

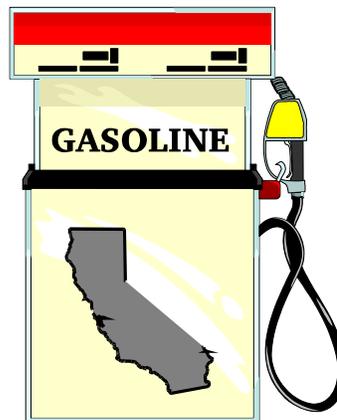
California Environmental Protection Agency



Proposed Amendments to the California Phase 3 Reformulated Gasoline Regulations

**Proposed Amendments to the California Reformulated Gasoline Regulations
Postponing Imposition of the CaRFG3 Standards and the Prohibition of
MTBE and Oxygenates Other than Ethanol in California Gasoline
from December 31, 2002 to December 31, 2003.**

STAFF REPORT: INITIAL STATEMENT OF REASONS



Release Date: June 7, 2002

**State of California
California Environmental Protection Agency
AIR RESOURCES BOARD
Stationary Source Division**

**STAFF REPORT: INITIAL STATEMENT OF REASONS
PROPOSED AMENDMENTS TO THE CALIFORNIA
PHASE 3 GASOLINE REGULATIONS**

**Public Hearing to Consider Amendments to the
California Reformulated Gasoline Regulations
Postponing Imposition of the CaRFG3 Standards and the
Prohibition of MTBE and Oxygenates Other than Ethanol in
California Gasoline from December 31, 2002 to December 31, 2003.**

**Date of Release: June 7, 2002
Scheduled for Consideration: July 25, 2002**

Location:

**California Environmental Protection Agency
Central Valley Auditorium, Second Floor
1001 I Street
Sacramento, California 95814**

This report has been reviewed by the staff of the Air Resources Board and approved for publication. Approval does not signify that the contents necessarily reflect the views and policies of the Air Resources Board, nor does mention of trade names or commercial products constitute endorsement or recommendation for use. To obtain this document in an alternative format, please contact the Air Resources Board ADA Coordinator at (916) 322-4505, TDD (916) 324-9531, or (800) 700-8326 for TDD calls from outside the Sacramento area. This report is available for viewing or downloading from the Air Resources Board's Internet site; <http://www.arb.ca.gov/regact/mtbepost/mtbepost.htm>

Acknowledgments

This report was prepared with the assistance and support from the other divisions and offices of the Air Resources Board. In addition, we would like to acknowledge the assistance of staff of the State Water Resources Control Board and the California Energy Commission.

Authors

Gloria Lindner, Fuels Section
Nelson Chan, Fuels Section
Jim Guthrie, Fuels Section
Winardi Setiawan, Fuels Section
Harold Holmes, Evaluation Section
Jim Peterson, Industrial Section
Kevin Cleary, Research Division
Tom Jennings, Office of Legal Affairs

Reviewed by:

Michael Scheible, Deputy Executive Officer
Peter D. Venturini, Chief, Stationary Source Division
Robert Barham, Assistant Chief, Stationary Source Division
Dean C. Simeroth, Chief, Criteria Pollutants Branch
Steve Brisby, Manager, Fuels Section

Table of Contents

I.	Introduction and Summary	1
A.	INTRODUCTION	1
B.	WHY IS MTBE ADDED TO CALIFORNIA GASOLINE?	1
C.	WHY IS MTBE IN GASOLINE OF CONCERN?	2
D.	WHAT WERE THE DIRECTIVES OF THE GOVERNOR'S EXECUTIVE ORDER D-5-99?	2
E.	WHAT ARE THE PRESENT MTBE PROHIBITIONS?	3
F.	WHY ARE AMENDMENTS TO THE CARFG3 REGULATIONS NECESSARY?	3
	1. <i>CEC Study of Impact of MTBE Phase-out</i>	3
	2. <i>Oxygenate Waiver Request</i>	4
	3. <i>The Governor's Executive Order D-52-02</i>	4
G.	WHAT ARE THE PROPOSED AMENDMENTS?	4
	1. <i>Postpone Prohibition of MTBE in California Gasoline</i>	4
	2. <i>Revise the Schedule for Reducing Allowable Residual Levels of MTBE</i>	4
	3. <i>Postpone Prohibition of non-MTBE Ethers and Alcohols Other than Ethanol</i>	4
	4. <i>Postpone the Imposition of the CaRFG3 Specifications</i>	5
	5. <i>Other Changes</i>	5
H.	WHAT ALTERNATIVES WERE CONSIDERED?	5
I.	DO THE PROPOSED AMENDMENTS SATISFY THE COMMITMENTS IN THE STATE IMPLEMENTATION PLAN?	5
J.	WHAT ARE THE ENVIRONMENTAL IMPACTS OF THE PROPOSED AMENDMENTS?	6
	1. <i>Air Quality</i>	6
	2. <i>Water quality</i>	6
K.	WHAT IS THE COST OF THE PROPOSED AMENDMENTS?	7
II.	Recommendations	9
III.	Reformulated Gasoline Programs	11
A.	FEDERAL REFORMULATED GASOLINE	11
B.	CALIFORNIA WINTERTIME OXYGEN REQUIREMENT	11
C.	CALIFORNIA'S PHASE 2 REFORMULATED GASOLINE PROGRAM	12
IV.	Ban of the Use of MTBE in California	13
A.	CONCERN WITH THE USE OF MTBE	13

B.	THE GOVERNOR’S EXECUTIVE ORDER D-5-99	13
C.	CEC’S RESPONSE TO THE DIRECTIVE OF EXECUTIVE ORDER D-5-99	14
D.	CALIFORNIA’S PHASE 3 GASOLINE STANDARDS	14
E.	LOCAL REGULATIONS	15
F.	ACTIONS BY OTHER STATES	16
V.	Rationale for Postponing the Ban on the Use of MTBE in California.....	19
A.	CEC COMMISSIONED STUDY TO EVALUATE THE IMPACT OF THE MTBE PHASE-OUT	19
B.	OTHER INFORMATION	19
C.	OXYGENATE WAIVER ISSUE	20
D.	UNDERGROUND STORAGE TANK PROGRAM.....	21
E.	THE GOVERNOR’S EXECUTIVE ORDER D-52-02	22
VI.	Proposed Amendments.....	23
A.	PROHIBITION OF MTBE	23
B.	PROHIBITION OF NON-MTBE ETHERS AND ALCOHOLS OTHER THAN ETHANOL.....	23
C.	SCHEDULE FOR REDUCING ALLOWABLE RESIDUAL MTBE LEVELS.....	23
D.	IMPOSITION OF CARFG3 STANDARDS	24
E.	OTHER REGULATORY CHANGES	24
F.	CONSIDERATION OF ALTERNATIVES	24
VII.	Environmental Impacts of the Proposed Amendments to the CaRFG3 Regulations	27
A.	EFFECTS OF THE PROPOSED CARFG3 AMENDMENTS ON AIR QUALITY	27
	1. <i>Emissions Effects of Postponing the Implementation of the CaRFG3 Regulations</i>	27
	2. <i>Emissions Effects Associated with Commingling</i>	27
	3. <i>Emissions Effects Associated with Permeation</i>	28
B.	EFFECTS OF THE PROPOSED CARFG3 AMENDMENTS ON WATER QUALITY	29
C.	EFFECTS OF THE PROPOSED AMENDMENTS ON GREENHOUSE GAS EMISSIONS	30
D.	EFFECTS OF THE PROPOSED CARFG3 AMENDMENTS ON THE STATE IMPLEMENTATION PLAN	30
E.	ENVIRONMENTAL JUSTICE AND NEIGHBORHOOD IMPACTS.....	31

VIII. Economic Effects of the Proposed Amendments to the CaRFG3 Regulations .. 33

A. EVALUATION OF THE ECONOMIC IMPACT OF A DELAY IN THE REMOVAL OF MTBE FROM CARFG 33

 1. *Savings for California Motorists* 33

 2. *Continued Profitability for MTBE Producers* 33

 3. *Avoided Loss for Federal Highway Trust Fund* 33

 4. *Impact on Refiners and Other Refining Related Industry Participants*..... 34

 5. *Excess Capacity for Ethanol Producers* 34

B. ECONOMIC EFFECTS ON SMALL BUSINESS 35

C. POTENTIAL INCREASED WATER CONTAMINATION COSTS..... 35

APPENDICES

A. Proposed Regulation Order

B. Executive Order D-5-99

C. CEC Report: Timetable for the Phase out of MTBE from California’s Gasoline Supply

D. Executive Order D-52-02

E. Miscellaneous “Cleanup” Amendments to the CaRFG3 Regulations

F. Draft Assessment of the Real-World Impacts of Commingling California Phase 3 Reformulated Gasoline

G. Neighborhood Impacts

H. References

I. INTRODUCTION AND SUMMARY

A. Introduction

The Phase 3 Reformulated Gasoline (CaRFG3) regulations were adopted June 16, 2000 following a December 9, 1999 hearing by the Air Resources Board (ARB). The CaRFG3 regulations prohibit production of California gasoline, after December 31, 2002, with the use of Methyl Tertiary-Butyl Ether (MTBE), establish CaRFG3 standards, and establish a CaRFG3 Predictive Model. The Predictive Model provides refiners with flexibility to use alternative formulations while preserving the benefits of the program.

The CaRFG3 regulations were adopted in response to Governor Davis's March 25, 1999 Executive Order D-5-99 in which he found that, on balance, there is significant risk to the environment from using MTBE in gasoline in California. The Executive Order directed the ARB to adopt CaRFG3 regulations to phase out the use of MTBE in California gasoline by no later than December 31, 2002 and provide additional flexibility to producers of RFG in lowering or removing oxygen while preserving the existing air quality benefits of the CaRFG2 program.

This report is the initial statement of reasons to support proposed amendments to the CaRFG3 regulations adopted in 2000 regarding the effective date of the CaRFG3 regulations, the date of the prohibition of MTBE and oxygenates other than ethanol in California gasoline, and the handblend requirements of the California Reformulated Blendstock for Oxygenate Blending (CARBOB) provisions. The rulemaking is being conducted in response to Governor Davis's March 14, 2002 Executive Order D-52-02. Among other things, the Executive Order directed the ARB to take the necessary actions by July 31, 2002, to "postpone for one year the prohibitions of the use of MTBE and other specified oxygenates in California gasoline, and the related requirements for California Phase 3 reformulated gasoline."

B. Why Is MTBE Added to California Gasoline?

Since 1995, most of the state's gasoline has contained about 11 percent MTBE by volume. Such extensive use of MTBE is largely the result of the requirements of the 1990 Federal Clean Air Act Amendments for a federal reformulated gasoline program and for wintertime oxygenated gasoline programs to be adopted by states with areas in violation of the ambient air quality standard for carbon monoxide (CO). To meet the oxygenate requirements, MTBE became the refiners' oxygenate of choice because of its blending attributes which include its high octane rating, the fact that it dilutes undesirable gasoline components such as benzene, mixes well with gasoline, and is easily distributed in the state's pipeline system.

The federal reformulated gasoline (RFG) regulations adopted by the United States Environmental Protection Agency (U.S. EPA) have since 1995 required the year-round use of RFG containing 2.0-weight percent oxygen in severe and extreme ozone non-attainment areas. By the end of 2002, the federal RFG oxygen requirement will apply to about 80 percent of the gasoline sold in the state.

In response to the wintertime oxygenate requirement, the ARB in 1991 adopted a program that required that gasoline sold during the winter months in CO non-attainment areas contain an oxygenate. Originally, the ARB's wintertime oxygen requirement applied statewide. Currently, it applies only to Los Angeles, Orange, Riverside, San Bernardino, Ventura, and Imperial counties.

C. Why Is MTBE in Gasoline of Concern?

The main concern with the continued use of MTBE is the potential to contaminate California's ground and surface drinking water systems. Even relatively low levels of MTBE can give drinking water an unpleasant taste and odor, making the drinking water unusable. MTBE is very soluble in water and will transfer to groundwater faster, and will travel farther and more easily than other gasoline constituents such as benzene when gasoline leaks from underground storage tanks or pipelines.

With its increased use, MTBE has been found in many areas of the United States in groundwater in the vicinity of leaking underground storage tanks, in reservoirs which allow gasoline-powered watercraft, and to a lesser extent in drinking water supplies. In California, MTBE has been detected in some public drinking water supplies in diverse locations that include South Lake Tahoe, Santa Monica, Riverside, Anaheim, Los Angeles, San Francisco, Santa Clara, and San Diego. While only a small percentage of the State's community water supplies has been contaminated, in Santa Monica, about 75 percent of the drinking water wells are contaminated with MTBE and about one-third of the drinking water wells in the South Lake Tahoe Public Utility District are contaminated. A few drinking water wells in the Santa Clara Valley Water District and Sacramento have also been contaminated with MTBE. In addition, some drinking water wells have been closed down in communities as a protective measure to prevent MTBE from being drawn into the water supply system.

The California MTBE Public Health and Environmental Protection Act of 1997 directed the University of California to conduct research on the effects of MTBE. The University of California report was sent to the Governor in November 1998, and was peer reviewed by the Agency for Toxic Substances and Disease Registry, the United States Geological Survey, and other nationally recognized experts. After completion of the University of California report, two public hearings were held in February 1999. Subsequent to the hearings, the Governor issued Executive Order D-5-99 in which he found a "...significant risk to the environment from using MTBE in gasoline in California." The Executive Order directed appropriate state agencies to begin implementation of the phase out of MTBE from California gasoline.

D. What Were the Directives of the Governor's Executive Order D-5-99?

The Executive Order D-5-99 included a directive to the California Energy Commission (CEC) to develop, in consultation with the ARB, a timetable for the removal of MTBE from gasoline at the earliest possible date, but not later than December 31, 2002. The CEC subsequently determined that December 31, 2002 was the earliest feasible date. The Executive Order also directed the ARB to adopt the CarFG3 regulations by December 1999. In addition, in the Executive Order, the Governor determined that California should request that the U.S. EPA grant

California a waiver from the year-round 2.0 percent by weight minimum oxygen mandate of the federal RFG program.

E. What Are the Present MTBE Prohibitions?

The ARB, in response to the Governor's Executive Order, approved the CaRFG3 regulations in December 1999 requiring the removal of MTBE from California gasoline by December 31, 2002. These regulations were the mechanism used to implement several provisions of the Governor's Executive Order. The CaRFG3 regulations provide producers of RFG with additional flexibility in removing MTBE, provide additional emissions and air quality benefits compared to the existing California Phase 2 Reformulated Gasoline (CaRFG2) program, and allow compliance with the California State Implementation Plan (SIP).

The CaRFG3 regulations prohibit the addition of MTBE and other oxygenates other than ethanol to California gasoline starting December 31, 2002, consistent with the Governor's 1999 directive and the CEC's recommendation. To address the question of trace amounts of MTBE that may be present as contamination, the regulations set limits for the allowable amount of residual MTBE that may be present in CaRFG3 in the distribution system. The CaRFG3 regulations were modified in 2000 to establish a California Reformulated Blendstocks for Oxygenate Blending (CARBOB) predictive model and specifications for denatured ethanol intended for blending into gasoline, and to identify conditions under which distributors could make transitions from one product to another.

Ethanol is the only oxygenate currently approved by the CaRFG3 regulations. Therefore, the ban on MTBE is expected to result in the large-scale replacement of MTBE with ethanol to comply with current federal RFG oxygenate requirements.

F. Why Are Amendments to the CaRFG3 Regulations Necessary?

1. CEC Study of Impact of MTBE Phase-out

Current information indicates that the existing timetable for removal of MTBE could conflict with the directive of Executive Order D-5-99 to ensure adequate supply and availability of gasoline for California consumers. The results of a study commissioned by the CEC in 2001 show that phasing out MTBE from gasoline by the end of 2002 is expected to reduce the ability of in-state refineries to produce sufficient fuel to meet demand, and that the availability of imported finished gasoline or blendstocks is uncertain. Therefore, there could be significant constraints on gasoline supply. This situation could lead to price levels that are 50 to 100 percent higher than normal. In addition, from the CEC contractor's study and from meetings with producers regarding CaRFG3 compliance plans, it is also apparent that some uncertainty exists regarding the difficulties of carrying out the large scale movement of ethanol necessary to meet California's requirements. It is estimated that California will need 750 to 900 million gallons of ethanol annually if MTBE is removed while the federal oxygenate requirement is still in effect. The logistics of moving such large volumes of ethanol have not been fully resolved, and there is a high probability that significant operational problems could occur in areas such as rail coordination, tank car unloading, marine receipts, and distribution of ethanol to gasoline truck terminals.

2. Oxygenate Waiver Request

To expedite the removal of MTBE from California gasoline and to lessen the impact on California consumers, the Governor, in April 1999, requested a waiver from the federal RFG oxygenate requirement. The U.S. EPA on June 12, 2001 denied California's request. This denial resulted in refiners being forced to continue to use an oxygenate thus giving them less flexibility in making CaRFG. With this loss of flexibility, the likelihood of the type of problems raised in the 2001 CEC contractor study, particularly with regard to supply and price of gasoline, becomes much greater. California is now pursuing a legal challenge of the U.S. EPA's decision in federal court.

3. The Governor's Executive Order D-52-02

In response to the problems identified above and the fact that there is significant risk that there would be a disruption in the availability of gasoline in California, on March 14, 2002, Governor Davis issued Executive Order D-52-02 which, among other things, directed the ARB to take the necessary actions, by July 31, 2002, to postpone for one year the prohibitions of the use of MTBE and other specified oxygenates in California gasoline, and the related requirements for California Phase 3 reformulated gasoline.

G. What Are the Proposed Amendments?

1. Postpone Prohibition of MTBE in California Gasoline

The staff is proposing that the Board amend the CaRFG3 gasoline regulations to extend the date on which the addition of MTBE to California gasoline is prohibited until December 31, 2003. This proposed amendment generally postpones the current MTBE prohibition date of December 31, 2002 by one year to comply with the directive of the Governor's Executive Order D-52-02.

2. Revise the Schedule for Reducing Allowable Residual Levels of MTBE

To be consistent with the proposed delay in phasing out the use of MTBE, staff is proposing that the Board adopt a revised schedule for reducing allowable residual levels of MTBE in CaRFG3 after the addition of MTBE is banned. Staff is proposing that the dates in the current schedule be postponed by one year to be consistent with the postponement of the current MTBE phase out date. Starting December 31, 2003, California gasoline could not contain more than 0.30 volume percent MTBE. This residual limit will be further reduced to 0.15 volume percent MTBE starting December 31, 2004, then to 0.05 volume percent starting December 31, 2005.

3. Postpone Prohibition of non-MTBE Ethers and Alcohols Other than Ethanol

The staff is also proposing that the Board postpone the prohibition of the use of non-MTBE ethers and alcohols other than ethanol in CaRFG3. The proposed amendment would prohibit the use of these oxygenates starting December 31, 2003 instead of December 31, 2002 to comply with the directive of the Governor's Executive Order D-52-02. The proposed delay would not change the provision that the prohibition would apply unless a multimedia evaluation of the use of the oxygenate in California gasoline has been conducted, and the California Environmental

Policy Council has determined that such use will not cause a significant adverse impact on public health or the environment.

4. Postpone the Imposition of the CaRFG3 Specifications

The staff is proposing that the Board postpone the imposition of the CaRFG3 limits for gasoline properties by one year to be consistent with the proposed one-year postponement of the MTBE phase out deadline. The CaRFG3 limits were necessary to increase a refiner's flexibility to make gasoline without MTBE while preserving the emissions benefits achieved by the CaRFG2 program. With the proposed delay in the imposition of the MTBE prohibition, the imposition of the CaRFG3 standards will not be necessary until the new date at which the MTBE prohibition becomes effective. This provision does not affect an individual refiner's ongoing ability to elect to use the CaRFG3 provisions to produce MTBE-free gasoline prior to December 31, 2003.

5. Other Changes

Staff is proposing a few additional amendments to ensure that the regulations work effectively, and to correct errors. The changes would simplify the testing provisions for determining whether a CaRFG complies when ethanol is the oxygenate. Also, changes are proposed to correct errors in the assignment of Reid vapor pressure (RVP) regulatory control periods for the North Coast Air Basin and the North Central Coast Air Basin.

H. What Alternatives Were Considered?

Two alternatives to the proposed one-year postponement of the MTBE phase out from California gasoline are: shortening the postponement period and maintaining the current deadline.

A postponement shorter than one year may not allow enough time to complete the infrastructure improvements and contingency provisions needed to ensure adequate supply and availability of gasoline after the MTBE phase out. A shorter postponement would also have the effect of introducing CaRFG3 during a period in which gasoline consumption is typically high, making the implementation of the program especially susceptible to the negative impacts of any constraints on the supply and availability of ethanol.

The current deadline is not satisfactory as more time is required to resolve the issues concerning adequacy of distribution and supply. With these issues resolved during the proposed one-year delay, there should be a significant reduction of the risk of disruption of gasoline supplies that could substantially increase prices, harm California's economy and impose an unjustified burden on California motorists.

I. Do the Proposed Amendments Satisfy the Commitments in the State Implementation Plan?

The CaRFG3 regulation was not one of the measures included in the 1994 SIP but it will provide benefits that help meet the SIP emission reduction obligations. Postponement of the CaRFG3 regulations by one year means that the emission benefits associated with the regulation would be lost during the one year delay. However, there would be no ongoing impact on the SIP unless the delay extends past 2004.

The year 2005 is the first milestone year for which the emission benefits of CaRFG3 have been credited toward ARB's SIP obligations. Because the CaRFG3 requirements were originally scheduled to go into effect on December 31, 2002, no emission reduction benefits from the regulation could be credited toward meeting ARB's 2002 milestone commitment. Consequently, because the CaRFG3 requirements will be fully implemented and the emission benefits will be fully realized by the end of 2004 under staff's proposal, there will be no SIP impact.

J. What are the environmental impacts of the proposed amendments?

1. Air Quality

The proposed amendment should have no significant negative impacts on air quality. Postponing the phase-out of MTBE and the related CaRFG3 regulations by one-year will maintain the benefits associated with the CaRFG2 program. The CaRFG3 program, relative to the CaRFG2 program, is expected to provide additional reductions in the emissions of hydrocarbons, oxides of nitrogen, and potency-weighted toxics of 0.1 percent, 2.3 percent, and 7.1 percent, respectively. Postponing the implementation of the CaRFG3 program by one year will postpone these additional benefits by one year. These additional benefits will be realized to the extent that refiners choose to elect into the CaRFG3 program to facilitate the removal of MTBE from their gasoline early.

There is some concern about the preservation of the emission benefits of CaRFG2 with a change from MTBE to ethanol during the delay of the MTBE phase out. To the extent that refiners choose to phase-out MTBE early, there may be an increase in emissions associated with the use of ethanol. Ethanol in gasoline can lead to an increase in evaporative emissions because of the potential for commingling of gasoline containing ethanol and non-ethanol gasoline in the vehicle fuel tank. Ethanol tends to increase the vapor pressure of any gasoline to which it is added. It is expected that refiners electing to use ethanol to replace MTBE will also elect to produce CaRFG3. This should not have a negative impact as the CaRFG3 regulations provide a Reid vapor pressure (RVP) offset of 0.1 psi designed to offset any increase in emissions associated with commingling.

Ethanol can also have an evaporative emissions impact due to permeation of ethanol through the soft fuel system components of motor vehicles. A delay in the phase out of MTBE will postpone this increase in emissions in so far as individual refiners chose not to remove MTBE and not opt in to the CaRFG3 program early. The magnitude of the permeation emissions impact remains somewhat uncertain at this time, but the ARB is co-funding a research study to investigate permeation emissions associated with ethanol in gasoline.

2. Water quality.

A one-year extension to complete the phase-out of MTBE from gasoline will likely result in some additional contamination of groundwater and surface water with MTBE. However, the magnitude of this impact is difficult to determine. Continued use of MTBE as a fuel oxygenate for an additional year may also add to the cleanup needs the state will face over the next decade, and could extend the risk of further closures of public drinking water supply.

It is not expected that the occurrence of leaks of gasoline containing MTBE in the proposed additional year would add significantly to the amount of existing contamination. For example, preliminary results of field tests currently being conducted by the State Water Resources Control Board (SWRCB) indicate that the strengthened underground storage tank (UST) requirements and enforcement have been very successful in reducing liquid releases of gasoline.

The SWRCB has also evaluated the potential for MTBE to enter groundwater through gasoline vapor leaks from underground piping and tanks. The SWRCB commissioned a tracer study to quantify the probability and environmental significance of releases from petroleum underground storage tank (UST) systems meeting the 1998 upgrade requirements. The largest tracer releases detected were estimated to have been associated with gasoline releases of 0.4 gallons per day (liquid equivalent), while the vast majority of releases are estimated to have been smaller than 0.04 gallons per day. The results are a significant improvement over a similar study performed before the implementation of the 1998 upgrade requirements that indicated that 35 percent of UST systems nationwide exhibited leak rates above 2.4 gallons per day. The SWRCB will continue to pursue research in this area to further evaluate impacts on groundwater.

With the one-year delay of the MTBE ban, other sources of MTBE releases will continue to have impacts on the water environment. These include deposition of MTBE from the air, surface spills, underground pipelines, above-ground storage tanks, marinas, watercraft, and vehicle accidents. Although the impact of these sources cannot be estimated at this time, historically their impact has been small compared to the impact from MTBE in gasoline leaks from underground storage tanks. Except to the extent that refiners elect to phase-out MTBE early, a delay in the phase out would result in another year of contamination at the present level.

K. What is the Cost of the Proposed Amendments?

Delaying the phase-out of MTBE by one year may impact a number of stakeholders. California motorists, MTBE producers and the Highway Trust Fund are expected to benefit from the delay. Ethanol producers and others who have made investments may incur some costs. Also, water districts could incur costs that would result from additional contamination from continued use of MTBE. This impact would be reduced to the extent that producers of CaRFG elect to remove MTBE early.

The proposed amendments will allow CaRFG2 to be produced for one additional year, thus allowing refiners, product pipeline companies, and others additional time to modify their facilities as needed to make CaRFG3 without risking disruptions in gasoline supply and the resulting increases in cost to the public. The benefit to California motorists of avoided price spikes could be 30 million dollars a day for the duration of the supply problem.

Other stakeholders that could benefit from the delay include MTBE producers and the federal Highway Trust Fund. MTBE producers may continue to supply MTBE to California for up to the proposed additional year. The amount of this benefit will depend on decisions of refiners to continue to use MTBE to produce CaRFG or to elect to use ethanol early. Currently more than 80 percent of California's MTBE demand is met through imports from foreign and domestic sources.

Gasoline blended with ethanol receives a \$0.53 federal excise tax break for each gallon of ethanol used. This means that, the amount of money sent to the federal Highway Account from California will be decreased to the extent MTBE removed and ethanol in used. Delaying the phase-out of MTBE by one year means that some portion of this decline in revenue will be temporarily avoided.

Delaying the phase-out of MTBE means that refiners and product pipeline companies that invested capital earlier than would be required, may experience a delay in recovering their capital investment. This cost only applies to those companies who have completed the conversion and do not elect to phase out MTBE early. Those companies that have not completed the conversion can take advantage of the proposed delay.

Delaying the phase-out of MTBE by one year means that ethanol demand in California during 2003 may be significantly less than originally anticipated, resulting in excess capacity for ethanol producers. This overbuild of capacity may mean a temporary drop in profits during 2003 for ethanol producers but this trend should be reversed once MTBE is phased out of use in the entire State by 2004. Also, this is contingent upon the availability of other markets.

Delaying the phase-out of MTBE for another year may result in a few additional public water wells and leaking underground storage tanks (UST) sites that must be remediated for the presence of MTBE. The California State Water Resources Control Board estimates that the cost of replacing public water wells will range from 200,000 dollars to 1 million dollars per well, while the cost of cleanup of MTBE contaminated sites could range from 250,000 dollars to 3 million dollars per site depending on the extent of the contamination.

II. RECOMMENDATIONS.

The staff recommends that the Board adopt the proposed amendments to the California reformulated gasoline regulations, as contained in Appendix A. These amendments will change the effective dates in the CaRFG3 regulation to provide a one-year extension of the phase-out date for MTBE and other oxygenates other than ethanol.

THIS PAGE INTENTIONALLY LEFT BLANK

III. REFORMULATED GASOLINE PROGRAMS

The extensive use of MTBE in California gasoline at this time is largely the result of requirements of the Federal Clean Air Act Amendments for federal reformulated gasoline that contains oxygen year round and for state administered oxygenated gasoline programs in the wintertime. Neither the Clean Air Act nor the regulations adopted to implement the Act specify which oxygenate must be used. This choice is left to the producers. MTBE and ethanol are the two principal oxygenates used to meet both the federal RFG and wintertime oxygen content requirements. In California, MTBE became the refiners' oxygenate of choice because of its blending attributes which include its high octane rating, the fact that it dilutes undesirable gasoline components such as benzene, mixes well with gasoline, and is easily distributed in the state's pipeline system. Since 1995, most of the state's gasoline has contained about 11 percent MTBE.

A. Federal Reformulated Gasoline

The federal Clean Air Act (CAA) Amendments of 1990 directed the U.S. EPA to adopt federal RFG regulations, applicable starting January 1995. These regulations require the year-round use of RFG containing at least 2.0 weight percent oxygen in on-road vehicles in severe and extreme non-attainment areas for ozone. By the end of 2002, the federal RFG requirements will apply in San Diego County, the greater Los Angeles area (Los Angeles, Orange and Ventura Counties, and parts of Riverside and San Bernardino Counties), the greater Sacramento area (Sacramento County and parts of Yolo, Solano, Sutter, Placer, and El Dorado Counties), and the San Joaquin Valley Air Basin. Together, these areas account for about 80 percent of the gasoline sold in California.

B. California Wintertime Oxygen Requirement

In addition to the federal RFG program, the CAA amendments also required states to establish wintertime oxygenated fuel programs. This requirement generally applied to areas of the country that were in non-attainment of the National Ambient Air Quality Standard (NAAQS) for CO. Ambient CO concentrations are highest in the winter.

In 1991, ARB adopted a wintertime oxygenate requirement for gasoline to comply with federal law. Starting with the winter of 1992-1993, all California gasoline sold during the winter was required to contain 1.8 to 2.2 volume percent oxygen. The wintertime program was also incorporated into the Phase 2 CaRFG (CaRFG2) regulations effective in 1996.

Initially, the wintertime oxygenate requirement applied statewide because 80 percent of gasoline was consumed in CO non-attainment areas, and the distribution system could not efficiently accommodate oxygenated and non-oxygenated gasoline. However, as a result of its fuels and mobile source emissions reduction programs, California no longer has exceedances of either the State or federal ambient CO standard, except in a limited region in the Los Angeles area and in Calexico in Imperial County.

In 1998, ARB ended the wintertime oxygenate requirement for gasoline sold in areas that had demonstrated attainment of the ambient CO standard. At that time, the ARB continued the wintertime oxygen requirements until January 31, 2000 for the Lake Tahoe Air Basin and Fresno and Madera counties. In 1999, the ARB approved regulations rescinding the wintertime

oxygenate requirement in the Lake Tahoe Air Basin after January 1999, to facilitate the removal of MTBE from the gasoline sold in the Lake Tahoe region. The wintertime oxygen requirements remain unchanged in Los Angeles, Orange, Riverside, San Bernardino, Ventura, and Imperial counties.

C. California’s Phase 2 Reformulated Gasoline Program

In November 1991, the Board approved the CaRFG2 regulations which became applicable beginning March 1, 1996. These regulations established standards for the following eight gasoline properties:

Reid vapor pressure (RVP)	the 50 percent distillation temperature (T50)
Sulfur	the 90 percent distillation temperature (T90)
Benzene	Olefin
Aromatic hydrocarbons	Oxygen

The CaRFG2 standards include three sets of limits. There are upper or “cap” limits for the eight regulated properties that apply to all gasoline throughout the distribution and marketing system. The “flat” and/or “averaging” limits apply to each batch of gasoline supplied from the production or import facility.

With the exception of RVP and oxygen content, the regulations provide producers and importers with three compliance options when supplying gasoline from the production or import facility. First, producers and importers may choose to comply with a flat limit applicable to all the gasoline, or they can meet a more stringent averaging limit. The averaging limits allow some flexibility as some batches of gasoline can be above or below the average specifications. There is no averaging option for RVP and oxygen standards.

The second compliance option allows a producer or importer to use the “CaRFG2 Predictive Model” to specify alternative flat and averaging limits that may be optimal for a particular refiner. The Predictive Model is a set of mathematical equations that relate emissions rates of exhaust hydrocarbons, NO_x, and potency weighted toxics for four toxic air contaminants (benzene, 1,3-butadiene, formaldehyde, and acetaldehyde) to the values of the eight regulated gasoline properties. An alternative gasoline formulation is acceptable if emissions of hydrocarbons, NO_x, and potency-weighted toxics resulting from this formulation are no greater than emissions from gasoline having the basic flat or averaging limits set forth in the CaRFG2 standards. The third compliance option allows certification of alternative formulations based on the results of vehicle emissions testing. Currently, most of the gasoline sold in California complies with the CaRFG2 regulations through the use of the Predictive Model.

Oxygen content is one of the gasoline properties used in the CaRFG2 Predictive Model. Oxygen is added to gasoline by blending in an oxygenate such as MTBE. The CaRFG2 regulations require a minimum oxygen content of 1.8 percent by weight, but a refiner may use the Predictive Model to reduce or eliminate oxygen, except when subject to wintertime oxygen requirements or the federal RFG requirements. Because of its blending characteristics MTBE became the oxygenate of choice by refiners producing CaRFG2.

IV. BAN OF THE USE OF MTBE IN CALIFORNIA

This section presents the background information relating to the CaRFG3 regulations and the phase-out of MTBE from gasoline.

A. Concern with the Use of MTBE

The widespread use of MTBE and leaks and spills associated with the distribution of gasoline have resulted in detectable MTBE levels in a number of drinking water wells and surface water resources. Even relatively low levels of MTBE can give drinking water an unpleasant taste and odor that renders the drinking water unusable.

The main concern with the continued use of MTBE is the potential to contaminate California's groundwater, surface water, and drinking water systems. MTBE is very soluble in water and will transfer to groundwater faster, and will travel farther and more easily than other gasoline constituents such as benzene when gasoline leaks from underground storage tanks or pipelines. Lawrence Livermore National Laboratory data show that MTBE is likely present at over 10,000 underground fuel tank sites in the state. While underground storage tanks were ordered replaced or upgraded by December 22, 1998, even upgraded storage tanks are not leak-proof and leaks from upgraded gasoline storage tanks in the state are expected in the future. However, these leaks should occur much less frequently and be much less severe than what was experienced prior to the upgrade program. Also, spillage during transfers of gasoline will continue to occur as a result of accidents and equipment failure.

The California MTBE Public Health and Environmental Protection Act of 1997 directed the University of California to conduct research on the effects of MTBE. The legislation also required the Governor to take appropriate action based on the U.C. findings and information from public hearings conducted on the U.C. report. The University of California report was sent to the Governor in November 1998, and was peer reviewed by the Agency for Toxic Substances and Disease Registry, the United States Geological Survey, and other nationally recognized experts. After completion of the University of California report, two public hearings were held in February 1999. The Governor then issued Executive Order D-5-99 based on the UC report, the peer review comments, and information from the public hearings,

B. The Governor's Executive Order D-5-99

On March 25, 1999, Governor Davis issued Executive Order D-5-99 in which he found that "on balance, there is significant risk to the environment from using MTBE in gasoline in California." Executive Order D-5-99 also directed specific action to be taken.

The Executive Order was implemented by State agencies including the ARB, the State Water Resources Control Board (SWRCB), Office of Environmental Health Hazard Assessment (OEHHA), California Energy Commission (CEC), and the Department of Health Services (DHS). The governor's Executive Order called for a number of steps to be taken to prohibit the use of MTBE, to evaluate the appropriate phase out period, and to investigate the environmental effects of alternative oxygenates. The Executive Order directed the CEC to develop a timetable

for removing MTBE from gasoline at the earliest possible date, but not later than December 31, 2002. The Governor further directed that steps be taken immediately to significantly reduce MTBE usage in the Lake Tahoe area and to require the labeling of gasoline pumps where CaRFG with MTBE is dispensed.

C. CEC's Response to the Directive of Executive Order D-5-99

The CEC determined that December 31, 2002 was the earliest feasible date that MTBE could be removed from RFG and that would comply with the Executive Order's directive to ensure adequate supply and availability of gasoline for California consumers. The CEC adopted their findings in the report, "Commission Findings: Timetable for the phase out of MTBE from California's Gasoline Supply" on June 28, 1999. A copy of the CEC analysis of the appropriate timetable to phase out the use of MTBE is in Appendix C.

The report identified several factors that would determine the feasibility of the December 31, 2002 phase-out date. The report described the refinery modifications needed to remove MTBE from the gasoline supply in California, including modifications to the gasoline distribution infrastructure. It also addressed the issues of the adequacy of ethanol supplies, project timelines, and other barriers to removing MTBE from gasoline prior to December 31, 2002. The CEC report (Appendix C) includes their findings on the factors that could affect the timetable for the phase out of MTBE.

D. California's Phase 3 Gasoline Standards

In response to Governor Davis's March 25, 1999 Executive Order D-5-99, the Board approved the CaRFG3 regulations at a hearing on December 9, 1999. The regulations included major amendments to the CaRFG2 regulations. The CaRFG3 regulations prohibit California gasoline produced with MTBE starting December 31, 2002, establish CaRFG3 standards applicable December 31 2002, establish a CaRFG3 Predictive Model, and make various other changes. The CaRFG3 regulations modified specifications for 5 of the 8 gasoline properties regulated by CaRFG2. The olefin standard did not change. Allowable levels of sulfur and benzene were reduced. At the same time, the aromatic hydrocarbon cap limit was increased and the flat limits and averaging limits for the two distillation temperature standards (T50 and T90) were relaxed. These changes were designed to comply with the Executive Order directive to provide additional flexibility in lowering or removing the oxygen content requirement while maintaining current emissions and air quality benefits. A copy of the Executive Order is in Appendix B.

a) Early Compliance with the CaRFG3 Standards

The CaRFG3 regulations include provisions allowing refiners to elect to produce gasoline subject to the Phase 3 RFG standards prior to the mandatory MTBE phase-out deadline of December 31, 2002. The regulations allow early compliance with the CaRFG3 standards by any producer or importer once one producer or importer has demonstrated to the satisfaction of the Executive Officer intent and ability to produce or import substantial quantities of one or more grades of gasoline complying with the CaRFG3 standards. On March 19, 2001, a refiner submitted a request for early CaRFG3 opt-in. On April 19, 2001, the Executive Officer issued Executive Order G-001-007, granting the refiner's request.

A refiner that elects to produce batches of CaRFG3 early is subject to the prohibitions on the use of MTBE and oxygenates other than ethanol in California gasoline that apply on December 31, 2002. Due to the need to maintain the fungibility of gasoline in the distribution system, the Executive Officer's approval of the early opt-in request automatically triggered changes in the CaRFG2 cap limits for RVP and aromatics to 7.20 psi and 35.0 volume percent respectively for gasoline downstream of the production or import facility.

b) MTBE Prohibitions of California's Phase 3 Gasoline Regulations

The CaRFG3 regulations ban gasoline produced with the use of MTBE, for all California gasoline supplied from production and import facilities starting December 31, 2002. The prohibition will be phased-in downstream from refineries according to a schedule similar to the one used to phase-in CaRFG2 in 1996. The regulations also establish a three-stage schedule for reducing allowable residual levels of MTBE to a final limit of 0.05 volume percent. Table 1 summarizes the current MTBE prohibitions of the CaRFG3 regulations, showing the MTBE levels that must not be exceeded during each phase of the timetable.

**Table 1
Current Allowable Residual MTBE Levels**

Allowable Residual MTBE Levels (volume percent)	Effective Date
0.30	Starting December 31, 2002
0.15	Starting December 31, 2003
0.05	Starting December 31, 2004

c) Prohibition of Oxygenates Other Than MTBE or Ethanol

The CaRFG3 regulations place a conditional ban, starting December 31, 2002, on the use of oxygenates other than MTBE or ethanol to produce California gasoline. Such oxygenates may not be used to produce California gasoline, unless a multimedia evaluation of the use of the oxygenate in California gasoline has been conducted, and the California Environmental Policy Council has determined that its use will not cause a significant adverse impact on public health or the environment. The current regulations do not specify residual limits for these oxygenates.

E. Local Regulations

On March 28, 2000, the Board of Supervisors of the County of El Dorado adopted an amendment to Title 8 of the El Dorado County Code to ban the sale of fuel containing MTBE in the Lake Tahoe Basin within El Dorado County. The ban became effective thirty days following adoption.

Some local agencies are implementing programs to restrict the use of MTBE and monitor the impact of MTBE on water resources. For example, since June 1994, the Los Angeles

Department of Water and Power has sampled for MTBE as part of its routine well-water monitoring. Also, the East Bay Municipal Utility District (EBMUD) allows only four cycle engines using MTBE-free gasoline in the San Pablo Reservoir. The EBMUD also proposes to ban all motor boat engines that discharge any fuel pollutants effective January 2003.

F. Actions by Other States

The use of MTBE in gasoline in other states has resulted in contamination of drinking water and ground water resources. These states have acted to protect their water supplies against contamination from MTBE by either substantially restricting or banning the use, sale or importation of fuels containing MTBE. Table 2 is a summary of the actions taken by 13 states to prohibit or reduce MTBE use in gasoline.

No state actually banned the use of MTBE prior to 1999. States either provided economic incentives to use ethanol or set oxygen specifications (3.5 weight percent) that could not be met with the use of MTBE.

Table 2

**STATES OUTSIDE OF CALIFORNIA PROHIBITING OR REDUCING
THE USE OF MTBE¹**

STATE	MTBE ACTION	DATE
Arizona	Ban	June 30, 2003 (180 days after CA)
Colorado	Phase out	May 1, 2002
Connecticut	Phase out	October 1, 2003
Illinois	Ban	July 24, 2004
Indiana	Ban	July 23, 2004
Iowa	Prohibit sale of gasoline with MTBE >2 volume %	2000
Kansas	Ban	July 1, 2004
Michigan	Prohibit use of MTBE	June 1, 2003
Minnesota	Prohibit sale of gasoline sale with MTBE >0.3 volume %	July 1, 2005
Nebraska	Prohibit sale of petroleum product with MTBE >1 volume %	2000
New York	Phase out	January 1, 2004
South Dakota	Prohibit sale of gasoline with MTBE >2 volume %	2000
Washington	Ban	December 31, 2003

- 1 NPRAonline: <http://www.npradc.org/environmental/green-rm/archive/2001/5-11-01.html>
Governor's Ethanol Coalition: www.ethanol-gec.org/summer2000/sum0004.htm
Illinois Corn: www.ilcorn.org/update/html

THIS PAGE INTENTIONALLY LEFT BLANK

V. RATIONALE FOR POSTPONING THE BAN ON THE USE OF MTBE IN CALIFORNIA

This section describes the rationale for postponing by one year the prohibition on using MTBE and other specified oxygenates in California gasoline and other related requirements for CaRFG3.

A. CEC Commissioned Study to Evaluate the Impact of the MTBE Phase-out

Both the ARB and CEC staffs have monitored the implementation of the CaRFG3 regulations. Since the CEC issued its June 1999 report in support of the feasibility of the ban of MTBE, new issues have been identified concerning the transition to MTBE-free gasoline by the December 31, 2002 deadline. A new CEC commissioned study evaluated the adequacy of California's gasoline supply and infrastructure to meet demand after MTBE is removed from California gasoline. The contractor reported their findings in the report, "MTBE phase out in California. California Energy Commission Consultant Report, Publication No. P600-02-008CR" dated March 2002. The study was primarily concerned with the availability and supply of gasoline and blending components that would be needed to make up for the anticipated net volume losses that result when ethanol is substituted for MTBE in the State's gasoline pool.

The study included the following findings:

- Implementation of the CaRFG3 standards as scheduled by January 1, 2003, with replacement by ethanol, could result in a gasoline supply shortfall of 5 to 10%. Such a shortfall could result in price levels that are 50 to 100% higher than normal.
- Large scale ethanol movements will be required to meet California's ethanol requirements which are estimated to be 750 to 900 million gallons annually if MTBE is removed while the federal oxygenate requirement is still in effect. The logistics of moving such large volumes of ethanol have not been resolved, and significant operational problems should be anticipated in areas such as rail coordination, tank car unloading, marine receipts, and distribution to gasoline truck terminals.
- A waiver from the federal requirement for oxygenates would improve flexibility for refiners after MTBE is phased out. The waiver would make the system less vulnerable to potential ethanol logistic problems.

B. Other Information

In addition to the CEC commissioned study, staffs of the ARB and CEC have analyzed the refiners' compliance plans and discussed the plans individually with the respective companies. These plans are required to be submitted by the CaRFG3 regulations. From this information, it appears that most capital modifications potentially could be completed on time for a December 31, 2002 phase-out of MTBE. However, the modifications would be completed just in time. There would be no time available to test the systems and take care of any problems that might be discovered, nor would there be time to fully develop contingency plans.

Also, only very limited information is available concerning how producers would respond to major incidents such as the loss of major processing units in refineries or delays in the distribution of ethanol within the state. With the use of ethanol, a delay in the delivery of ethanol to a terminal means that the terminal would have ample blendstocks that make up 94 percent of the volume of gasoline but no finished gasoline available for distribution to service stations. This is unlike CaRFG2 with MTBE, where all gasoline that arrives at a terminal can be delivered to service stations because the MTBE is typically added as part of the refining and blending process.

With only limited time to address these issues, the probability of substantial supply problems occurring is very high. Any significant supply problem could translate to increases in costs to consumers. Examples of this can be found in California in 1996 and 1999 and in the Chicago area (a federal RFG area) in 2000. Based on data from these time periods, it can be estimated that any significant reduction in supply could result in prices increasing up to 50 percent. For California, consuming about 40,000,000 gallons of gasoline a day, a supply disruption could mean consumers having to spend, conservatively, an extra 30,000,000 dollars per day for the duration of the supply disruption.

C. Oxygenate Waiver Issue

When the governor issued the Executive Order D-5-99 for the removal of MTBE, he identified the waiver from the federal RFG year-round oxygen requirement as an important element. Such a waiver would allow producers of CaRFG flexibility to minimize cost and increase production and flexibility with an actual increase in air quality benefits. A waiver would also enable refiners to respond more effectively to problems with ethanol supplies and refinery equipment.

In order to facilitate the removal of MTBE from California gasoline, on April 12, 1999, Governor Davis requested that the U.S. EPA grant California a waiver of the federal Clean Air Act requirement that gasoline sold in federal RFG areas contain two percent oxygen, year-round. With the federal oxygenate requirement in place, MTBE cannot be removed until there is sufficient production capability of ethanol in producing states, the ethanol infrastructure has been put into place and sufficient ethanol reserves built up within the state.

In 1999, both the National Research Council and the U.S. EPA's Blue Ribbon Panel on Oxygenate Use in Gasoline found that the Clean Air Act oxygen requirement should be removed for California. Between April 1999 and February 2000 the ARB staff supplied information in support of a waiver to the U.S. EPA staff.

On June 12, 2001, the U.S. EPA denied California's request for a waiver from the federal oxygen requirement based on its assessment that California had not met its burden of proof in making the required demonstration that maintaining the oxygen requirement would interfere with attainment of the national ambient air quality standard for ozone. It should be noted that the U.S. EPA did conclude that a waiver of the federal oxygenate requirement would result in significantly lower NOx emissions and a reduction in the cost of phasing out MTBE from California gasoline. On August 10, 2001, Governor Davis and the ARB filed a lawsuit challenging the U.S. EPA's denial of the waiver request. The lawsuit is currently pending.

Without a waiver of the federal oxygen requirement, California refiners will not have the additional flexibility to produce non-MTBE California reformulated gasoline more efficiently and at less cost. Flexibility that would lead to less volatility in gasoline prices was lost. Based on CEC cost estimates, retaining the oxygenate mandate will add on average about 3 cents per gallon to the cost of gasoline for California's consumers during times when ethanol supplies were generally adequate to meet demand. This cost would be much greater during periods when ethanol supplies were less than that needed to fully meet demand.

D. Underground Storage Tank Program

Senate Bill 989 (SB 989) (Stats. 1999, Ch. 812) – approved in California in October, 1999 – provides for a statewide program to continue to assess the existing problems of MTBE in groundwater and to provide for state and local programs to remediate the impacts in groundwater. Specifically, there are provisions for the study and assessment of MTBE leaks in groundwater from underground storage tanks (USTs), requirements for tank leak containment, annual UST inspections requirements, enforcement provisions related to UST and MTBE related leaks into groundwater, requirements for UST leak detection systems and monitoring, and statewide funding for UST petroleum leaks in groundwater remediation and cleanups. Further, there are SB 989 and other state and local provisions related to surface spills, underground pipelines, above-ground storage tanks, marinas, watercraft, and vehicle accidents. These state and local programs will continue over the next year to identify, remediate, prevent, and fund the cleanup of leaks related to petroleum USTs and other impacts related to MTBE leaks in water.

In 1998, when the University of California and Lawrence Livermore National Laboratory examined the problem of MTBE in ground water at service stations with underground liquid leaks, they estimated MTBE present at over 10,000 sites. This contamination has resulted in the closing of approximately 60 drinking water wells. Since that time, improvements in the underground storage tank program have been implemented.

UST facilities continue to represent the greatest potential source of future MTBE releases to water. The integrity of the UST systems in California has improved dramatically during recent years as old bare-steel single-walled tanks have been upgraded with corrosion protection and leak detection systems, or replaced with new double-contained systems. Preliminary results of field tests currently being conducted by the SWRCB indicate that this upgrade/replacement program has been very successful in reducing liquid releases, but approximately two out of three UST systems now in operation may be releasing gasoline vapors into the subsurface. This could create a localized source of groundwater contamination.

The SWRCB commissioned a tracer study to quantify the probability and environmental significance of releases from petroleum underground storage tank (UST) systems meeting the 1998 upgrade requirements. Randomly selected UST systems were tested using a sensitive commercial leak detection method. The largest tracer releases detected were estimated to have been associated with gasoline releases of 0.4 gallons per day (liquid equivalent), while the vast majority of releases are estimated to have been smaller than 0.04 gallons per day. None of the releases observed in the study would likely have been detected by leak detection systems meeting current performance standards of 0.1 gallons per hour (2.4 gallons per day). The results are a significant improvement over a similar study performed before the implementation of the

1998 upgrade requirements that indicated that 35 percent of UST systems nationwide exhibited leak rates above 2.4 gallons per day. The precise impact of the numerous small releases observed in this study on groundwater quality should be confirmed with more comprehensive modeling studies. A report documenting the findings of this study should be delivered to the SWRCB in June 2002.

Of greater risk to water quality than the vapor releases discussed above, are potential liquid MTBE releases from USTs. In particular, slow liquid releases from the remaining 5,000 or so single-walled USTs may be below the threshold of detection for monitoring devices. The leak detection rate is typically 0.2 gallons per hour for tanks and 0.1 gallons per hour for product piping. Annual releases of more than 1000 gallons of gasoline (containing more than 100 gallons of MTBE) could occur at an individual site without being detected from these single-walled systems and continue to go undetected.

Other sources of MTBE releases which can impact the water environment include: deposition from air, surface spills, underground pipelines, above-ground storage tanks, marinas, watercraft, and vehicle accidents. The impact from these sources cannot be estimated at this time.

E. The Governor's Executive Order D-52-02

On March 14, 2002, Governor Davis issued Executive Order D-52-02 (Appendix D), which directed the ARB to take the necessary actions, by July 31, 2002, to “postpone for one year the prohibitions of the use of MTBE and other specified oxygenates in California gasoline, and the related requirements for California Phase 3 reformulated gasoline.” The Governor found that it was not possible to eliminate use of MTBE on January 1, 2003 without significantly risking disruption of the availability of gasoline in California. Such disruptions would substantially increase prices, harm California's economy and impose an unjustified burden on motorists.

The Executive Order includes directives to the ARB, CEC, SWRCB, and DHS to ensure the continuation of current efforts to eliminate the negative impacts of MTBE on the environment. The ARB and CEC were directed to work with the petroleum industry to ensure that MTBE-free gasoline meeting California standards continues to be supplied to the Lake Tahoe region and any other areas of California currently receiving MTBE-free gasoline. In addition, the SWRCB and DHS were directed to work with California drinking water providers to ensure that the providers continue to take all appropriate measures to prevent discharge of MTBE into surface water and reservoirs.

VI. PROPOSED AMENDMENTS

This chapter describes the proposed amendments to the CaRFG3 regulations. Staff is proposing amendments to title 13, CCR, section 2261, 2262, 2262.4, 2262.5, 2262.6, 2262.9, and 2266.5 to do the following:

- postpone for one year the prohibition on the use of MTBE in California gasoline,
- postpone for one year the prohibition on the use of non-MTBE ethers and alcohols other than ethanol in California gasoline,
- postpone for one year the imposition of CaRFG3 standards, and
- make various minor amendments.

The text of the proposed amendments is presented in Appendix A.

A. Prohibition of MTBE

The staff is proposing that the Board amend the CaRFG3 gasoline regulations to prohibit the use of MTBE in California gasoline starting December 31, 2003 instead of December 31, 2002 as currently required.

B. Prohibition of non-MTBE Ethers and Alcohols Other than Ethanol

The staff is also proposing that the Board postpone the prohibition of the use of non-MTBE ethers and alcohols other than ethanol in CaRFG3. The proposed amendment would prohibit the use of these oxygenates starting December 31, 2003 instead of December 31, 2002 to comply with the directive of the Governor's Executive Order D-52-02. As is currently the case, the prohibition would apply unless a multimedia evaluation of the use of the oxygenate in California gasoline has been conducted, and the California Environmental Policy Council has determined that such use will not cause a significant adverse impact on public health or the environment.

C. Schedule for Reducing Allowable Residual MTBE Levels

To be consistent with the proposed delay in phasing out the use of MTBE, staff is proposing that the Board adopt a revised schedule for reducing permitted residual levels of MTBE in CaRFG3 after the addition of MTBE is banned. Staff is proposing that the dates in the current schedule be postponed by one year to be consistent with the postponement of the current MTBE phase out date. The proposed amended schedule is summarized in Table 3. During the first year after the amended MTBE phase out date, starting December 31, 2003, California gasoline would be prohibited from containing more than 0.30 volume percent MTBE. This residual limit will be further reduced to 0.15 volume percent MTBE starting December 31, 2004, then to 0.05 volume percent starting December 31, 2005. As stated in the Initial Statement of Reasons for the CaRFG3 regulations, staff will continue to monitor the ability of refiners to meet these limits.

Table 3

Proposed Revisions to the Allowable Residual MTBE Levels

Allowable Residual MTBE Levels (volume percent)	Effective Date
0.30	Starting December 31, 2003
0.15	Starting December 31, 2004
0.05	Starting December 31, 2005

D. Imposition of CaRFG3 Standards

The staff is proposing that the Board postpone the imposition of the CaRFG3 limits for the gasoline properties by one year to be consistent with the proposed one-year postponement of the MTBE phase out deadline. The CaRFG3 limits were necessary to increase a refiner's flexibility in making gasoline without MTBE while preserving the emissions benefits achieved by the CaRFG2 program. With the proposed delay in the imposition of the MTBE prohibition, the imposition of the CaRFG3 standards will not be necessary until the new date at which the MTBE prohibition becomes effective.

The staff is not proposing any changes to the provisions that allow early compliance with the CaRFG3 standards. Under these provisions refiners are allowed to produce gasoline subject to the Phase 3 RFG standards prior to the proposed mandatory MTBE phase-out deadline of December 31, 2003.

E. Other Regulatory Changes

Staff is proposing additional amendments to ensure that the regulations work effectively, provide additional flexibility where feasible, and correct errors. These changes are described in Appendix E. One of the changes would simplify the testing provisions for determining whether a CaRFG complies when ethanol is the oxygenate. These are technical changes to improve the enforceability and consistency of the regulations; therefore the staff does not anticipate any adverse environmental or economic effects associated with the proposed amendments.

F. Consideration of Alternatives

Two alternatives to the proposed one-year postponement of the MTBE phase out from California gasoline are: shortening the postponement period and maintaining the current deadline.

Shortening the Postponement Period A postponement of less than one year was not considered acceptable as this would necessitate the introduction of CaRFG3 gasoline during those months of the year when gasoline consumption is typically high. Therefore, any constraints on the supply and availability of CaRFG3 or ethanol during this time would have significant negative impacts on the availability and cost of gasoline to California consumers. Also, constraints on supply are more likely during this time as the introduction of CaRFG3 would occur during the ozone

control period when the RVP standard applies. This is significant because the addition of ethanol to gasoline increases the RVP of the resulting blend. During the ozone RVP control season, more of the volatile compounds, such as pentanes, have to be removed to accommodate the addition of ethanol without causing a violation of the RVP standards. This has the effect of reducing the available volume of CaRFG3 at the time of maximum consumption. It is preferable for the transition to ethanol to occur during the non-RVP control season, when this is not a factor.

Maintaining the Current Deadline Maintaining the current deadline is not satisfactory as more time is required to address issues concerning the production, transportation, and distribution of CaRFG3 including ethanol. Without these issues resolved there would be a significant risk of disruption of the availability of gasoline that could substantially increase prices, harm California's economy and impose an unjustified burden on California motorists.

THIS PAGE INTENTIONALLY LEFT BLANK

VII. ENVIRONMENTAL IMPACTS OF THE PROPOSED AMENDMENTS TO THE CARFG3 REGULATIONS

This chapter presents a summary of the analysis of the environmental effects of the proposed amendments. This analysis was prepared in consultation with SWRCB staff.

The current CaRFG3 regulation bans the addition of MTBE to gasoline after December 31, 2002 and restricts the use of an alternative oxygenate unless that oxygenate has undergone a multimedia review and been found acceptable by the California Environmental Policy Council (CEPC). This analysis will address the impact of the proposed amendments to postpone the imposition of the CaRFG3 standards and the prohibition of MTBE.

A. Effects of the Proposed CaRFG3 Amendments on Air Quality

1. Emissions Effects of Postponing the Implementation of the CaRFG3 Regulations

In the Final Statement of Reasons (FSOR) for the CaRFG3 Regulations, the ARB staff determined the expected emission benefits associated with the CaRFG3 regulations. This was to verify whether the CaRFG3 specifications would preserve the emissions benefits of the CaRFG2 program. The comparison demonstrated that gasoline expected to be produced to meet the CaRFG3 specifications would provide a small reduction in emissions when compared to gasoline produced to meet the CaRFG2 specifications. Table 4 presents the expected relative benefits of CaRFG3 program over the CaRFG2 program. The proposed amendments would maintain the benefits associated with the CaRFG2 program. Therefore, delaying the implementation of the CaRFG3 regulations by one year would only postpone the emission reductions achieved by the CaRFG3 regulations by one year, except to the extent that refiners elect to phase-out the use of MTBE early and produce CaRFG3.

Table 4. Benefits of CaRFG3 Relative to CaRFG2

Pollutant	Percent Change	Tons Per Day
Oxides of Nitrogen	-2.3	19
Exhaust Hydrocarbons	-0.1	Less than 1
Potency-Weighted Toxics	-7.2	N/A

2. Emissions Effects Associated with Commingling

When a gasoline containing ethanol is mixed with a non-ethanol gasoline, there is an increase in evaporative emissions. This effect is due to the RVP increase that occurs when ethanol is added to a non-ethanol gasoline. The federal RFG regulations prohibit the mixing of ethanol blended gasoline and non-ethanol blended gasoline in the distribution and marketing system from January 1 through September 15 to prevent RVP increases during the ozone season associated with commingling. However, neither the federal nor the CaRFG3 regulations restrict the mixing of ethanol-blended gasoline with non-ethanol-blended gasoline in the vehicle fuel tank. This can occur as consumers purchase different types of fuel when they fuel their vehicles.

To date, commingling has been a relatively small issue in California since a very large majority of CaRFG has been made with MTBE or without oxygenate and relatively little ethanol has been used. However, the proposed one-year delay could result in an emissions impact depending on the extent to which refiners elect to phase-out MTBE early. The commingling or mixing of a non-ethanol-blended fuel and an ethanol-blended fuel in vehicle tanks could increase, at least in areas where gasolines containing ethanol and non-oxygenated gasolines are both marketed.

However, an increase in commingling is not expected to result in an increase in evaporative emissions. It is expected that refiners electing to produce CaRFG with ethanol will take advantage of the flexibility provided by the CaRFG3 compliance option. Also, to compensate for the anticipated increase in evaporative emissions due to commingling, the CaRFG3 regulations reduced the ozone season RVP flat limit from 7.0 psi to 6.9 psi for gasoline produced using the evaporative element of the revised CaRFG3 Predictive Model. Due to uncertainty in the potential commingling impacts, the Board, in approving the CaRFG3 regulations, directed staff to further evaluate the magnitude of the potential real-world commingling impacts.

In 2001, staff performed both a field study and simulation modeling to carry out the Board's directive to assess the likely magnitude of commingling impacts associated with the switch to CaRFG3. Based on the field study and simulation model, staff estimated that the potential RVP increase due to commingling is less than 0.1 psi. The 0.1 psi RVP reduction provided for in the CaRFG3 Predictive Model adequately protects against an increase in evaporative emissions from gasoline powered motor vehicles due to commingling. Appendix F provides details of the staff's analysis.

3. Emissions Effects Associated with Permeation

The effect on permeation losses of blending ethanol with gasoline is an issue of concern. Permeation refers to the migration of organic molecules through any of the non-metallic materials used in the vehicle's fuel system. Studies have shown that ethanol preferentially permeates through the "soft" fuel system components used in motor vehicles when compared to other components of gasoline. One effect of the postponement of the imposition of the MTBE ban is the postponement of the large scale introduction of ethanol into California gasoline. The effect of the proposed amendment on the magnitude of the permeation emissions impact would depend on the extent to which refiners elect to phase out MTBE early and switch to the use of ethanol. However, the impact will be less than if the current date for the phase-out of MTBE is maintained.

The ethanol permeation effect can occur in any engine fuel system or fuel storage containers constructed of non-metallic materials similar to those found in vehicle fuel systems.

In June 2001, it was concluded that the use of ethanol in California gasoline would tend to increase evaporative emissions through the permeation of ethanol through the soft fuel system components. This conclusion was based on data gathered by a major vehicle manufacturer to estimate the emissions effect of gasoline containing ethanol on fuel systems. A delay in the phase out of MTBE will postpone this increase in emissions in so far as individual refiners chose not to remove MTBE and not opt in to the CaRFG3 program early.

The ARB is co-funding a Coordinating Research Council (CRC) research project to investigate the permeation emissions associated with ethanol in California gasoline. The results of this study should be available in early 2003.

B. Effects of the Proposed CaRFG3 Amendments on Water Quality

In very low concentrations, MTBE imparts an unpleasant taste and odor to water, rendering it unsuitable for drinking and other beneficial uses. Unlike petroleum-based components in fuel, MTBE moves rapidly through the soil into groundwater, is more persistent in the environment, and is more difficult to clean up. According to the DHS, MTBE has been measured above the state's 5 parts per billion drinking water standard for taste and odor in 41 (out of 9,905 sources sampled) surface and groundwater drinking water sources in the state. The fuel additive has forced the closure of public and private water supply wells in numerous communities, including Santa Monica, South Lake Tahoe, Sacramento County, and Cambria. Underground storage tanks (UST) have been the primary source of MTBE pollution. MTBE has been detected in groundwater at more than 4,600 UST sites.

Petroleum is stored at approximately 22,000 UST facilities in California. These facilities continue to represent the greatest potential source of future MTBE releases to water. The integrity of the UST systems in California has improved dramatically during recent years as old bare-steel single-walled tanks have been upgraded with corrosion protection and leak detection systems or replaced with new double-contained systems. Preliminary results of field tests currently being conducted by the SWRCB indicate that this upgrade/replacement program has been very successful in reducing liquid releases, but approximately two out of three UST systems now in operation are releasing gasoline vapors into the subsurface, creating a localized groundwater pollution source. The amount of MTBE released per year in gasoline vapors can not be precisely determined, but estimates provided by the SWRCB suggest that it is in the range of 3 to 30 gallons (as liquid equivalent) per day, statewide. Extending those estimates for one year would suggest that the equivalent of 1,000 to 10,000 gallons of liquid MTBE may be released from USTs in the vapor phase. This is equivalent to an average release per facility of between 0.4 and 4 gallons per year of gasoline containing MTBE at 10 volume percent. This is equivalent to 0.04 to 0.4 gallons per year of MTBE per facility.

Of greater risk to water quality than the vapor releases discussed above are potential liquid MTBE releases from USTs. In particular, slow liquid releases from the remaining 5,000 or so single-walled USTs may be below the threshold of detection for monitoring devices. The leak detection rate is typically 0.2 gallons per hour for tanks and 0.1 gallons per hour for product piping. Annual releases of more than 1000 gallons of gasoline (containing more than 100 gallons of MTBE) could occur at an individual site without being detected from these single-walled systems and continue to go undetected.

Other sources of MTBE releases which can impact the water environment include: deposition from air, surface spills, underground pipelines, above-ground storage tanks, marinas, watercraft, and vehicle accidents. The impact from these sources cannot be estimated.

A one-year extension to complete the phase-out of MTBE from gasoline could result in an incremental, but difficult to measure, increase in the water quality impacts highlighted above. Continued use of MTBE as a fuel oxygenate for an additional year could extend the risk of further closures of public drinking water supply. However, for the reasons discussed above, the expected impacts are expected to be small in comparison to the existing contamination.

C. Effects of the Proposed Amendments on Greenhouse Gas Emissions

The proposal to postpone for one year the prohibitions of the use of MTBE and other specified oxygenates in California gasoline, and the related requirements for CaRFG3, should result in no significant increase or decrease in greenhouse gas emissions over what would occur without the postponement.

D. Effects of the Proposed CaRFG3 Amendments on the State Implementation Plan

The 1994 SIP for ozone is California's master plan for achieving the federal ozone standard in six areas of the state by 2010. The SIP includes state measures to control emissions from motor vehicles and fuels, consumer products and pesticide usage, local measures for stationary and area sources, and federal measures for sources under exclusive or practical federal control. U.S. EPA approved the 1994 SIP in 1996. The South Coast Air Quality Management District revised its part of the Ozone SIP in 1997 and again in 1999. U.S. EPA approved the South Coast's 1999 Ozone SIP revision in 2000.

As ARB has implemented the SIP over the last eight years, some measures have delivered more reductions than anticipated, while other measures have delivered fewer reductions due to technical or economic concerns. In some cases, measures not originally envisioned in the 1994 SIP are providing benefits that help meet the SIP emission reduction obligations. The CaRFG3 regulation is one of the measures not originally included in the 1994 SIP that is providing needed emission reductions. Because ARB is relying on these reductions to meet its SIP obligations, delays in implementing the regulation have the potential to impact the SIP.

ARB staff is proposing to delay the CaRFG3 requirements by one year, from December 31, 2002 to December 31, 2003. While the small additional emission benefits associated with CaRFG3 gasoline would be lost during the one year delay, there would be no impact on the commitments made in the SIP unless the delay extends past 2004. ARB tracks its progress against its SIP commitments at three-year intervals (known as "milestone years") as well as in the attainment year. For the ozone SIP, milestone years are 2002, 2005, 2008, and 2010 (the South Coast's attainment year). 2005 is the first milestone year for which the emission benefits of CaRFG3 have been credited toward ARB's SIP obligations. Because the CaRFG3 requirements were originally scheduled to go into effect on December 31, 2002, no emission reduction benefits from the regulation could be credited toward meeting ARB's 2002 milestone commitment. Consequently, because the CaRFG3 requirements will be fully implemented and the emission benefits will be fully realized by the end of 2004 under staff's proposal, there will be no SIP impact.

E. Environmental Justice and Neighborhood Impacts

The primary environmental justice and neighborhood impacts of the proposed action would be potential additional contamination of ground water and drinking water. This is expected to be minimal as discussed above. An offsetting consideration is the potential for shortfalls in fuel supply and expected associated increases in fuel costs if the delay is not provided.

The proposed delay of the ban on MTBE will delay the impacts of the implementation of CaRFG3. (These impacts are discussed in Appendix G). The proposal does not change the provisions of the present CaRFG3 regulations that allow refiners to opt to remove MTBE before the phase out deadline. As discussed in Appendix G, actions by refiners to remove MTBE, whether early or by the final compliance date, are subject to full CEQA and permitting requirements.

THIS PAGE INTENTIONALLY LEFT BLANK

VIII. ECONOMIC EFFECTS OF THE PROPOSED AMENDMENTS TO THE CARFG3 REGULATIONS

This chapter presents a summary of the analysis of the economic effects of the proposed amendments. This analysis was prepared in consultation with CEC staff.

A. Evaluation of the Economic Impact of a Delay in the Removal of MTBE from CaRFG

Delaying the phase-out of MTBE by one year may impact a number of stakeholders. California motorists, MTBE producers and the Highway Trust Fund are expected to benefit from the delay. Ethanol producers and others who have made investments may incur some costs. Also, water districts could incur costs that would result from additional contamination from continued use of MTBE. This impact would be reduced to the extent that producers of CaRFG elect to remove MTBE early.

1. Savings for California Motorists

The decision to delay the phase-out of MTBE was primarily predicated on the concern that the use of MTBE could not be eliminated by January 2003 without significantly risking the disruption of the availability of gasoline in California. This would substantially increase prices, harm California's economy and impose an unjustified burden on motorists. If all the elements necessary for a successful transition away from MTBE are not in place, gasoline shortages could develop. Without the additional year directed by Governor Davis, it is likely that various segments of the transportation industry would not have been ready to make the transition away from MTBE, precipitating gasoline supply problems and their associated price spikes. These increases would be expected to be larger than experienced in the past. Previously, supply problems resulted in tightness in supply but not shortages. With an actual shortage in supply, prices could be expected to increase by 50 percent or more. The benefit for California motorists of avoided price spikes could be 30 million dollars a day for the duration of the supply problem.

2. Continued Profitability for MTBE Producers

California currently uses approximately 90 thousand barrels per day of MTBE¹. Some of the California refiners operate small MTBE processing units that supply between 10 and 15 thousand barrels per day (TBD). The remaining demand is met from imports of MTBE from foreign and domestic sources. A delay allows MTBE producers to continue to supply MTBE to California for up to the proposed additional year. The amount will depend on decisions of refiners to continue to use MTBE to produce CaRFG or to elect to use ethanol early.

3. Avoided Loss for Federal Highway Trust Fund

The Federal government collects an excise tax from each gallon of motor vehicle fuel sold. These taxes are generally used to fund highway construction throughout the United States.

¹ Average use by California refiners for 2001 obtained from the *Quarterly Reports Concerning MTBE Use in California Gasoline* located at: <http://www.energy.ca.gov/mtbe/index.html>.

Gasoline is assessed a federal excise tax of 18.4 cents per gallon. The majority of this tax (15.44 cents) is deposited directly into the Highway Account, the source of funding for highway projects. The remaining balance of the tax is used to fund the Mass Transit Account (2.86 cents) and the Leaking Underground Storage Tank Trust Fund (0.1 cents). But when gasoline is blended with ethanol the federal excise tax assessed each gallon of gasoline is decreased \$ 0.53 for each gallon of ethanol used. This means that once MTBE is phased out of use in California, the amount of money sent to the Highway Account from California will decrease. Given an expected ethanol use of about 900 million gallons per year, a delay in the phase-out of MTBE by one year means that this decline in revenue, about \$500 million, could be temporarily avoided. The actual decline in revenue would be determined by the extent that refiners elect to use ethanol and phase-out MTBE.

4. Impact on Refiners and Other Refining Related Industry Participants

California refiners, product pipeline companies and terminal operators have completed a portion of the work necessary to accommodate the phase-out of MTBE. Engineering, material and equipment purchases, and labor costs are some examples of expenses that could have been deferred, but not avoided. Delaying the phase-out of MTBE means that these companies invested capital earlier than would be required, temporarily stranding a portion of their investment capital. As a result, those firms that have already initiated their transition to Phase 3 RFG will incur an opportunity cost equivalent to one year's carrying charge on the prematurely invested capital. It has not been determined what portion of the total project costs for the transportation fuels industry has already been expended, but could have been deferred for a year. This cost only applies to those companies that have completed the conversion and do not elect to phase out MTBE early. At least one major producer has announced that it will proceed with the phase-out of MTBE. Those companies that have not completed the conversion may experience an economic benefit from the postponement of the MTBE phase out. The delay allows the companies time to test their systems and fully develop contingency plans to ensure continued production of gasoline.

If there is a short fall in supply, it is likely that the independent fuel marketers will likely first feel the impact. These independents typically purchase fuel from the unbranded market. Unbranded wholesale fuel is the portion of the refinery production that will be limited if there is a short fall in the market. Much of the major refiners' production goes to contracted marketers; this is the branded market. A one-year postponement of the phase-out of MTBE and the related CaRFG3 regulation will benefit the independent marketers by allowing enough time to complete the infrastructure improvements and contingency provisions needed to ensure adequate supply and availability of gasoline after the MTBE phase-out.

5. Excess Capacity for Ethanol Producers

The ethanol industry responded to the original announcement to phase-out MTBE in California by expanding ethanol production capacity throughout the United States over the last 2 years. A number of new ethanol facilities have been constructed and expansions of existing plants have been completed since 1999. Delaying the phase-out of MTBE by one year means that ethanol demand for California during 2003 may be significantly less than originally anticipated, resulting in excess capacity for ethanol producers. Overbuild of capacity usually results in a decrease in

price for the impacted commodity. This development is good for consumers (motorists) and bad for producers (ethanol industry). The estimated decrease in the 2003 market price for ethanol has not been calculated, due to a number of variables that cannot be quantified. Also, this impact depends on whether other markets for the use of ethanol develop. Other states are expressing interest in using ethanol in gasoline. Ethanol producers may experience a temporary drop in profits during 2003, which should be reversed once MTBE is phased out of use in the entire State by 2004.

B. Economic Effects on Small Business

Government Code section 11346.2(b)(4)(B) requires the ARB to describe any alternatives it has identified that would lessen any adverse impact on small business. In defining small business, Government Code section 11342(h) explicitly excludes refiners from the definition. Also the definition includes only businesses that are independently owned and, if in retail trade, gross less than \$2,000,000 per year. Thus, our analysis of the economic effects on small business is limited to the costs to certain gasoline retailers and jobbers, where a jobber is an individual or business that purchases wholesale gasoline and delivers and sells it to another party, usually a retailer or other end-user. Since the proposed delay continues the existing program, there should not be any increased costs.

A one-year postponement of the phase-out of MTBE and the related CaRFG3 regulation will likely benefit the independent marketers by allowing enough time to complete the infrastructure improvements and contingency provisions needed to ensure adequate supply and availability of gasoline after the MTBE phase-out.

C. Potential Increased Water Contamination Costs

The phase-out of MTBE in California was primarily the result of concern that California surface and groundwater resources would become contaminated from releases of MTBE into the environment due to leaking underground storage tanks. The presence of MTBE has already been detected in surface water resources and wells used as sources of drinking water. Delaying the phase-out of MTBE for another year may result in a few additional public water wells and leaking underground storage tanks (UST) sites that must be remediated for the presence of MTBE. The California State Water Resources Control Board estimates that the cost of replacing public water wells will range from 200,000 dollars to 1 million dollars per well, while the cost of cleanup of MTBE contaminated sites could range from 250,000 dollars to 3 million dollars per site depending on the extent of the contamination.

