

-- REVISED --

**PROPOSED
2003 STATE AND FEDERAL STRATEGY FOR
THE CALIFORNIA STATE IMPLEMENTATION PLAN**

**SECTION III
CONSUMER PRODUCTS, VAPOR RECOVERY,
AND PESTICIDES**

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PROPOSED 2003 STATE AND FEDERAL STRATEGY FOR CALIFORNIA SIP
SECTION III - CONSUMER PRODUCTS, VAPOR RECOVERY, AND PESTICIDES

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CHAPTER A
Consumer Products

CHAPTER A. CONSUMER PRODUCTS

1. Category Description

As part of the 1988 California Clean Air Act, the California State Legislature gave the Air Resources Board (ARB) the authority and responsibility to achieve the maximum technologically and commercially feasible reactive organic gas (ROG) emission reductions from consumer products.

A consumer product is defined as a chemically formulated product used by household and institutional consumers. Consumer products include, but are not limited to: detergents, cleaning compounds, polishes, floor finishes, cosmetics, personal care products such as antiperspirants and hairsprays, home, lawn and garden products, disinfectants, sanitizers, automotive specialty products, and aerosol paints. Other paint products, such as furniture or architectural coatings, are not part of ARB's consumer products program because local air districts regulate them. Consumer products can come in different product forms including aerosol, liquid, solid, or gel. California law includes a provision that states that the ARB's regulations cannot eliminate any product form.

Consumer products are a significant source of ROG emissions in California and contribute to the formation of both ozone and particulate matter pollution. Although each consumer product may seem to be a small source of emissions, the cumulative use of these products by nearly 35 million Californians results in significant emissions. Consumer products accounted for approximately 267 tons per day (tpd) of ROG emissions in the year 2000, which comprised about eight percent of the total man-made ROG emissions statewide. ARB staff (staff) acknowledges that the ROG emissions from consumer products are relatively less reactive when compared to some other ROG emission sources. For example, on a pound for pound basis, the ROG emissions from vehicle exhaust are estimated to lead to the formation of more than twice as much ozone than the ROG emissions from consumer products. However, this does not mean that consumer products should not be controlled. ROG emissions from consumer products do lead to the formation of ozone and are a significant source of air pollution in California. Further reductions in ROG emissions from consumer products and other ROG sources are needed if ozone standards are to be achieved.

As a result of several regulations adopted by the ARB over the last ten plus years, emissions from consumer products and aerosol coatings have decreased, and continued reductions are projected through 2005. Table III-A-1 lists the various regulations adopted by the ARB with respect to consumer products. Each regulation has been amended at least once since it was originally adopted. Table III-A-2 presents current and projected emissions from consumer products reflecting the benefits of all adopted regulations. Due to population growth and without additional controls, staff

expects the trend of emissions reductions to reverse once the last of the already adopted standards takes effect in 2005. With a projected 1.4 percent population increase per year in California, consumer product emissions are expected to increase by more than 3.5 tpd annually after 2005.

**Table III-A-1
California Consumer Products Regulations**

<u>Regulation</u>	<u>Adoption Year</u>
Antiperspirants and Deodorants	1989
Consumer Products	1990
Phase I Amendments	1993
Phase II Amendments	1996
Midterm Measures	1997
Amendments I	
Midterm Measures	2000
Amendments II	
Alternative Control Plan	1994
Aerosol Coatings	1995
Hairspray Credit Program	1997

**Table III-A-2
Baseline Emissions for Consumer Products
(Statewide Emissions, Summer, tpd)**

	1990	2000	2005	2010	2015	2020
ROG	320	267	244	260	277	295

(South Coast Air Basin Emissions, Summer, tpd)

	1990	2000	2005	2010	2015	2020
ROG	142	117	105	108	116	121

2. Existing Control Program

ARB has adopted five regulations affecting consumer products. The first regulation reduced ROG emissions from antiperspirants and deodorants in 1989. This was followed in 1990 by the first phase of regulations for 16 other consumer product categories. The regulations have been amended several times including, Phase I in 1993, Phase II in 1996, Midterm Measures I in 1997, and Midterm Measures II in 2000,

and contain a total of nearly 200 emission limits affecting 82 categories of consumer products. In 1995, ARB adopted a separate regulation that included mass emission limits for 35 categories of aerosol coatings. The aerosol coatings regulation was recently amended to replace the mass limits with photochemical reactivity limits for 36 aerosol coating categories. Photochemical reactivity limits are designed to restrict the amount of ozone likely to be formed from reactions of the reactive organic compounds used in each aerosol coating product. On the other hand, mass emission standards limit the quantity of ROG emissions from a given product. Both methods are effective control strategies. As a result of these measures, emissions from regulated categories have been reduced 50 percent, and in total, statewide consumer product emissions will have been reduced by over 130 tpd ROG (37 percent reduction) in 2005, compared to uncontrolled levels with growth.

This 130 tpd reduction from consumer products comes despite the fact that a significant portion of consumer product emissions is not easily available for reduction. Categories of consumer products comprising approximately 100 tpd ROG have not yet been regulated. Of these emissions, approximately 22 tpd are represented by very small categories, each emitting less than 0.1 tpd, which makes setting cost-effective limits difficult. Multi-purpose solvents comprise 20 tpd of the 100 tpd total. Consumers purchase these products for the solvent effect; therefore, replacing a hydrocarbon solvent with water or exempt solvents may not always be a viable option. Nevertheless, we are currently conducting a survey for this category to determine if reductions in either mass or reactivity are feasible. Further, the remaining 58 tpd are comprised of other categories, such as rubbing alcohol, which are difficult to regulate due to health or efficacy concerns. Another complicating factor is that emissions from all categories of consumer products, both regulated and unregulated, are growing yearly because of California's burgeoning population.

ARB has attempted to provide manufacturers with compliance flexibility in the regulations by incorporating market-based components such as the Innovative Products Exemption (IPE) provision (1990), Alternative Control Plan (ACP) (1994), and Hairspray Credit Program (1997). The IPE allows manufacturers to market products with a higher percentage of ROG than the regulation limit as long as they can demonstrate that, due to some characteristic of the product formulation, design, delivery system or other factor, the use of the product will result in less ROG emissions than a representative, complying product. The ACP employs the concept of emissions averaging to provide additional flexibility when formulating consumer products. The Hairspray Credit Program allows manufacturers to generate emission reduction credits by introducing low-ROG based hairspray prior to the effective date of a regulatory limit or by formulating products with a ROG content lower than the regulatory limit. Manufacturers could then use credits to defer compliance with other consumer products emission limits, so long as emission reduction obligations are met in the aggregate.

3. Proposed Strategies

As part of the revised SIP for the South Coast, ARB would evaluate two measures to reduce the emissions associated with consumer products. The strategies ARB staff proposes to pursue are listed in Table III-A-3.

**Table III-A-3
Proposed Strategies for Consumer Products**

Strategies		Timeframe	
		Action	Implementation
CONS-1	Set New Consumer Products Limits for 2006	2003 - 2004	2006
CONS-2	Set New Consumer Products Limits for 2008 - 2010	2006 - 2008	2008 - 2010

a. CONS-1: Set New Consumer Products Limits for 2006

Time Frame: Adopt 2003-2004; Implement 2006

Responsible Agency: ARB

Proposed Strategy:

Adopt new consumer product category limits in 2003-2004 and implement these new limits in 2006.

To adopt new limits for addressing emissions growth from consumer products, staff plans to target previously unregulated categories or regulated categories that staff has not evaluated for further emissions reductions during the last five years. Additional reductions may be achieved through both mass-based and reactivity-based limits. Using survey data from the 2001 calendar year, staff will consider proposal of new mass-based or reactivity-based limits in the 2003 to 2004 timeframe for implementation in 2006.

In order to ensure ARB reaches a consumer product emission reduction goal of at least five tpd ROG statewide by 2006 (about two tpd in the South Coast) to mitigate the projected emissions increase due to growth, staff proposes to evaluate solvents and many other regulated or unregulated categories. However, staff would pursue additional reductions beyond the target if they prove to be technologically and commercially feasible.

As part of this effort, staff is proposing to evaluate the various unregulated solvent categories that may contain up to 100 percent ROG. These product categories include multi-purpose removers, graffiti removers, electronic cleaners, adhesive removers, and other packaged solvents. Within the solvent categories, we intend to investigate the feasibility of using reactivity-based strategies to reduce the ozone forming potential of the products. However, we also propose to evaluate mass-based strategies, which may include reducing the ROG content of the products by reformulating with water or exempt solvents, using low vapor pressure ROG, or by replacing propellants with exempted hydrocarbons or compressed gases. Staff is conducting a detailed survey to obtain 2001 sales and formulation data to better understand the variety of products available, the basic functions of these products, and potential reformulation alternatives.

ARB may also seek reductions from many of the smaller regulated or currently unregulated categories of consumer products. For example, toilet/urinal care products, several categories of personal care products, such as nail polishes, certain hair styling aids, and other cleaning products that are not currently regulated will be evaluated to

determine if it is feasible to establish ROG limits. Some other categories we may consider are special purpose adhesives, footwear care products, and other products that were not included in the 1997 Consumer and Commercial Products Survey.

Potential Emission Reductions:

The potential emission reductions for this measure are 5 tpd ROG statewide by 2006, growing to 5.3 tpd ROG by 2010 and 6.1 tpd ROG by 2020. For the South Coast, the potential emission reductions are 2.2 tpd ROG by 2006, growing to 2.3 tpd ROG by 2010 and 2.5 tpd ROG by 2020.

SIP Commitment for Measure CONS-1

South Coast 2003 SIP Commitment:

ARB staff proposes to commit to bring this measure to the Board between 2003 and 2004. The measure as proposed to the Board will, at a minimum, achieve 2.3 tpd of ROG reductions in the South Coast Air Basin in 2010.

Commitments for Future SIPs:

As other areas of the State develop attainment SIPs that require additional emission reductions to show progress and/or attainment, we will work with the appropriate local air districts to determine which State and/or federal measures are appropriate to include for federal approval.

b. CONS-2: Set New Consumer Products Limits For 2008 - 2010

Time Frame: Adopt 2006-2008; Implement 2008-2010

Responsible Agency: ARB

Proposed Strategy:

Adopt new consumer product category limits in 2006 and 2008. Implement these new limits in 2008 and 2010.

To adopt new limits for consumer products in 2006, ARB staff will need to update inventories detailing product ingredients and product sales. Staff plans to conduct a survey in 2004 for the 2003 calendar year. Survey categories would include those with limits effective by January 1, 2003, as well as previously unregulated categories. From data collected in the 2003 calendar year survey, staff would consider adoption of new mass-based or reactivity-based limits in 2006, for implementation in 2008.

To adopt new and/or lower limits for consumer products in 2008, staff will need to further update inventories detailing product ingredients and product sales. We plan another survey in 2006 for the 2005 calendar year. Categories would include products with limits effective between 2003 and 2005 and all aerosol coatings. Based on the survey results, ARB staff will evaluate both mass-based and reactivity-based control options for adoption of new limits in 2008, with implementation by 2010.

There are several possible approaches that will be evaluated for reducing ROG from consumer products in the 2006-2010 timeframe. One possible regulatory approach would be to adopt mass-based limits based on reformulation. In addition, mass or reactivity-based limits may be set for new categories and for small categories that have grown significantly (in terms of product sales) over the last five to ten years. Reactivity limits would be set for those categories where mass-based limits may not be a feasible option. Some solvent categories, for example, are purchased by consumers for their solvent effect. A reactivity-based limit in these categories would allow manufacturers to reformulate using less reactive compounds that would maintain the product's efficacy and result in a reduction of the formation of ozone. The feasibility of adopting a single limit for a product category could also be evaluated. For example, if technologically and commercially feasible, all products within a category, irrespective of product form, could meet the same limit whether the products were dispensed from a pump spray, squeeze bottle, or aerosol can. Staff will also evaluate the technical and commercial feasibility of adopting general emission limits to cover broad ranges of consumer products to keep up with industry changes to product lines. Another approach that could be evaluated is to limit the use of hydrocarbon propellants. Lower limits may be set while still allowing the use of hydrocarbon propellants, such as in post-

foaming products or by blending with exempt propellants. Specific exemptions contained in the regulation may be re-evaluated to see if they are still warranted.

Potential Emission Reductions:

The potential emission reductions for this measure are 20 to 35 tpd ROG statewide by 2010, growing to 23 to 40 tpd by 2020. For the South Coast, the potential emissions reductions are 8.5 to 15 tpd ROG by 2010, growing to 9.7 to 17 tpd ROG by 2020.

SIP Commitment for Measure CONS-2

South Coast 2003 SIP Commitment:

ARB staff proposes to commit to bring measures to the Board between 2006 and 2008. The measures as proposed to the Board will, at a minimum, achieve between 8.5 tpd and 15 tpd of ROG reductions in the South Coast Air Basin in 2010.

Commitments for Future SIPs:

As other areas of the State develop attainment SIPs that require additional emission reductions to show progress and/or attainment, we will work with the appropriate local air districts to determine which State and/or federal measures are appropriate to include for federal approval.

CHAPTER B

Fueling and Vapor Recovery

CHAPTER B. FUELING AND VAPOR RECOVERY

1. Category Description

ARB and districts share responsibility for controlling emissions from the storage and transfer of gasoline. ARB certifies prototype vapor recovery systems. District rules and State law require that only ARB-certified systems be used for gasoline storage, transfer, and refueling operations. Districts inspect and test the vapor recovery systems upon installation during the permit process and conduct regular inspections to check that systems are operating as certified. ARB provides districts with these inspection procedures and test methods.

ARB is also responsible for controlling air toxics that pose harm to public health. For this reason, air toxics from gasoline storage and transfer also fall under the State's authority to control air toxic emissions.

The storage and transfer of gasoline for vehicle refueling is a significant source of ROG emissions in California. Vapor recovery systems are used to capture vapors during the transfer of gasoline between storage tanks and tanker trucks and during the refueling of vehicles at gasoline pumps. Storage tanks can either be sited above ground or underground.

Transfers of gasoline for pleasure craft refueling can be a significant source of emissions, particularly during the summer months when the potential for ozone formation is highest. Emissions can be released when the operator transfers the nozzle from the vessel to the dispenser, tries to overfill or "top off" the vessel, or when the vessel "spits back" fuel from overfill.

When working properly, the emission reduction benefits of these systems are significant. Unfortunately, in many cases, systems have not worked in the field to control emissions at the certified level, and consequently, significant emission reductions have been forgone. In recent years, ARB and the districts have taken many steps to improve the performance and reliability of vapor recovery systems, including ARB's adoption of the Enhanced Vapor Recovery (EVR) program in 2000. ARB staff believes there are additional opportunities to reduce emissions from gasoline storage, transfer, and vehicle refueling.

Emissions from petroleum marketing have dropped significantly since 1980 as a result of the installation of vapor recovery systems. In 2000, petroleum marketing operations still accounted for about 40 tpd of ROG emissions in the South Coast, but emissions are projected to drop as the enhanced vapor recovery program is implemented. Table III-B-1 presents baseline emissions projected for fueling and vapor recovery operations.

Table III-B-1
Baseline Emissions for Fueling and Vapor Recovery Operations
(South Coast, Summer, tpd)

	2000	2005	2010	2015	2020
ROG	42	22	22	23	23

2. Existing Control Program

Vapor recovery systems have been used in California to control ROG for over 20 years. State law enacted in 1975 required ARB to “adopt procedures for determining the compliance of any system designed for the control of gasoline vapor emissions during gasoline marketing operations, including storage and transfer operations, with performance standards, which are reasonable and necessary to achieve or maintain any applicable ambient air quality standard.” Since then, ARB has adopted the certification and test procedures to ensure vapor recovery systems meet minimum standards.

Phase I Vapor Recovery

As each gasoline transfer will lead to displaced vapors, vapor recovery is used throughout the gasoline marketing chain. Phase I vapor recovery is applied to gasoline transfer operations involving cargo tank trucks. The first transfer occurs when the cargo tank is filled with product at the loading rack of a refinery terminal or a bulk plant. While the cargo tank is filled, gasoline vapor from the cargo tank is recovered and normally condensed back to liquid fuel. The vapor recovery units at the terminal or bulk plant are certified under ARB procedures. There is also an ARB certification procedure for cargo tanker trucks. ARB assists districts by conducting certification tests at terminals and bulk plants. Phase I vapor recovery also includes the transfer from the cargo tank to the gasoline dispensing facility, or service station. Phase I vapor recovery is required throughout California and in most other states.

Phase II Vapor Recovery

Phase II vapor recovery controls emissions resulting from gasoline transfer from the gasoline dispensing facility to vehicles. This is the vapor recovery equipment that many of us operate routinely when filling up our cars. The two main types of Phase II vapor recovery systems are balance and assist. The balance systems can be identified by the long bellows or boot on the nozzle. The end of the bellows must make a good seal when the nozzle is dispensing fuel into the vehicle. This is important to ensure the vapor pushed out while filling the vehicle tank is routed back through the nozzle to the

underground vapor space. Assist system nozzles, in contrast, are often “bootless.” The vapors are collected through a series of holes in the spout which vacuum up the vapors during a refueling. This requires use of an active vapor pump. Some assist systems also have processors to manage the underground vapor space pressure. Two currently certified systems operate with vapor incinerators on or near the vent pipe in order to reduce emissions.

Benzene Airborne Toxic Control Measure

In 1987, ARB adopted an airborne toxic control measure (ATCM) for benzene. This measure requires use of Phase II vapor recovery at all gasoline dispensing facilities in California, except those with very low throughput. Previous to implementation of the ATCM, Phase II vapor recovery was required only if specified in a district rule as an ROG control measure. Usually, those districts were in nonattainment of the ambient ozone standard. Thus, the ATCM resulted in the expansion of Phase II vapor recovery in all districts within California and reduced exposure to benzene while fueling vehicles.

On-Board Refueling Vapor Recovery

In 1994, U.S. EPA set vehicle-based or onboard refueling vapor recovery (ORVR) standards to control refueling emissions as required under the federal Clean Air Act. In 1995, ARB adopted the federal ORVR regulations, with minor modifications, to promote a consistent vehicle design for all 50 states and reduce the testing burden for vehicle manufacturers. ORVR works by routing refueling vapors to a carbon canister on the vehicle. The routing of the vapor to the canister requires a few hardware changes to the vehicle. The fuel tank vent line must be rerouted from the vehicle fill-pipe to the canister, and a seal must be established at the fill-pipe to ensure the vapor is not emitted at the fill-pipe outlet. Vehicle manufacturers use different designs to meet these requirements, but there are two basic types of fill-pipe seals. The most common is a “liquid” seal, which is formed by the gasoline itself as it enters the fill-pipe, which has been reduced in diameter to ensure a good seal. The other type is a “mechanical” seal, which is similar to a gasket that seals closely to the nozzle.

After U.S. EPA adopted the ORVR requirements, concerns were raised regarding compatibility of Phase II vapor recovery and ORVR. The main concern was that since vapor was not returned to the underground storage tank when fueling an ORVR vehicle, air would be drawn into the underground vapor space as liquid was dispensed. Gasoline evaporation would lead to vapor growth and possible excess emissions.

Enhanced Vapor Recovery

In 2000, ARB adopted enhanced vapor recovery (EVR) requirements to improve equipment reliability and achieve additional emission reductions. New requirements include more stringent standards and new equipment specifications for both Phase I and Phase II vapor recovery systems. The new standards will reduce spillage and gasoline evaporation from gasoline nozzles, make vapor recovery systems compatible with the ORVR systems on motor vehicles, and require computerized monitoring equipment for vapor recovery systems to self-diagnose and alert operators when repairs are needed. These requirements are being phased-in over the next several years. In addition to these regulatory changes, ARB is working with districts to improve inspection and compliance test procedures to aid in the enforcement of vapor recovery regulations.

3. Proposed Strategies

ARB would evaluate a number of measures to reduce the evaporative emissions associated with fuel storage, transport, and vehicle refueling. The strategies ARB staff proposes to pursue are listed in Table III-B-2. ARB is also proposing a measure to control evaporative emissions from cargo tanker trucks, as described in Chapter B of Section II.

**Table III-B-2
Proposed Strategies for Fueling and Vapor Recovery**

Strategies		Timeframe	
		Action	Implementation
FVR-1	Increase Recovery of Fuel Vapors from Aboveground Storage Tanks	2003	2007
FVR-2	Recover Fuel Vapors from Gasoline Dispensing at Marinas	2006 - 2009	2006 - 2010
FVR-3	Reduce Fuel Permeation Through Gasoline Dispenser Hoses	2004	2007

a. FVR-1: Increase Recovery of Fuel Vapors from Aboveground Storage Tanks

Time Frame: Adopt 2003; Implement 2007

Responsible Agency: ARB

**Table III-B-3
Baseline Emissions for Aboveground Storage Tanks¹
(South Coast, Summer, tpd)**

	2000	2005	2010	2015	2020
ROG	0.1	0.1	0.1	0.2	0.2

Proposed Strategy:

Regulations controlling the transfer and marketing of fuel in California were initiated in the 1970s in two phases. Phase I regulates gasoline transfer from cargo tank to dispensing facility storage tank, and Phase II regulates gasoline transfer from the dispensing facility to the motor vehicle.

EVR for facilities with underground storage tanks was approved by the Board in March 2000 and is being implemented. The purpose of EVR is to seek additional emission reductions by increasing the stringency of performance standards and specifications and to improve the performance and reliability of vapor recovery equipment. The approved EVR regulations do not apply to vapor recovery systems used on aboveground storage tanks (ASTs). Therefore, the Board is developing a new EVR rulemaking package specific to vapor recovery systems for this category. Vapor recovery systems for aboveground tanks are currently certified by ARB with an allowed 90 percent control efficiency versus 95 percent proposed for EVR.

This regulation would address the increasing number of aboveground storage tank dispensing systems used at private and public facilities and some retail sites. There has been an increasing demand for ASTs for fleet operators in both the public and private non-retail sectors, such as emergency response operations, public works, school districts, marinas, car rental agencies, and car dealerships. This demand has been due to increased compliance costs associated with underground storage tank

¹ The current inventory does not differentiate between UST and AST dispensing facility emissions. Therefore, the baseline inventory is estimated. Data on AST emissions would be collected over the next year.

operations. ARB staff is therefore proposing to apply as many of the current EVR standards as feasible to ASTs, including an increase in overall system efficiency from 90 to 95 percent vapor recovery. If ARB's data collection and testing determine that this measure is technically feasible, staff would schedule this for ARB consideration as a rule in 2003.

Potential Emission Reductions:

Assuming that one percent of the statewide gasoline throughput is dispensed via ASTs and that these tanks are equipped with vapor recovery systems operating at 90 percent efficiency, then the current emissions are about 0.3 tpd statewide (about 0.1 tpd in the South Coast). Updated inventories will be used to refine emission estimates. By reducing Phase I and Phase II transfer and vent emissions, this strategy would reduce emissions by about 0.2 tpd statewide (0-0.1 tpd in the South Coast). However, fugitive emissions for aboveground storage tanks are expected to be higher than for underground storage tanks and amenable to control. Therefore, reductions could be even greater. The proposed regulation increases the certification evaluation period, which will more effectively ensure that vapor recovery systems operate properly.

SIP Commitment for Measure FVR-1

South Coast 2003 SIP Commitment:

ARB staff proposes to commit to bring this measure to the Board in 2003. The measure as proposed to the Board will, at a minimum, achieve between 0 and 0.1 tpd of ROG reductions in the South Coast Air Basin in 2010.

Commitments for Future SIPs:

As other areas of the State develop attainment SIPs that require additional emission reductions to show progress and/or attainment, we will work with the appropriate local air districts to determine which State and/or federal measures are appropriate to include for federal approval.

b. FVR-2: Recover Fuel Vapors from Gasoline Dispensing at Marinas

Time Frame: Adopt 2006-2009; Implement 2006-2010

Responsible Agency: ARB

**Table III-B-4
Baseline Emissions for Marinas: Vapor Recovery²
(South Coast, Summer, tpd)**

	2000	2005	2010	2015	2020
ROG	0.1	0.1	0.1	0.1	0.1

Proposed Strategy:

Unlike vehicle fueling emissions controlled by vapor recovery systems, vapors released during marina fueling are uncontrolled. As marina gasoline is dispensed primarily during the summer months, these ROG emissions are contributing to smog levels during the ozone season.

The South Coast District considered vapor recovery controls at marinas in the 1980s, but did not pursue the rule due to technical difficulties and cost. Existing certified vapor recovery systems cannot be easily applied at marinas as the storage tank is usually located uphill and quite a distance away from the gasoline dispenser.

Under this strategy, ARB staff proposes to determine if new technology may be feasible and cost-effective in reducing ROG emissions from gasoline dispensing operations at marinas. The State Water Resources Control Board (SWRCB) is also considering new requirements for marinas and has already distributed a marina survey that includes requests for information pertinent to estimating air emissions. Survey data for 80 percent of the marinas statewide indicate that approximately 0.10 percent of the total statewide throughput, or about 14 million gallons of gasoline annually, are dispensed at marina fueling facilities.

² ARB's current official inventory assumes that gasoline dispensed for off-road purposes is uncontrolled and represents two percent of statewide throughput, but does not identify the emissions associated with marinas specifically. This table contains preliminary estimates of emissions at marinas, assuming negligible growth in gas consumption at marinas in the next 20 years.

Potential Emission Reductions:

The potential emission reductions associated with this proposal are expected to be between 0.1 to 0.2 tpd statewide (0-0.1 tpd in the South Coast) based on the following assumptions: 0.10 percent of the total statewide throughput is dispensed at marinas. If 80 percent control of these emissions were achieved, the emission reduction would be about 0.13 tpd.

SIP Commitment for Measure FVR-2

South Coast 2003 SIP Commitment:

ARB staff proposes to commit to bring this measure to the Board between 2006 and 2009. The measures as proposed to the Board will, at a minimum, achieve between 0 and 0.1 tpd of ROG reductions in the South Coast Air Basin in 2010.

Commitments for Future SIPs:

As other areas of the State develop attainment SIPs that require additional emission reductions to show progress and/or attainment, we will work with the appropriate local air districts to determine which State and/or federal measures are appropriate to include for federal approval.

c. FVR-3: Reduce Fuel Permeation Through Gasoline Dispenser Hoses

Time Frame: Adopt 2004; Implement 2007

Responsible Agency: ARB

**Table III-B-5
Baseline Emissions for Gasoline Dispenser Hose Permeation
(Statewide, Annual Average, tpd)**

	2000	2005	2010	2015	2020
ROG	3	NQ	NQ	NQ	NQ

Note: Emissions have only been estimated for 2000. Future year emissions will be estimated during measure development.

Proposed Strategy:

Emission controls for vapors generated from motor vehicle fueling were initiated in the 1970s. ARB's EVR program, adopted in March 2000, constitutes a major overhaul of the vapor recovery program with numerous new standards and specifications aimed at increasing durability and reliability of vapor recovery equipment. However, permeation emissions from dispenser hoses were not targeted in the EVR program.

Gasoline dispensing hoses used at marinas have stricter standards for hose permeability due to water quality concerns. The goal of FVR-3 is to determine the applicability of applying the stricter permeability standard for marine gasoline hoses to dispenser hoses at service stations. Specifically, this measure would review current permeation requirements for gasoline dispenser hoses and, if feasible, establish lower permeation requirements.

Potential Emission Reductions:

Emission reductions of up to 1.7 tpd ROG statewide (0-0.7 tpd ROG in the South Coast) may be achievable if the lower permeation limit associated with marine hoses can be applied to gasoline dispenser hoses at service stations.

SIP Commitment for Measure FVR-3

South Coast 2003 SIP Commitment:

ARB staff proposes to commit to bring this measure to the Board in 2004. The measure as proposed to the Board will, at a minimum, achieve between 0 and 0.7 tpd of ROG reductions in the South Coast Air Basin in 2010.

Commitments for Future SIPs:

As other areas of the State develop attainment SIPs that require additional emission reductions to show progress and/or attainment, we will work with the appropriate local air districts to determine which State and/or federal measures are appropriate to include for federal approval.

CHAPTER C

Pesticides

CHAPTER C. PESTICIDES

1. Category Description

Pesticides are industrial chemicals produced specifically for their toxicity to a target pest. Any living organism that causes damage or economic loss or transmits or produces disease may be a target pest. Pests can be animals (e.g., insects or mice), unwanted plants (e.g., weeds), or microorganisms (e.g., plant diseases and viruses).

Many pesticide products contain volatile organic compounds (VOC), either as an active ingredient or other ingredient. The chemical formulation and application method for pesticides affect the amount of VOC emitted. In the South Coast, pesticides are used primarily to treat structures, as well as agricultural products. Integrated pest management practices, other voluntary actions, and regulatory action on methyl bromide in response to health and environmental concerns have all contributed to a significant reduction in reactive emissions from pesticides in the South Coast since 1990, as shown in Table III-C-1. Emissions from pesticides in other regions of California may vary significantly from the trend shown below.

**Table III-C-1
Baseline Emissions for Pesticides
(South Coast, Annual Average, tpd)**

	1990	1995	2000	2005	2010	2015	2020
ROG	8.2	3.0	2.8	2.0	1.7	1.7	1.7

2. Existing Control Program

The Department of Pesticide Regulation (DPR) is the California agency responsible for regulating pesticides for commercial/structural and agricultural uses. DPR can establish regulations to reduce both toxic and criteria pollutant emissions from pesticides using the best practicable control techniques available. Control measures may be implemented by several methods, including regulatory actions, local permit conditions, and product substitution or cancellation.

Pesticides are also regulated under federal law. Congress, under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), gave the U.S. EPA authority to provide federal control of pesticide distribution, sale, and use. All pesticides used in the United States must be registered (licensed) by the U.S. EPA. Registration helps to ensure that pesticides will be properly labeled and will not cause unreasonable harm to the environment.

Pesticides available for sale to household and institutional consumers have been regulated under ARB's consumer product authority since 1995. Currently, ARB has adopted VOC limits for insecticide products targeted for crawling insects, flying insects, fleas and ticks, and wasps and hornets. ARB also regulates other pesticide products, such as non-selective herbicides and insect repellants. By 2005, when the final tier of adopted VOC limits for consumer pesticides becomes effective, ARB will have obtained VOC reductions of approximately 60 to 70 percent from the regulated household pesticide categories.

As part of the 1994 SIP, DPR committed to reduce VOC emissions from pesticides in certain federal ozone nonattainment areas of the State. The reductions were to be gradually achieved through a shift in the application practices and types of pesticides used. In the South Coast, VOC emissions from pesticide use have declined dramatically; as a result, we propose to retain the existing SIP commitment. As part of the SIP development process for other areas, ARB and DPR will work with each region to identify any additional strategies that are needed based on the nature of the problems in that particular region.

3. Proposed Strategy

a. PEST-1: Implement Existing Pesticide Strategy

Time Frame: Implement 1996-2010

Responsible Agency: DPR

Proposed Strategy:

DPR has broad authorities under State law to control the use of pesticides for the purposes of protecting human health and the environment, including improving air quality (Food & Agriculture Code §§14102, also §§12781, 12824-12828, 12976-12977, 12991-12995, 12996-12999, 13101 and 13102.)

As described in the 1994 SIP and U.S. EPA's notice approving that plan, DPR committed to reduce VOC emissions from pesticides through voluntary measures, with a regulatory backstop. Specifically, DPR committed to adopt and submit to U.S. EPA by June 15, 1997, any regulations necessary to reduce VOC emissions from agricultural and commercial structural pesticides by specific percentages of the 1990 base year emissions, by specific years, and in specific nonattainment areas. For the South Coast, the commitment is to reduce VOC emissions from pesticides to a level 20 percent below 1990 base year emissions by the attainment year.

Potential Emission Reductions for 2003 South Coast SIP:

Based on today's estimate of 1990 South Coast Air Basin emissions at 8.2 tpd VOC, the target level is 6.6 tpd VOC emissions remaining in 2010. Current emissions are already below the target level and 2010 emissions are projected at 1.7 tpd. These projections are reflected in the baseline inventory for the 2003 South Coast SIP.

4. Long-Term Advanced Technologies Strategies

ARB will seek to achieve additional ROG reductions from pesticides, beyond those identified in the existing SIP commitment, for areas with a demonstrated regional need for such benefits. As part of the development of the San Joaquin Valley Ozone SIP, DPR is taking the lead in working with interested stakeholders to determine how pesticide emissions can be further reduced by the attainment deadline.