State of California
AIR RESOURCES BOARD

Staff Report: Initial Statement of Reasons for the Proposed Airborne Toxic Control Measure for Emissions of Chlorinated Toxic Air Contaminants from Automotive Maintenance and Repair Activities

Volume I:
Executive Summary

I. INTRODUCTION

This executive summary presents the Air Resources Board (ARB or Board) staff's Proposed Airborne Toxic Control Measure (ATCM) for Emissions of Chlorinated Toxic Air Contaminants from Automotive Maintenance and Repair Activities. The proposed control measure addresses emissions of three toxic air contaminants (TACs): perchloroethylene (Perc), methylene chloride (MeCl), and trichloroethylene (TCE). These TACs are found in automotive consumer products commonly used in automotive maintenance and repair (AMR) activities. Automotive consumer products are aerosol and liquid products that remove grease, grime, and dirt from a variety of automobile parts. They are generally available as pre-packaged aerosol sprays or bulk liquid products that are easily added to refillable pump sprayers. Examples of applications where these products are used include engine degreasing, the servicing of carburetors and throttle bodies, and brake service and repair operations. The majority of these products are used in commercial AMR facilities with much smaller usage from do-it-yourself enthusiasts.

This summary is based upon the Technical Support Document (TSD) found in Volume II of this Initial Statement of Reasons (ISOR). The TSD provides a more detailed presentation of the technical basis and supporting analyses for the proposed control measure.

II. HISTORY AND BACKGROUND

1. Why did we perform this assessment?

At its November 21, 1996, hearing, the Board adopted amendments to exempt Perc from the volatile organic compound (VOC) definition in California's Regulation for Reducing VOC Emissions from Consumer Products (Consumer Products Regulation; section 94521, title 17, California Code of Regulations). This action allowed manufacturers to reformulate consumer products with Perc to meet the VOC limits of the Consumer Products Regulation.

During the hearing, the Board expressed concerns about the potential for an increase in the use of Perc in consumer products, and the possible health impacts that might result. Therefore, the Board directed the ARB staff to conduct an assessment under the State's TAC control program of the need to control Perc use in these products. Staff initially focused on the use of Perc in brake cleaning products because this product category represented the greatest use of Perc among the various products. The preliminary results of this initial assessment were discussed in the Perchloroethylene Needs Assessment for Automotive Consumer Products: Status Report released in June 1997 (June 1997 Status Report) and presented to the Board at its June 26, 1997, meeting. An additional update on the assessment, incorporating additional data and analyses, was provided to the Board in a May 1998 Memorandum. These documents indicated that, based on the available information, an ATCM should be developed to reduce Perc emissions from brake cleaning products.

The assessment was later expanded to address the use of MeCl and TCE in brake cleaning products, and the use of all three compounds in carburetor or fuel-injection air intake cleaners (carburetor cleaners), engine degreasers, and general purpose degreasers. This expansion was based on information and observations during site visits indicating that: (1) brake cleaning products could potentially be reformulated with MeCl or TCE, and (2) carburetor cleaners, engine degreasers, and general purpose degreasers could be used interchangeably with or substituted for brake cleaning products.

2. What authority does the Air Resources Board have to control emissions of TACs?

This control measure is developed under the authority of the California Toxic Air Contaminant Identification and Control Program (Air Toxics Program), established under California law by Assembly Bill 1807 and set forth in Health and Safety Code (HSC) sections 39650 thru 39675. The Board identified MeCl, TCE, and Perc as TACs and potential human carcinogens at its July 1989, October 1990, and October 1991 Board hearings, respectively. In each case, the Board determined there was not sufficient available scientific evidence to identify a threshold level of exposure below which no adverse health effects are likely to occur.

Following the identification of a substance as a TAC, HSC section 39665 requires the ARB, with participation of the air pollution control and air quality management districts (districts), and in consultation with affected sources and interested parties, to prepare a report on the need and appropriate degree of regulation for that substance. A needs assessment for Perc was conducted from 1991 to 1993 as part of the ARB's development of the Airborne Toxic Control Measure (ATCM) for Emissions of Perchloroethylene from Dry Cleaning Operations (Dry Cleaning ATCM), August 1993 (title 17, CCR, sections 93109 and 93110). During that assessment, the ARB staff determined that dry cleaning operations and solvent degreasing operations accounted for about 80 percent of the Perc use in California. Therefore, staff focused their attention on dry cleaning and degreasing uses of Perc first and is now addressing other uses of Perc. Additionally, Volume II of this ISOR serves as the report on the need and appropriate degree of regulation for MeCl and TCE. Once the ARB has evaluated the need and appropriate degree of regulation for a TAC, HSC section 39666 requires the ARB to adopt ATCMs to reduce emissions of that TAC. When adopting ATCMs, HSC section 39666 requires that any control measure for a TAC without a Board-specified threshold level be designed to reduce emissions to the lowest level achievable through the application of best available control technology (BACT) or a more effective control method.

3. Is the proposed ATCM a Consumer Products Regulation?

It is important to note that the proposed ATCM is not a consumer products regulation. Consumer products regulations are developed under authority granted to the ARB by the California Clean Air Act (1998), and specifically HSC section 41712. HSC section 41712 requires the ARB to adopt regulations to achieve the maximum feasible reduction in reactive organic compounds (ROCs) emitted by consumer products (note: ROC is equivalent to VOC).

As discussed previously, we are proposing this ATCM under the authority granted to the ARB by Assembly Bill 1807 (the Toxic Air Contaminant Identification and Control Program) as codified in HSC sections 39650 through 39675.

However, since the automotive consumer products industry has previously been subject to regulations developed under ARB's Consumer Products Program, we have used the phrase "consumer products" and definitions similar to those in ARB's consumer products regulations in an attempt to make our ISOR more familiar and comprehensible to consumer products manufacturers, AMR facility operators, and others who may use these products.

III. PUBLIC OUTREACH

For this assessment, we developed an extensive outreach program that involved automotive consumer products manufacturers and their associations, AMR facility operators and their associations, national, state and local regulatory agencies, environmental/pollution prevention and public health advocates, and other interested parties. These entities participated in the development and review of the necessary surveys and draft reports, conference calls, working group meetings, and workshops. Outreach efforts also provided participants a forum in which to address their concerns. ARB outreach activities included:

- the establishment of the Perc Needs Assessment working group;
- eight meetings, four workshops, and seven conference calls;
- more than 500 telephone conversations with the working group and facility operators;
- mailing or faxing working group agendas, minutes, draft surveys, survey analyses, draft and final status reports to over 80 people;
- mailing workshop notices to over 6,000 people;
- mailing the Brake Cleaner and Perc-Containing Automotive Products Survey to 37 manufacturers and 23 other interested parties (including associations);
- mailing the Automotive Repair Facility Survey to 25,000 facilities;
- visiting a total of 158 AMR facilities to gather information on: (1) the amount of product used for brake service and repair, building dimensions, and receptor locations; (2) aqueous brake cleaning units; and (3) flammability issues;
- meeting with the Sacramento Valley Fire Marshals Association to discuss flammability issues;
- reviewing information provided to us by the sanitation districts on increasing concentrations of Perc in the influent to publicly owned treatment works (POTWs). Additionally, a representative of the County Sanitation Districts of Los Angeles County presented this information during the May 1999 and January 2000 workshops; and,
- participating with the Institute for Research and Technical Assistance (IRTA) on visits to Los Angeles area AMR facilities conducting brake service and repair operations. These facilities were participants in a study of alternative brake cleaning products and the visits

provided technical information on the availability, cleaning effectiveness, and relative cost of non-aerosol brake cleaning products.

IV. POTENTIAL EMISSIONS AND HEALTH IMPACTS

1. How much Perc, MeCl, and TCE is emitted from AMR Activities?

Automotive consumer products are used in a variety of applications and industries throughout California. They are most commonly used in AMR activities at approximately 25,000 AMR facilities in California (AMR facilities include service stations, fleets, general automotive repair shops, dedicated brake repair shops, and new and used car dealerships). Although brake repair and engine degreasing are common do-it-yourself activities, the vast majority of Californians look to AMR facilities for their maintenance and repair needs. In these facilities, automotive consumer products are used to remove grease, grime, and dirt from a variety of automobile parts. Examples of applications include engine degreasing, the servicing of carburetors and throttle bodies, and brake service and repair operations. These commercial facilities use both aerosol and liquid products (chlorinated and non-chlorinated) contained in a variety of delivery mechanisms.

Emissions of Perc, MeCl, and TCE from these products were estimated based on information collected from surveys and site visits to AMR facilities. The surveys conducted included the Brake Cleaner and Perc-Containing Automotive Products (Manufacturer) Survey, the Automotive Service Facility Questionnaire (Facility Survey), and the 1997 Commercial and Consumer Products (Consumer Products) Survey. Additional information was collected from 158 site visits to AMR facilities. Based on the survey data, over 8 million brake service and repair operations (brake jobs) are performed in California each year. Table 1 summarizes the estimated statewide emissions of Perc, MeCl, and TCE from the four automotive consumer product categories.

Table 1. Statewide Emission Estimates from Automotive Consumer Products[1]

Compound	Emissions [tons/day]
Perc	4.2
MeCl	0.7
TCE	0.3
Total	5.2

1. Source: 1997 Consumer and Commercial Products Survey.

2. What are the potential health effects associated with exposure to Perc, MeCl, and TCE?

Exposure to Perc, MeCl, or TCE may result in both cancer and non-cancer (acute and chronic) health effects to off-site receptors and on-site workers. The primary route of human exposure for these compounds is inhalation. Non-cancer effects from exposure to Perc include headache, dizziness, rapid heartbeat, and liver and kidney damage. Non-cancer effects from exposure to MeCl include cardiac arrhythmia and loss of consciousness. Non-cancer effects from exposure to TCE include headache, nausea, tremors, and respiratory irritation. These health effects may also result from exposures that occur within the workplace for all three compounds. A more detailed discussion of health effects is presented in Chapter VI of the TSD.

3. How were the potential health impacts from AMR facilities assessed?

Air dispersion models and pollutant-specific health effects values were used to estimate the potential health impacts from AMR facilities. Information required for the air dispersion model includes emission estimates, physical descriptions of the source, and emission release parameters. Combining estimated concentrations from the air dispersion model with the pollutant-specific health values provides an estimate of the off-site potential cancer and non-cancer health impacts from the emissions of a TAC. The risk assessment methodologies used in assessing potential health impacts were consistent with the California Air Pollution Control Officers Association (CAPCOA) risk assessment guidelines. Additionally, the pollutant-specific health effects values have been approved by the ARB and the Office of Environmental Health Hazard Assessment (OEHHA) and the air dispersion models have been approved by the United States Environmental Protection Agency (U.S. EPA). Furthermore, the air dispersion models have been recommended by ARB for use in risk assessments. Health effects values are summarized in Chapter VI of the TSD.

4. What are the potential health impacts to individuals from exposure to AMR activities using products containing Perc, MeCl, or TCE?

To assess potential health impacts, ARB staff conducted individual health risk assessments for 54 specific AMR facilities and three generic facilities. These specific and generic facilities represent a broad range of AMR facilities and allow for the reasonable approximation of potential health impacts statewide. The risk assessments were based on Perc-containing brake cleaners using source characteristic information collected during the site visits. Forty-one of the specific facilities were modeled using a screening air dispersion model and the remaining 13 specific facilities were evaluated using a refined air dispersion model. Potential cancer risk in the screening assessments were as high as 50 chances in a million at the near-source location (a near-source location is defined as a minimum modeled distance of 20 meters from the center of the facility) and as high as 60 chances in a million with the refined model. Potential non-cancer acute and chronic hazard indices were both less than one. Generally, hazard indices less than one are not considered to be a concern to public health.

The generic facility analysis was developed to estimate potential health impacts at a variety of facilities. Potential cancer risk at the generic facilities was as high as 110 chances per million at the near-source location. The modeling results and hazard index estimates show that it is unlikely for significant acute or chronic off-site non-cancer health effects to result from the emissions of Perc-based brake cleaners. Both the chronic and acute hazard indices are less than one at the minimum modeled distance. As previously mentioned, hazard indices less than one are not considered to be a concern to public health.

Additional modeling analyses performed for brake cleaners formulated to contain MeCl and/or TCE, and for carburetor cleaners, engine degreasers, and general purpose degreasers formulated to contain Perc, MeCl, or TCE indicates that these products would also pose potential adverse health impacts. A more detailed discussion of health impacts is presented in Chapter VI of the TSD.

V. SUMMARY OF THE PROPOSED AIRBORNE TOXIC CONTROL MEASURE

1. What would the proposed ATCM require?

The proposed ATCM requires that automotive consumer products (aerosol and liquid brake cleaners, carburetor cleaners, engine degreasers, and general purpose degreasers) manufactured after December 31, 2002 for sale or use in California not to contain Perc, MeCl, or TCE. It would also require that automotive consumer products manufactured on or before December 31, 2002 not be sold in California after June 30, 2004 if they contain Perc, MeCl, or TCE. The proposed ATCM accounts for the detection limits of the prescribed test method by providing that a product is considered to contain Perc, MeCl, or TCE if it has one percent or more (by weight) of any of the three compounds Perc, MeCl, or TCE (either alone or in combination). This provision also addresses the issue of inadvertent contamination that may occur when manufacturers convert a production line from one product formulation to another. Table 2 summarizes the requirements of the proposed ATCM.

Table 2. Requirements of the Proposed ATCM

Applicability	Exemptions	Requirements
Applies to any person who sells, supplies, offers for sale, or manufactures automotive consumer products (aerosol and liquid brake cleaners, carburetor cleaners, engine degreasers, and general purpose degreasers) for use in California. Applies to the owner or operator of any AMR facility that uses automotive consumer products in California.	Does not apply to any automotive consumer product manufactured in California for shipment and use outside of California. Does not apply to any manufacturer or distributor who sells, supplies, or offers for sale an automotive consumer product intended for shipment and use outside of California.	Effective December 31, 2002: Automotive consumer products manufactured after this date for sale or use in California cannot contain Perc, MeCl, or TCE. Effective June 30, 2004: After this date, automotive consumer products manufactured on or before December 31, 2002 that contain Perc, MeCl, or TCE can not be sold or distributed for use in California. Effective June 30, 2005: After this date, AMR facilities can not use automotive consumer products that contain Perc, MeCl, or TCE.

2. What is the basis for the proposed ATCM?

The proposed ATCM is based on staff's evaluation of best available control technology (BACT), in consideration of alternative products and processes. In evaluating BACT, information from surveys, site visits, third-party studies, and brake parts manufacturers was analyzed to determine that:

- brake cleaners, carburetor cleaners, engine degreasers, and general purpose degreasers are often used interchangeably;
- Perc, MeCl, and TCE are suitable and readily available replacements for each other;
- the removal of Perc alone could result in significantly increased emissions of MeCl and TCE with an associated increase in exposure to these TACs;
- non-chlorinated products are currently used at nearly two-thirds of AMR facilities;
- alternative products that use non-chlorinated formulations and alternative processes such as aqueous-based portable brake cleaning units and parts washers are currently in use (62 to 90 percent of automotive consumer products are non-chlorinated and 60 percent of AMR facilities use aqueous-based processes);
- most manufacturers market both chlorinated and non-chlorinated aerosol and bulk liquid products and claim that both are suitable and effective;

- alternative products and processes are effective in cleaning and degreasing based on claims that manufacturers make on the product labels of non-chlorinated products and on their websites;
- a recently conducted study for the U.S. EPA demonstrated that aqueous-based portable brake cleaning units are effective and less costly than chlorinated products;
- based on the Facility Survey, brake jobs performed with VOCs used less product than brake jobs performed with Perc, MeCl, or TCE; and,
- discussions with a variety of facility operators and mechanics indicate that alternative products, including non-chlorinated aerosols and bulk liquids, are suitable and effective cleaning products.

As a result, staff considers the proposed ATCM to be technically feasible, providing facility operators and other users with safe, effective, and less-hazardous products.

3. What alternatives to the proposed ATCM did staff consider?

HSC section 39665 requires the ARB to consider and evaluate alternatives to the proposed ATCM. Staff identified three alternatives to the proposed control measure: workplace practices, a chlorinated compound limit, and a chlorinated compound phase-out. Each of the three alternatives were evaluated addressing applicability, effectiveness, enforceability, and cost/resource requirements. We determined that these alternatives would not be as effective at reducing emissions of and exposure to Perc, MeCl, and TCE from AMR activities as the proposed control measure. Furthermore, the three alternatives did not meet the HSC section 39666 criterion to reduce emissions to the lowest level achievable through the application of BACT in consideration of cost, risk, and environmental impacts.

VI. POTENTIAL HEALTH IMPACTS OF THE PROPOSED AIRBORNE TOXIC CONTROL MEASURE

1. How would the proposed ATCM reduce the risk to public health?

The proposed ATCM removes Perc, MeCl, and TCE from automotive consumer products. As a result, the emission and health impact (i.e., potential cancer risk) reduction benefits are nearly 100 percent. Potential cancer risk from AMR facilities that use automotive consumer products that contain Perc, MeCl, or TCE will be reduced to essentially zero.

2. What are the potential adverse health impacts from an increased use of VOCs and other TACs?

With the removal of Perc, MeCl, and TCE, we expect that many users will look to VOC-based automotive consumer products, thereby increasing the use of VOCs. Appendix G of the TSD contains a listing of the compounds used these products based on the Facility Survey.

No adverse health impacts from the compounds on this list (other than Perc, MeCl, and TCE) are expected. The apparent use of benzene (which is a TAC as well as a VOC) was a concern for staff; however, upon further investigation, staff learned that it was only used by one manufacturer (in one product) at concentrations less than two percent. Staff intends to monitor the usage of other TACs and will propose amendments to the ATCM if appropriate. Additionally, manufacturers will be advised to not use identified TACs in their product formulations.

3. How would the proposed ATCM affect workplace exposure to Perc, MeCl, and TCE?

The proposed ATCM will remove Perc, MeCl, and TCE from automotive consumer products. As a result, worker exposure from products that contain these compounds will be eliminated.

VII. ECONOMIC IMPACTS OF THE PROPOSED AIRBORNE TOXIC CONTROL MEASURE

1. What are the expected economic impacts of the proposed ATCM on businesses?

No significant economic impacts are expected from the proposed ATCM. Automotive consumer products are manufactured or marketed by 60 companies nationwide, with ten based in California. The California-based companies account for nine percent of chlorinated TAC and VOC products manufactured or marketed in the State. Most manufacturers already have at least one non-chlorinated VOC product on the market that meets the requirements of the proposed ATCM, and, therefore, are not expected to incur additional costs. Those companies that do not currently have non-chlorinated VOC products and choose to formulate one are expected to be able to absorb the cost of reformulation with no adverse impacts on their profitability.

The analysis has shown that the raw materials costs for chlorinated TAC products are greater than the raw materials costs for VOC products. As a result, it should be less costly to manufacture non-chlorinated VOC products as opposed to products that contain Perc, MeCl, or TCE. However, there are no noticeable differences between the market prices for chlorinated TAC and VOC products. Therefore, no economic impact on the consumer is expected.

The proposed ATCM will primarily impact manufacturers and marketers (companies which outsource the manufacturing of their products). As a result, we do not expect a noticeable change in employment; business creation, elimination or expansion; and business competitiveness in California.

2. Will the proposed amendments be cost-effective?

Based on our analyses, we estimate that the cost-effectiveness of the proposed ATCM ranges from essentially no cost to a high of about $0.23 per pound of Perc, MeCl, and TCE

reduced. The estimated average cost-effectiveness weighted by emissions reductions across all categories is about $0.03 per pound of Perc, MeCl, and TCE reduced. To evaluate the relative impact and effectiveness of the proposed ATCM based on health impact reduction benefits, we calculated the cost per cancer case avoided. The estimated average cost-effectiveness per cancer case avoided is $26,000 with a range of approximately $1,400 to $111,000. The ranges for pound of TAC reduced and cancer cases avoided are significantly less than previously approved ATCMs. In previously approved ATCMs, these amounts have generally fallen within an overall range of $0.64 to $1.77 (adjusted to 1999 dollars) per pound of Perc reduced (1993 Perchloroethylene Dry Cleaning Operations ATCM, title 17, CCR, section 93109) and $6,600 to $18.6 million (adjusted to 1999 dollars) per cancer case avoided (1992 Non-Ferrous Metal Melting ATCM, title 17, CCR, section 93107).

3. Will consumers have to pay more for consumer products subject to the proposed ATCM?

Consumers may have to pay more for some products subject to the proposed ATCM, depending on the extent to which manufacturers are able to pass along their costs to consumers. If all the costs of the proposed ATCM are passed along to consumers, the change in cost per unit would range from no cost to a cost increase of $0.09 per unit, depending on the product category. The average cost per unit, is estimated to be about $0.02. For comparison purposes, this is the same unit sales-weighted average cost increase that was estimated for the October 1999 amendments to the Consumer Products Regulation.

VIII. ENVIRONMENTAL IMPACTS OF THE PROPOSED AIRBORNE TOXIC CONTROL MEASURE

1. What are the expected environmental benefits of the proposed ATCM?

The main environmental benefit of the proposed ATCM is the reduction of 5.2 tons per day (tpd) of Perc, MeCl, and TCE emissions in California. Approximately 2.6 tpd of this reduction is expected to occur in the South Coast Air Basin. The proposed ATCM will also affect (positively) wastewater treatment, hazardous waste disposal as well as reduce the potential for the formation of phosgene, thereby extending a greater level of worker and public health protection from these areas.

Currently, many wastewater treatment plants do not have the equipment necessary to process industrial wastes such as chlorinated solvents. These solvents have been detected at elevated levels at these same plants and have been linked to increased influent concentrations of Perc at four wastewater treatment plants. The influent concentrations of Perc have been high enough to potentially cause violations of the plants' discharge limit of 5 micrograms per liter (µg/L).

Chlorinated automotive consumer products are generally classified as hazardous waste because they contain substances which are listed as toxic substances. Spent baths (as well as other waste disposal containers) contaminated with chlorinated compounds are typically more costly to have removed from the facility and typically do not meet discharge standards set by publicly-owned treatment works (POTWs) and sanitation districts.

The removal of Perc, MeCl, and TCE from these products should lead to a reduction in the amount of chlorinated solvents reaching the storm drains and the wastewater treatment plants. It will also minimize the possibility of chlorinated solvents contaminating aqueous baths, waste oil containers, and hazardous waste disposal drums thereby significantly reducing hazardous waste contamination and disposal costs. Additionally, the proposed ATCM is expected to have a negligible impact on global warming, will reduce workplace exposure from emissions of Perc, MeCl, and TCE, and will minimize the potential for phosgene formation (more information on these benefits can be found in Chapter X of the TSD).

2. Are there any potential negative environmental impacts?

The October 1999 amendments to the Consumer Products Regulation are expected to obtain a reduction of approximately 3.3 tpd in VOC emissions from automotive consumer products. However, the removal of Perc, MeCl, and TCE as formulation options in the proposed ATCM will adversely impact the reduction in VOC emissions that otherwise would have been realized. The removal of Perc, MeCl, and TCE will reduce emissions of these TACs by approximately 5.2 tpd. If we assume a worse case scenario where all current users of chlorinated products switch to non-chlorinated, VOC-based products with Perc, MeCl, and TCE replaced with VOC compounds (irrespective of any current VOC-based formulation limits), then the theoretical increase in statewide VOC emissions would be approximately 5.2 tpd. However, beginning January 1, 2002, the VOC-content of automotive consumer products is subject to VOC-content limits as specified in the October 1999 amendments to the Consumer Products Regulation. As a result of these technically-feasible limits, post-ATCM VOC emissions would increase by no more than 2.3 tpd statewide. However, ARB staff expects that some users of chlorinated automotive consumer products will choose to consider other non-chlorinated alternatives (such as aqueous-based portable brake cleaning units and parts washers) and not switch exclusively to non-chlorinated VOC products. If this occurs, the increase in VOC emissions related to the proposed ATCM would be less than 2.3 tpd statewide. When total VOC emission reductions from both the October 1999 amendments to the Consumer Products Regulation and the proposed ATCM are considered, statewide VOC emissions from the four automotive consumer product categories will be reduced by at least one ton per day.

3. What are the impacts on the State Implementation Plan (SIP) for Ozone?

The proposed ATCM decreases the potential VOC reductions that will be obtained by the October 1999 amendments to the Consumer Products Regulation while achieving substantial reductions in emissions of chlorinated TACs. Perc was considered a VOC in the 1994 ozone SIP

inventory; therefore, substituting non-chlorinated VOC-based products to replace Perc will have no impact on the 1994 SIP (which covers Ventura County, the Sacramento Metropolitan area, the San Joaquin Valley, San Diego County, and the Southeast Desert). In the context of the 1994 SIP, substituting VOC-based products for MeCl will increase VOC emissions by approximately 0.1 tpd in all the 1994 SIP areas combined.

The South Coast Air Quality Management District (SCAQMD) revised their federal ozone plan in 1999, and the U.S. EPA has proposed to approve this plan. In the 1999 revision, Perc is not considered a VOC. In the context of the 1999 revision, if VOC-based products are substituted for all the Perc and MeCl currently used in chlorinated products, we expect an increase of approximately one ton per day of VOC in the South Coast Air Basin. The ARB and the SCAQMD will address this shortfall in the next comprehensive revision of the South Coast ozone SIP.

4. Are there any concerns about the potential flammability of automotive consumer products?

Industry groups representing product manufacturers raised the issue that AMR facilities need to continue their usage of chlorinated aerosols, especially in areas where use may occur near flame, heat, or other ignition sources. However, a search of statewide and national databases as well as inquiries to fire departments and associations across the State were unable to locate any reports of fires, injuries, or other incidents related to the use of non-chlorinated products in AMR facilities. Additionally, the California State Fire Marshal's office indicated that the combustion of gasoline, such as from a leaking fuel line, poses a significantly greater flammability concern than the use of aerosols.

During the site visits, ARB staff observed brake service operations at one facility using a flammable, non-chlorinated aerosol product occurring in one service bay and welding operations occurring in another service bay. ARB staff also observed chlorinated products that were listed as flammable on the product label, which indicates that chlorinated products can also be flammable.

An additional 16 site visits were conducted to specifically investigate flammability issues. Only one facility reported an incident (non-injury) associated with the use of a flammable product. This facility, however, attributed the incident to a vehicle malfunction and continues to use flammable products almost exclusively. Additionally, none of the facilities visited indicated that flammability concerns were a factor when making decisions on which products to buy (cost was the major factor). Instead, discussions with facility operators indicated that most facilities consider all aerosol products flammable and use common safety precautions when using these products. Therefore, we believe flammability is sufficiently addressed by the use of good operating practices on the part of facility owners, mechanics, and technicians. This belief is

supported by the fact that most facilities already use a host of flammable products and that non-flammable alternatives such as aqueous-based portable brake cleaning units and water-based aerosol products are readily available and in use.

IX. RECOMMENDATION

We recommend that the Board adopt the proposed regulation contained in Appendix A of the TSD. The proposed regulation would remove Perc, MeCl, and TCE from automotive consumer products used in AMR activities. In recognition of the requirement to adopt best available control technology when suitable alternatives are available, the proposed regulation would prohibit manufacturers from selling brake cleaners, carburetor cleaners, engine degreasers, and general purpose degreasers that contained Perc, MeCl, or TCE in California. Since non-chlorinated VOC-based products in these four categories predominate, alternative products are considered to be technically feasible and available. Additionally, effective non-aerosol products are also readily available. The proposed regulation would also prohibit facility owners or operators from using products containing Perc, MeCl, and TCE for AMR activities. Benefits from the proposed regulation include nearly 100 percent reductions in emissions, exposure, and risk from Perc, MeCl, and TCE-containing brake cleaners, carburetor cleaners, engine degreasers, and general purpose degreasers. Additional benefits include reduced waste water and hazardous waste contamination, and reduced workplace exposure.