect public health is proved by the April 7, 2006 CARB staff report; the staff's original proposed revisions to section 93109, which did not include a ban on perchloroethylene; and the testimony presented at the May 25, 2006 hearing on the staff proposal. It is clear that the Board's decision to ban perchloroethylene was not based on any specific finding related to public health; rather, the Board simply made a policy decision that it preferred a ban.

The California Toxic Air Contaminant Identification and Control Program established under California law by Assembly Bill 1807 (Chapter 1047, Statutes of 1983) and set forth in HSC sections 39650 – 39675, requires the ARB to identify and control air toxics in California. As a result, in 1991, the Board identified Perc as a toxic air contaminant (TAC). In that process, the Board found that no threshold exposure level could be identified below which adverse health effects would not be expected. Once identification has occurred, HSC section 39665(a) requires ARB to prepare a report on the need to control Perc and adopt appropriate measures. On October 14, 1993, the Board adopted the Dry Cleaning ATCM codified in title 17 of the CCR, section 93109.

In 2003, staff began an evaluation of the effectiveness of the Dry Cleaning ATCM. The evaluation found that, as a result of the Dry Cleaning ATCM, Perc emissions from dry cleaning operations had been reduced by about 70 percent. However, the evaluation also showed that residual health risks associated with Perc emissions from dry cleaning operations remained present, the best available control technology (BACT) for Perc dry cleaning operations had improved, more effective ventilation systems existed, and alternative technologies were available and viable. As a result of this evaluation, staff proposed amendments to the Dry Cleaning ATCM based on BACT for the Board's consideration. Staff's initially proposed amendments were presented in the Staff Report: Initial Statement of Reasons, released on April 7, 2006 (hereafter ISOR1, Reference A) and considered at the Board's May 25, 2006 public hearing.

Section 39666(c) of the HSC states that the Board is to reduce emissions to the lowest level achievable through application of best available control technology or a more effective control method, unless the state board determines, based on an assessment of risk, that an alternative level of emission reduction is adequate or necessary to prevent an endangerment of public health. In accordance with the HSC and after considering staff's initial proposal, written comments, and public testimony, the Board voted unanimously not to proceed with the rulemaking and directed staff to return to the Board with a proposal to phase out Perc from dry cleaning operations in furtherance of the Board's mission to protect public health. Based on the viability of dry cleaning alternatives, the Board felt it prudent and necessary to eliminate the potential health risk due to Perc emissions from dry cleaning machines and related equipment.

Furthermore, as reflected in the transcripts of the May 25, 2006 public hearing (hereafter Transcript1, Reference B) and in the Board's January 25, 2007 resolution (hereafter Resolution 07-5, Reference F) approving the currently adopted Dry Cleaning ATCM, the main concern that the Board had with the original proposal was that it was not adequately health protective. The Board expressed particular concern about the continued Perc exposure to workers, customers and communities near Perc dry cleaning facilities. In addition, the Board viewed its deliberate decision in phasing out Perc as necessary to provide a long term, health protective, solution to an identified TAC which does not have a Board-specified threshold exposure level.

### **ARB's Policy on Control of Toxic Air Contaminants**

The second reason cited in the Petition is the claim that the ban on Perc is inconsistent with CARB's policies with respect to the control of other TACs. The Petition contrasted the ambient exposure of Perc to the other TACs and how the control of Perc is different from the control of diesel particulate matter (PM), benzene, and the use of ethanol, which leads to the production of acetaldehyde. In addition, the Petition also noted that the ambient mean concentration of Perc has dropped by about 90 percent from 1989 to 2006 and, in 2005, Perc accounts for about 0.3 percent of the total health risk estimated by CARB staff for the top ten TACs.

The Board is mandated to evaluate and determine the need to control substances which have been identified as toxic air contaminants according to HSC sections 39650 through 39675. The HSC directs the Board to control TACs on a case by case basis depending on the circumstance surrounding a TAC's usage. For TACs such as Perc, Diesel PM, benzene, and acetaldehyde, section 39666(c) of the HSC states that the Board is to reduce emissions to the lowest level achievable through application of best available control technology or a more effective control method, unless the State Board determines, based on an assessment of risk, that an alternative level of emission reduction is adequate or necessary to prevent an endangerment of public health. When assessing health risk, the Board not only considers the health risk posed by ambient exposure in general but also the potential for higher health risk due to exposure to near source concentrations of the TAC.

The Board began its evaluation of Perc in 1993. At that time, the total statewide Perc emissions from dry cleaning were about 742,000 gallons per year and the maximum individual risk near most dry cleaners ranged from about 50 to 500 chances in a million. Even though the total statewide Perc emissions from dry cleaning in 2003 has decreased to about 222,000 gallons per year and the ambient mean concentration of Perc has dropped significantly since the Dry Cleaning ATCM was initially adopted in 1994, the potential cancer risk at close distances to a Perc facility remained of concern to the Board. For example, a resident living in the same building as a Perc facility may be exposed to higher levels of Perc and may result in cancer risks of 50 to 100 in a million (Transcript1). Furthermore, as shown in the Staff Report: Initial Statement of

Reasons released on December 8, 2006 (hereafter ISOR2, Reference C) the estimated potential cancer risk of the latest Perc technology, a secondary control machine, at 20 meters is 40 chances per million or higher because about 10 percent of them are calculated to emit Perc vapors equivalent to 61 gallons or more per year.

In addition to risk considerations, the Board considers the types of control technology that are available and whether there are alternatives that can be used in place of the deployed control technologies to further control the TAC. In the case of Perc, the staff's evaluation concluded that control technologies are available in the form of improved ventilation systems to reduce but not eliminate near source exposures to Perc. Staff's evaluation for the Dry Cleaning ATCM rulemaking showed that about 30 percent of the dry cleaning facilities are already using an alternative dry cleaning technology; therefore, alternatives to Perc dry cleaning were readily available and viable (page ES-4, ISOR2).

After considering staff's evaluation results, written comments, public testimony, and staff's revised proposal on January 25, 2007, the Board, in accordance with HSC section 39666, approved the currently adopted regulation that phases out the use of Perc in dry cleaning operations. The process in adopting the amended Dry Cleaning ATCM parallels the processes used by the Board in considering controls for other TACs. Mirroring its action to ban Perc in dry cleaning, the Board has also banned the use of Perc, methylene chloride, and trichloroethylene in automotive brake cleaners, hexavalent chromium in cooling towers, and asbestos in surfacing applications.

However, in other cases, such as the control of diesel PM and other TACs, the Board may or may not phase out the use of the TAC based on its determination of how best to comply with the HSC in each instance. Considering the Board's actions with regard to diesel PM, in 1998, the Board determined diesel exhaust to be a TAC. In 2000, the Board proceeded with a plan to reduce diesel exposures to the lowest level achievable using the best available control method or a better method to accomplish the goal. Since then, diesel controls included lowering of emission standards, cleaner diesel fuels, allowing for alternative fuels such as biodiesel, and allowing for alternatives to diesel-fueled engines and vehicles.

### **Viable Alternatives to Perc Dry Cleaning**

The third reason cited in the Petition is the claim that there are no viable alternatives to Perc dry cleaning for all dry cleaning facilities. The Petition further states that the potential economic impact, labeling issues related to wet-cleaning, cost issue related to carbon dioxide, potential for further regulation related to hydrocarbon solvents, and toxicity issue related to GreenEarth and propylene glycol ether as barriers for switching to alternative dry cleaning processes.

The claimed lack of viable alternative fails for the reasons discussed herein. Alternatives to Perc dry cleaning are discussed in Executive Summary and Chapter III

of ISOR2. The viability of alternative dry cleaning technologies is evident by their market share. As stated in the ISOR2 and reflected in the transcript of the Board's January 25, 2007 public hearing (hereafter Transcript2, Reference D), about 30 percent of the dry cleaning in California is being done by alternative dry cleaning processes already. The most popular alternative uses the high flash-point hydrocarbon solvents, with about 20 percent of dry cleaning in California being processed using these solvents. The dry cleaning industry has used hydrocarbon solvents for a long time; in fact, long before Perc was introduced to the industry. The current generation of hydrocarbon solvents (i.e., the high flash point hydrocarbon solvents), introduced in the early 1990's, is safer compared to the older generation of hydrocarbon solvents such as Stoddard because of the new generation's higher flash point, which lowers its associated fire hazard, and its chemical composition, which lowers any potential adverse health impact.

Of all the alternatives available, the most environmentally friendly are water based cleaning systems and carbon dioxide cleaning systems. These alternatives are currently used by some in "mixed shops" and by others in "dedicated shops" where all of the dry cleaning for these facilities is being successfully processed by one of these technologies. Because these systems are non-toxic and non-smog forming, they qualify for grants under the programs authorized by Assembly Bill (AB) 998 (chapter 821, statutes 2003, HSC section 41999). The \$10,000 grants available under the AB 998 program can potentially help the marginal operators who are unable to finance the cost of a new dry cleaning system. Most of the alternatives considered are discussed in detail in Chapter III of ISOR2 and a summary of the cleaning performance of the evaluated dry cleaning solvents is shown in Table III-1 (page III-5) of ISOR2. This table is duplicated here as Table II-1.

Alternatives to this regulatory action were considered in the ISOR2, in accordance with Government Code section 11346.2. For the reasons set forth in the ISOR2, in the staff's presentation at the January 25, 2007 public hearing, and in the Final Statement of Reasons (hereafter FSOR, Reference E), the Board has determined that no reasonable alternative considered by the agency, or that has otherwise been identified and brought to the attention of the Board, would be more effective in carrying out the purpose for which the regulatory action was proposed or would be as effective and less burdensome to affected private persons than the action taken by the Board (FSOR, page 4, D).

**Table II-1. Summary of Cleaning Performance of Dry Cleaning Solvents**

<b>Solvent</b>	<b>Cleaning Performance</b>
Perc	Aggressive, oil-based stains, most water-based stains, silks, wools, rayons. Not good for delicates.
Stoddard	Less aggressive than Perc for oil-based stains. Can handle delicate garments.
PureDry	Less aggressive than Perc for oil-based stains. Can handle delicate garments.
Shell 140	Less aggressive than Perc for oil-based stains. Can handle delicate garments.
EcoSolv	Less aggressive than Perc for oil-based stains. Can handle delicate garments.
DF-2000	Less aggressive than Perc for oil-based stains. Can handle delicate garments
Green Jet (DWX-44 detergent)	Less aggressive than Perc. More effective in cleaning sugar, salt, perspiration stains. Good for delicates. Not good for heavily soiled garments.
Rynex 3	Aggressive, cleans water-soluble and oil-based stains.
GreenEarth	Less aggressive than Perc for oil-based stains. Good for water-based stains, delicates.
CO <sub>2</sub>	Good for all stains and most fabrics. Very effective in removing oils, greases, sweats.
Wet cleaning	Aggressive, good for both oil and water-based stains. Can handle delicate garments. Requires tensioning equipment and training for successful operation.

## **Conclusion**

Based on the foregoing analysis, we find that the Petition has not demonstrated that the Dry Cleaning ATCM to be inconsistent with the overall statutory charge to protect public health through the control of TACs, nor has the Petition demonstrated further amendments to the Dry Cleaning ATCM to be reasonably necessary to effectuate the purposes of the HSC.

The record upon which this denial is based includes the Petition and all of the material incorporated by reference in the Petition – Exhibits A through F. The record also includes this letter and all attachments hereto.

Mr. Lawrence Lim, Chairman  
March 7, 2008  
Page 8

In accordance with Government Code section 11340.7(d), a copy of this letter is being transmitted to the Office of Administrative Law for publication in the California Regulatory Notice Register. The agency contact person on this matter is Robert Krieger, Manager, Emissions Evaluation Section at (916) 323-1202. Interested parties may obtain a copy of the Petition from Lori Andreoni, ARB Office of Legal Affairs, 1001 I Street, P.O. Box 2815, Sacramento, CA 95812, (916) 322-5594.

Sincerely,

/s/

James N. Goldstene  
Executive Officer

Attachment

cc: Robert Krieger, Manager  
Emissions Evaluation Section  
Stationary Source Division

Lori Andreoni, Manager  
Board Administration  
and Regulations Coordination Unit  
Office of Legal Affairs

## LIST OF REFERENCES\*

Response to Ko-Am Cleaners Association of California's Petition for Amendments of Section 93109 of Title 17, California Code of Regulations, March 2008

- Reference A: Staff Report: Initial Statement of Reasons for the Propose Amendments to the Control Measure for Perchloroethylene Dry Cleaning Operations, April 7, 2006  
<http://www.arb.ca.gov/regact/perc06/isor.pdf>
- Reference B: Transcript of May 25, 2006 Public Hearing to Consider Proposed Amendments to the Control Measure for Perchloroethylene Dry Cleaning Operations  
<http://www.arb.ca.gov/board/mt/2006/mt052506.txt>
- Reference C: Staff Report: Initial Statement of Reasons for the Propose Amendments to the Control Measure for Perchloroethylene Dry Cleaning Operations, December 8, 2006  
<http://www.arb.ca.gov/regact/2007/perc07/isor.pdf>
- Reference D: Transcript of January 25, 2007 Public Hearing to Consider Adoption of the Amendments to the Control Measure for Perchloroethylene Dry Cleaning Operations and Adoption of Requirements for Manufacturers and Distributors of Perchloroethylene  
<http://www.arb.ca.gov/board/mt/2007/mt012507.txt>
- Reference E: Final Statement of Reasons; Public Hearing to Consider Adoption of the Amendments to the Control Measure for Perchloroethylene Dry Cleaning Operations and Adoption of Requirements for Manufacturers and Distributors of Perchloroethylene  
<http://www.arb.ca.gov/regact/2007/perc07/fsor.pdf>
- Reference F: State of California Air Resources Board Resolution 07-5, January 25, 2007  
<http://www.arb.ca.gov/regact/2007/perc07/res075.pdf>

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\* All references are available on the websites; therefore, hardcopies of the references are not included.

**Reference F**

**Letter from Ms. Kate Dargan, State Fire Marshal to Mr. David Suber,  
President of California Cleaners Association,  
Dated March 7, 2008**

**DEPARTMENT OF FORESTRY AND FIRE PROTECTION****Office of the State Fire Marshal**

P.O. Box 944246  
SACRAMENTO, CA 94244-2460  
(916) 445-8200  
Website: [www.fire.ca.gov](http://www.fire.ca.gov)



December 23, 2008

Mr. David Suber  
President  
California Cleaners Association  
2520 Venture Oaks Way, Suite 150  
Sacramento, California 95833

Dear Mr. Suber:

Governor Schwarzenegger has asked the California Department of Forestry and Fire Protection (CAL FIRE) to respond to your letter regarding the phase-out of perchloroethylene cleaning solvents used by drycleaners pursuant to recent regulations adopted by the California Air Resources Board and the affect of California Fire Code regulations adopted by the State Fire Marshal. We understand the importance of maintaining small businesses and the jobs created by the drycleaners industry; and do not wish to add, if at all possible, any further financial burden when providing safe and cost-effective alternatives and future regulations.

The CAL FIRE - Office of the State Fire Marshal (OSFM) has been working with the drycleaner industry and local fire authorities to address concerns regarding the California Code of Regulations, Title 24, Part 9 California Fire Code (CFC) that may affect small drycleaner establishments by requiring automatic fire sprinkler systems. Provisions contained in NFPA 32 (not currently part of the CFC) provide other fire protection features that may exclude the requirement for an automatic sprinkler system. These provisions are being reviewed by the OSFM for possible adoption in the next California Fire Code tentatively proposed for 2011. During the interim, the OSFM is in an expedited discussion to consider alternate methods of protection utilizing the provisions of NFPA 32.

If you have any additional questions, or would like to discuss further, please contact Kevin Reinertson, Supervising Deputy State Fire Marshal, Regulations Division at (916) 327-4998.

Sincerely,

KATE DARGAN  
State Fire Marshal

cc: Mike Chrisman, Secretary, Resources Agency  
Linda S. Adams, Secretary, California Environmental Protection Agency  
James N. Goldstene, Executive Officer, Air Resources Board

CONSERVATION IS WISE—KEEP CALIFORNIA GREEN AND GOLDEN

PLEASE REMEMBER TO CONSERVE ENERGY. FOR TIPS AND INFORMATION, VISIT "FLEX YOUR POWER" AT [WWW.CA.GOV](http://WWW.CA.GOV).