

ISSUES CONCERNING THE USE OF MTBE IN REFORMULATED GASOLINE

HEARING BEFORE THE SUBCOMMITTEE ON OVERSIGHT AND INVESTIGATIONS OF THE COMMITTEE ON ENERGY AND COMMERCE HOUSE OF REPRESENTATIVES ONE HUNDRED SEVENTH CONGRESS FIRST SESSION

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ISSUES CONCERNING THE USE OF MTBE IN REFORMULATED GASOLINE

THURSDAY, NOVEMBER 1, 2001

HOUSE OF REPRESENTATIVES,
COMMITTEE ON ENERGY AND COMMERCE,
SUBCOMMITTEE ON OVERSIGHT AND INVESTIGATIONS,
Washington, DC.

The subcommittee met, pursuant to notice, at 2:30 p.m., in room 2322, Rayburn House Office Building, Hon. James C. Greenwood (chairman) presiding.

Members present: Representatives Greenwood, Gillmor, Bass, and Deutsch.

Also present: Representatives Barton and Green.

Staff present: Joseph Stanko, majority counsel; Robert J. Myers, majority counsel; Peter Kielty, legislative clerk; and Michael Goo, minority counsel.

Mr. GREENWOOD. The hearing before the Oversight and Investigations Subcommittee will now come to order. We thank the witnesses for their indulgence, and the Chair recognizes himself for 5 minutes for an opening statement.

The Federal reformulated gasoline program, known by the acronym RFG, was established in the Clean Air Act amendments of 1990. It did not get cleaner burning gas into consumers' gas tanks until 1995.

By law, RFG must be used in certain severe and extreme non-attainment areas. Additionally, a few other States in areas voluntarily use RFG. RFG now makes up roughly 30 percent of the gasoline supply, and most parties agree that its use has reduced levels of ozone, carbon monoxide, and air toxicants.

The Clean Air Act requires that RFG meet a formula, and part of that formula requires that RFG contain 2 percent oxygen by weight. Currently, refineries meet this so-called oxygenate requirement by using one of two additives, MTBE, methyl tertiary-butyl ether, or ethanol.

MTBE has approximately 85 percent of the market and ethanol the remaining 15 percent. Unfortunately, as the Energy and Commerce Committee has heard in voluminous testimony presented during the past few years, the use of MTBE in RFG has an unfortunate environmental result.

Because of MTBE's chemical properties, if released to the environment, it travels quickly through ground and surface water. Accordingly, there has been an increasing number of detections of MTBE in lakes, ground water, and other supplies of drinking water.

In some cases, MTBE makes the water undrinkable due to its pungent odor and taste, and those who have consumed and bathed in MTBE contaminated water worry about the long-range health threat.

A number of my constituents have had first-hand experience with MTBE contamination, and I am pleased that today we will hear from David Kahlenberg, of Doylestown, Pennsylvania, who will relate to us on a personal level the level of difficulties arising from these circumstances, and I thank you, David, for your testimony.

Additionally, the subcommittee will hear testimony updating members on the MTBE issue from the Environmental Protection Agency, the Department of Energy, the United States Geological Survey, the General Accounting Office, the Pennsylvania Department of Environmental Protection, and a number of non-government experts as well.

This hearing is particularly timely because EPA will for the first time testify before Congress on its recent boutique fuels report, which President Bush called for under his national energy plan.

The term, boutique fuel, is used to describe State and local fuel control programs that are different from the Federal programs. Issued last week, EPA's report suggests several short term administrative measures that would address price spikes, and supply issues under the RFG program.

At the same time, the EPA also released a technical document, called a White Paper, which explores several long term solutions to minimize price spikes and address supply issues caused by the proliferation of different gasoline grades under State programs, the so-called boutique fuels issue.

One of the long term solutions that the EPA examined was repealing the oxygenate mandate that requires the use of MTBE. I am eager to hear from Assistant Administrator, Jeffrey Holmstead, on these matters, and welcome him in his first appearance before the Energy and Commerce Committee.

Finally, although this is not a Legislative hearing, I would like to note that I have introduced legislation in this Congress, H.R. 20, which takes a national approach in addressing the problems caused by MTBE in unreformulated gasoline.

The bill is based on recommendations issued in 1999 by the U.S. Environmental Protection Agency's blue ribbon panel on oxygenates, and would allow States to waive the Federal oxygen mandate for RFG.

Any Governor would be able to petition the EPA to waive the oxygen mandate for fuel sold in his or her State. The waiver provision would not affect any other requirement of the RFG program. All other environmental and performance standards would continue to apply.

The bill enhances EPA's authority to control or prohibit MTBE or other fuel oxygenates, allowing the EPA to reduce MTBE to even lower levels in order to protect human health, welfare, or the environment, by moving from a prescriptive and formula-based regime, to a performance-based standard.

Finally, the bill would permit a State, subject to EPA approval, to prohibit the sale of MTBE as a fuel additive, or to require additional or earlier reductions in MTBE use in the State.

Again, I look forward to the testimony of the subcommittee and that the subcommittee will receive today, and hope that we can soon build on this foundation, and to pass legislation that will result in clean burning gasoline that does not carry with it the risk of breathing another environmental problem, such as drinking water contamination.

I know that many members of the committee share that interest, and with this committee's history of creating innovative solutions to tough environmental problems, I hope that we can soon add MTBE to that list of solved issues. The Chair recognizes the ranking member of the committee, Mr. Deutsch, for 5 minutes for an opening statement.

Mr. DEUTSCH. I have no statement.

Mr. GREENWOOD. The Chair then recognizes the gentleman from Ohio, Mr. Gillmor, for an opening statement.

Mr. GILLMOR. Thank you very much, Mr. Chairman, for yielding me this time, and I want to commend you for your work in holding the hearing and looking into the issues concerning the use of MTBE in gasoline.

I am also happy to see that on our second panel today we have one Buckeye, Michael Ports, of Ports Petroleum, in Wooster, Ohio. Long before Americans worried about anthrax, or other potentially poisonous biological agents showing up in their drinking water, they worried about MTBE.

This gasoline additive has generated more bills, more votes, and more discussion than perhaps any other environmental issue over the last 2 years. And we are all becoming more familiar with the scientific data concerning MTBE's threat to human health and the environment, particularly ground water.

In fact, many of the organizations testifying before our panel today have either called for the reduction or elimination of MTBE as a gasoline option. But if we are truly honest with ourselves, we all know that this outcome is probably politically infeasible.

However, that does not mean that we should not try to mitigate some of the environmental harm that this chemical imposes on our natural resources. As the chairman of the House Subcommittee on Environment and Hazardous Materials, my panel has jurisdiction over both protecting drinking water and securing underground storage tanks.

The conundrums currently facing our drinking water and underground tanks due to MTBE are well documented. And while some in Congress have supported more targeted and short term fixes to dealing with MTBE contamination, I think we need to think more broadly.

In the coming weeks, I plan to be sitting down with parties on all sides of the tanks and fuels issue. The leaking underground storage tank trust fund now stands at \$1.5 billion. The trust fund receives more money in user fee taxes on gas than what it spends in each fiscal year.

Right now the EPA's own website encourages States to use the clean water revolving loan fund money to help clean up MTBE.

Since we have this money in the LUST fund, we need to get more resources that have been raised from these very fuels out into the hands of the people that clean up their spills.

While the focus of our hearing today is on MTBE, we must ensure that all fuels, ethanol included, are safe to be stored, transported, and do not present an imminent and substantial threat to our Nation's ground water supply.

And once again, Mr. Chairman, I thank you for this time to speak, and I commend you on this hearing, and I yield back.

Mr. GREENWOOD. The Chair thanks the gentleman from Ohio, and recognizes for 5 minutes for his opening statement the gentleman from Texas, Mr. Green.

Mr. GREEN. Mr. Chairman, I appreciate the courtesy since I am not longer on the subcommittee, and I would just submit an opening statement and not take the time. But I appreciate it.

[The prepared statement of Hon. Gene Green follows:]

PREPARED STATEMENT OF HON. GENE GREEN, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF TEXAS

Mr. Chairman: Thank you for this opportunity to participate in this hearing regarding the use of MTBE, one of the most effective fuel additives currently in use in the United States today.

While the Energy and Commerce Committee has certainly held its fair share of hearings into the topic of oxygenates like MTBE, much has changed since last we visited the issue.

I look forward to hearing from today's witnesses regarding their views.

First, as we are all so acutely aware, the events of September 11th have again emphasized the clear need to focus on the energy security of the United States.

As President Bush recently remarked, "energy security is homeland security."

And of course, the six Presidents that preceded President Bush have all concurred that an adequate supply of refined product is a critical element of security, each having made explicit "national security findings" on the subject.

The fact is that the amount of refined products required to supply a modern military far exceeds the amount required in the past.

For example, during the peak of Operation Desert Storm, the half million U.S. military personnel consumed more than 450,000 barrels of light refined products per day, nearly four times the amount used in WWII by the 2 million strong Allied Expeditionary Force that liberated Europe.

Facts such as these demonstrate just how inappropriate it is to even consider a phase out of MTBE under current circumstances.

As the Department of Energy has previously testified: "MTBE's contribution to gasoline supplies nationally is equivalent to about 400,000 barrels a day of gasoline production capacity or the gasoline output of four to five large refineries."

Additionally, a loss of ability to use MTBE may also affect the ability of the US gasoline market to draw gasoline supplies from Europe, the major source of our price-sensitive gasoline imports, since those refiners widely use MTBE, albeit typically at lower concentrations than in the U.S."

Mr. Chairman, we cannot and should not consider major changes in U.S. fuels policy that might have the unfortunate side effect of reducing U.S. supply of refined products.

Further, the only reason advanced to reduce MTBE use is water quality, yet the most recent findings seem to indicate that detections of MTBE are on the decline. MTBE has been shown to biodegrade under many environmental conditions.

Most MTBE plumes will stabilize over time. There are effective MTBE remediation technologies, and surface water impacts have been reduced by the phase-out of two-stroke motor boats on reservoirs.

It would appear to me that while water concerns regarding MTBE have been greatly exaggerated, the positive impact of the additive on the U.S. economy, air quality and security has never been more important.

Thank you Mr. Chairman, and I again appreciate the opportunity to participate in today's hearing.

Mr. GREENWOOD. All right. Other members who arrive will have their opening statements submitted for the record.

[Additional statement submitted for the record follows:]

PREPARED STATEMENT OF HON. W.J. "BILLY" TAUZIN, CHAIRMAN, COMMITTEE ON
ENERGY AND COMMERCE

I want to welcome our witnesses today and commend Chairman Greenwood for his efforts in putting today's hearing together.

As many of you know, the tragic events of September 11th and subsequent discoveries of anthrax contamination on Capitol Hill forced us to postpone this hearing several times. I know that this has caused some hardship to our witnesses and I want to thank them for their patience and understanding during the past few weeks. It has simply been vital that the Committee find time to continue its review of the Reformulated Gasoline Program and the role of oxygenates used in this program.

Reformulated gasoline makes up not only more than one-third of our nation's gasoline supply, it represents a novel effort from the 1990 Clean Air Act Amendments—an effort to reduce pollution using gasoline, instead of bolting on yet another treatment device on cars' tailpipes. As such, the RFG program required years to develop and implement as well as billions of dollars in refinery and distribution system investments.

This effort has met with success, but has also spawned various controversies and concerns. We will hear today from witnesses who argue for eliminating the use of MTBE in the program, as well as those who object to the underlying requirement that RFG contain a minimum 2% level of oxygenates. We will also hear testimony which indicates that MTBE is vital to the nation's gasoline supply, and from witnesses who will defend the oxygenate's environmental performance.

I especially want to acknowledge the testimony that we will receive from EPA concerning recently proposed improvements to the RFG program. I welcome this testimony and the underlying analysis and effort on the part of the Agency.

When this Committee drafted and introduced H.R. 4, the national energy bill approved by the House this past August, it included several provisions designed to avoid price spikes in the RFG program, help ease gasoline costs to the consumer, and prevent seasonal gasoline supply disruptions. The Committee also included a directive in H.R. 4 that EPA comprehensively study the matter of boutique fuels and examine how future fuel specifications will impact the program.

Accordingly, I was pleased when EPA announced last week that it would implement virtually all of the boutique fuel reforms contained in H.R. 4. These provisions should avert the need to drain gasoline storage tanks each spring, as well as reduce unnecessary paperwork and other burdensome procedures. I commend Administrator Whitman and Assistant Administrator Holmstead for the Agency's decision to take action on this matter, especially in light of the Senate's current inability to move forward with an energy package.

Again, I want to extend my appreciation to the witnesses for their efforts in scheduling, rescheduling, and finally being here today. Your testimony, I am sure, will further inform this committee about the multitude of complex and sometimes contentious issues surrounding RFG and the use of oxygenates.

Mr. GREENWOOD. We will now turn to the panel, and let me identify our first panel of witnesses.

They are the Honorable Jeffrey Holmstead, Assistant Administrator for Air and Radiation from the Environmental Protection Agency; Mr. Robert S. Kripowicz, Acting Assistant Secretary for Fossil Energy at the U.S. Department of Energy; Mr. John Stephenson, Director of the Natural Resources and Environment, United States General Accounting Office, and Mr. Robert Hirsch, Associate Director for Water, U.S. Geological Survey.

I assume that the witnesses have been informed that this is an investigational hearing and as such it is the practice of this subcommittee to take testimony under oath. Do any of you object to having your testimony offered under oath?

[No response.]

Mr. GREENWOOD. In that case, pursuant to the rules of this committee and of the House, you should know that you are entitled to be represented by counsel. Do any of you wish to be represented by counsel for your testimony?

[No response.]

Mr. GREENWOOD. In that case, if you will rise, and I will administer the oath.

[Witnesses sworn.]

Mr. GREENWOOD. Thank you. I should advise all here that we may have a vote in about 5 minutes, but we will move ahead anyway, and Mr. Holmstead, if you would begin. You are recognized for 5 minutes to offer your testimony.

Mr. HOLMSTEAD. Thank you very much.

Mr. GREENWOOD. And thank you for being here.

Mr. HOLMSTEAD. My pleasure.

TESTIMONY OF HON. JEFFREY HOLMSTEAD, ASSISTANT ADMINISTRATOR FOR AIR AND RADIATION, U.S. ENVIRONMENTAL PROTECTION AGENCY; ROBERT S. KRIPOWICZ, ACTING ASSISTANT SECRETARY FOR FOSSIL ENERGY, U.S. DEPARTMENT OF ENERGY; JOHN STEPHENSON, DIRECTOR, NATURAL RESOURCES AND ENVIRONMENT, U.S. GENERAL ACCOUNTING OFFICE; AND ROBERT M. HIRSCH, ASSOCIATE DIRECTOR FOR WATER, U.S. GEOLOGICAL SURVEY

Mr. HOLMSTEAD. I am very happy to be able to start my career in the House before your subcommittee. So I look forward to working with you more in the future.

Mr. GREENWOOD. We will be gentle on you.

Mr. HOLMSTEAD. Let me just briefly begin by reviewing the history of the RFG program. You have already covered most of that, Mr. Chairman, but for those of you who have not been perhaps around this issue as much, before 1990, regulatory efforts to reduce emissions from cars and other vehicles had focused really almost exclusively on the vehicles themselves.

In the 1990 amendments to the Clean Air Act, Congress recognized that it was also important to consider the fuels that are used in those vehicles. As a result the 1990 amendments established a number of programs designed to achieve cleaner motor vehicles and cleaner fuels.

These programs have been highly successful in protecting the public health by reducing harmful exhaust from motor vehicles. The RFG program was actually designed to serve several goals.

These include improving air quality, enhancing energy security, and encouraging the use of renewable fuels through the use of oxygenates. The most important thing to know about the RFG program is that it works. Gasoline refiners do a good job of producing clean burning gasoline that helps the Nation's efforts in improving air quality.

In a 1999 report, the National Research Council, a branch of the National Academy of Sciences, said, quote, RFG usage can cause a decrease in both exhaust and evaporative emissions from motor vehicles.

Now, let me turn to the question that I think is most on your mind, and that is the question of the use of MTBE as an additive

to gasoline. There are concerns, and we have concerns, about the contamination of drinking water by MTBE in many areas of the country.

Current data on MTBE in ground and surface waters indicate numerous detections of MTBE, albeit usually at relatively low levels. Data from the U.S. Geological Survey indicate a strong relationship between the use of MTBE as a fuel additive in an area and the detection of low levels of MTBE.

In response to concerns about such contamination, 13 States have banned MTBE, one as early as the end of 2002. At least a dozen more States are also considering similar bans. In recent weeks, however, I should note that at least one State has signaled that they may reconsider the effective date of its ban.

Last year, the EPA published a so-called advanced notice of proposed rulemaking, requesting comments on a possible phase down or phaseout of MTBE from gasoline. This proposal or this advanced notice of proposed rulemaking, was done under Section 6 of the Toxic Substances Control Act, usually known as TSCA.

TSCA gives the EPA authority to ban, phaseout, limit, or control the manufacturer or use of any chemical substance if it is deemed to pose an unreasonable risk to human, to public health, or the environment.

Taking such action under TSCA is technically complicated and time consuming, but at this point TSCA is the only regulatory tool that the agency has for limiting or eliminating the use of MTBE.

Governor Whitman has testified previously on this point, and let me just reaffirm that we expect to have some sort of regulatory proposal for inter-agency review on this issue by the end of this year.

The Clean Air Act also authorizes States under certain conditions to establish their own State or local clean air programs that are different from RFG. These programs as you mentioned are often referred to as boutique fuels.

The President's national energy policy directed EPA to study opportunities, working with DOE, USDA, and other agencies, to maintain or improve the environmental benefits of State and local programs, while exploring ways to increase the flexibility of the fuel information structure.

After an extensive outreach process, the EPA has initiated an assessment of boutique fuels. We also evaluated the air quality benefits that fuels provide and assess the impact of these fuels on gasoline production and distribution.

As a result of this study, we identified two major issues. The first is the need for greater flexibility in the process by which fuel marketers make the transition from winter to summertime gasoline.

In both 2000 and 2001, gasoline prices rose sharply during the transition period, particularly in the midwest. EPA has now proposed certain regulatory changes which we believe would help to moderate these price spikes and perhaps even eliminate them during the transition period.

The second issue that we identified during our boutique fuel study is the growth in the number of different programs. However, despite the growing number of individual boutique fuel programs, EPA also found that the current gasoline production and distribu-

tion system is able to provide adequate quantities of fuel as long as there are no disruptions in the supply chain.

If there is a disruption, such as a pipe line break or a refinery fire, it can be difficult to provide gasoline supplies of the required quality because of constraints imposed by these boutique fuel requirements.

In addition, action taken by a growing number of States to ban the use of MTBE could increase the number of boutique fuel programs around the country. In addition to releasing a report to the President that dealt specifically with some of the short term actions that we can take administratively to help during the transition period, EPA also released last week as you mentioned a separate and more extensive staff white paper that explores options for addressing boutique fuels in the longer term.

The white paper presents a preliminary analysis of a number of approaches that would reduce the number of fuel programs, but still give States some flexibility to select from a limited number of options.

The broad findings contained in the staff white paper are, one, today's fuel distribution infrastructure is not constrained by boutique fuel requirements unless there is a disruption, such as a pipe line break or refinery fire.

And, No. 2, there are a number of factors that lead States to adopt boutique fuel requirements, including individual air quality needs, the costs relative to RFG, and concerns about the oxygenate mandate, and potential contamination of ground water with MTBE.

I should note that a more detailed analysis of possible options remains to be done before any final action could be taken. The white paper is designed to lay the ground work for future analysis.

I should also point out, as I think you know, that any of the options examined in the white paper would require action by Congress to revise the Clean Air Act. EPA is now requesting public comment on all these issues.

Mr. Chairman, we have learned a great deal about cleaner burning fuel since 1990. We have learned that clean fuel programs are critical to our Nation's effort to reduce the harmful effects of air pollution.

We now know that MTBE, if leaked or spilled, can contaminate water supplies more readily than other components of gasoline, and we know that a number of States have exercised the authority granted them by the Clean Air Act to establish different fuel formulations that are now referred to as boutique fuels.

As I stated also, we are committed to working with you and with Congress to explore ways to maintain or enhance environmental benefits of clean fuel programs, while seeking ways to increase the flexibility of the fuels distribution infrastructure, enhance our Nation's energy security, and minimize the cost of motor vehicles to consumers. Thank you very much.

[The prepared statement of Hon. Jeffrey Holmstead follows:]

PREPARED STATEMENT OF JEFFREY HOLMSTEAD, ASSISTANT ADMINISTRATOR, OFFICE OF AIR AND RADIATION, U.S. ENVIRONMENTAL PROTECTION AGENCY

Thank you, Mr. Chairman and Members of the Subcommittee, for the invitation to appear here today. I appreciate the opportunity to discuss the vital role cleaner burning gasoline plays in improving America's air quality and EPA's efforts to re-

spond to the President's Energy Policy in regard to boutique fuels. I will also discuss our on-going actions to address the use of MTBE as a gasoline additive.

Before discussing these issues, I will review the history and development of the federal reformulated gasoline (RFG) program, and discuss the air quality benefits derived from that program.

History of RFG

When Congress passed the Clean Air Act Amendments of 1990, it established a number of programs to achieve cleaner motor vehicles and cleaner fuels. These programs have been highly successful in protecting public health by reducing harmful exhaust from the tailpipes of motor vehicles. In the 1990 Amendments, after extensive deliberation, Congress struck a balance between vehicle and fuel emission control programs. The RFG program was designed to serve several goals. These include improving air quality and extending the gasoline supply through the use of oxygenates.

Congress established the overall requirements of the RFG program by identifying the specific cities in which the fuel would be required and setting specific performance standards for RFG, including a requirement that such gasoline contain a minimum of two percent oxygen by weight. The oil industry, states, oxygenate producers and other stakeholders were involved in a successful regulatory negotiation that resulted in the development of RFG proposed regulations in 1991. EPA published the final regulations establishing the detailed requirements of the two-phase program in early 1994.

The first phase of the federal reformulated gasoline program introduced cleaner gasoline in January 1995 primarily to help reduce vehicle emissions that cause ozone (smog) and toxic pollution in our cities. The second phase of the program went into effect in January, 2000 and was designed to further reduce emissions of volatile organic compounds (VOC), oxides of nitrogen (NO_x) and air toxics.

Under the Clean Air Act, ten metropolitan areas that have the most serious air pollution levels are required to use RFG. Although not required to participate, some areas in the Northeast, in Kentucky, Texas and Missouri have elected to join, or "opt-in," to the RFG program as a relatively cost-effective measure to help combat their air pollution problems. Today, roughly 35 percent of this country's gasoline consumption is cleaner-burning reformulated gasoline. The Clean Air Act Amendments of 1990 also required that RFG contain two percent minimum oxygen content by weight. Although neither the Clean Air Act nor EPA requires the use of any specific oxygenate, ethanol and MTBE are the only oxygenates used to any significant extent in the RFG program, with fuel providers choosing to use MTBE in about 87 percent of the RFG. Ethanol is used in 100 percent of RFG in Chicago and Milwaukee, which are closer to major ethanol production centers.

Benefits of RFG

Ambient monitoring data from the first year of the RFG program (1995) indicated that the use of RFG had significantly reduced vehicle-related tailpipe emissions including air toxics. One of the air toxics controlled by RFG is benzene, a known human carcinogen. The 1995 study showed that the program reduced ambient levels of benzene dramatically with a median reduction of 38 percent from the previous year. Overall, the emission reductions that can be attributed to the RFG program are equivalent to taking 16 million cars off the road. Since the RFG program began six and one-half years ago, we estimate that it has resulted in annual reductions of VOC and NO_x combined of at least 105,000 tons, and at least 24,000 tons of toxic air pollutants.

As an example of the benefits, EPA estimates that in Chicago alone, the Phase II RFG program results in annual reductions of 8,000 tons of VOC and NO_x combined and 2,000 tons of toxic vehicle emissions, benefitting almost 8 million citizens.

The Use of MTBE in Gasoline

There is significant concern about contamination of drinking water in many areas of the country. Current data on MTBE in ground and surface waters indicate numerous detections of MTBE at low levels. Data from the U.S. Geological Survey indicates a strong relationship between MTBE use as a fuel additive in an area and finding detections of low levels of MTBE. In response to concerns about MTBE contamination, twelve states have banned MTBE, one as early as the end of 2002. At least a dozen more states are considering similar bans. Refiners and other gasoline marketers are concerned that state laws that ban the use of MTBE in future years present new challenges to this country's fuel production and distribution system. In recent weeks, however, at least one state has signaled that it may reconsider the effective date of its MTBE ban.

Last year, EPA published an Advance Notice of Proposed Rulemaking requesting comments on a phase down or phase out of MTBE from gasoline under Section 6 of the Toxic Substances Control Act (TSCA). EPA believes that TSCA is the only regulatory tool currently available to the Agency for limiting or eliminating the use of MTBE. TSCA gives EPA authority to ban, phase out, limit or control the manufacture or use of any chemical substance deemed to pose an unreasonable risk to public health or the environment. We expect to have a proposal prepared for inter-agency review later this year.

Boutique Fuels

The Clean Air Act authorizes states to regulate fuels through their own state implementation plans in order to achieve a national air quality standard. This has resulted in a number of different formulations being required by states—formulations that are often referred to as boutique fuels. These state fuel programs can limit flexibility in the fuel distribution system, particularly if a disruption occurs.

The President's Energy Policy Report issued on May 17, 2001 directed that EPA, in consultation with USDA, DOE and other agencies:

study opportunities to maintain or improve the environmental benefits of state and local "boutique" clean fuel programs while exploring ways to increase the flexibility of the fuels distribution infrastructure, improve fungibility, and provide added gasoline market liquidity.

In response to this directive and to understand the current situation and future outlook for boutique fuels, EPA consulted with over 40 stakeholder groups, including gasoline refiners, distributors and marketers, pipeline operators, auto manufacturers, state and local government officials, and environmental and public health organizations.

Following this extensive outreach process, EPA initiated its own assessment of boutique fuels, focusing on the various types of fuels and the factors that lead state and local governments to adopt boutique fuel requirements. We also evaluated the air quality benefits the fuels provide and assessed the impact of these fuels on the gasoline production and distribution system. As a result of this evaluation, EPA identified two major issues associated with federal, state and local clean fuel programs. The first is the need for greater flexibility in the process by which fuel marketers make the transition from winter to summer grade reformulated gasoline. In both 2000 and 2001, gasoline prices rose sharply during the transition period, particularly in the Midwest, and EPA believes that regulatory changes could be a factor in helping to moderate price spikes during future transition periods.

The second issue is the number of state and local boutique fuels programs and the challenges that this presents to the gasoline distribution system. EPA has identified several reasons why states have adopted their own boutique fuels requirements, including reduced cost compared with the federal RFG program, local air pollution control needs, concerns about the oxygenate mandate in the RFG program, and concerns about the use of MTBE, an oxygenated gasoline additive which has been found to contaminate water supplies in some areas.

Despite the number of state and local fuel programs, EPA has also found that the current gasoline production and distribution system is able to provide adequate quantities of boutique fuels, as long as there are no disruptions in the supply chain. If there is a disruption, such as a pipeline break or refinery fire, it can be difficult to provide gasoline supplies of the required quality because of constraints created by these boutique fuel requirements. In addition, actions taken by a growing number of states to ban the use of MTBE as a gasoline additive are a major factor that would increase the number of boutique fuel programs around the country.

In responding to the directive from the President's Energy Policy Report, EPA has identified several actions it can take in the near term to facilitate an orderly transition from winter to summer grade reformulated gasoline. EPA is prepared to act quickly on this set of administrative and regulatory actions to provide new flexibility to refiners in advance of next year's spring transition season.

In summary, EPA will:

- Propose to establish an alternative requirement of April 15 for receipt of summer fuel at terminals to ensure that terminals blend down their RFG stocks more gradually. This action should reduce the practice of draining tanks containing winter grade RFG to extremely low levels shortly before May 1.
- Allow 2 percent testing tolerance for the initial transition to summer specifications. This action would benefit all refiners by providing additional flexibility.
- Allow previously certified fuel to be reclassified under certain conditions. This would help alleviate limited inventory in tight RFG markets.

- Propose to simplify blendstock accounting requirements to eliminate significant additional reporting for blendstock transfers. This action will allow refiners more flexibility to sell gasoline blendstocks.

As noted above, the second issue is the number of state and local boutique fuel programs. In response to this issue EPA staff is preparing a White Paper to address boutique fuels in the longer term. This White Paper, which we will release for public review and comment, will lay the groundwork for needed future study. The guiding principles for our analyses are: 1) improve the fungibility and movement of gasoline across the country; 2) maintain or improve emission performance for each area of the country currently covered by federal, state, or local fuel programs; 3) maintain or improve the ability of fuel producers to produce sufficient gasoline to meet demand, and 4) minimize the net cost when considering both production and distribution.

Conclusion

Mr. Chairman and Members of the Subcommittee, we have learned a great deal about cleaner burning fuels since 1990. We have learned that the clean fuel programs I have talked about today are critical to our nation's efforts to reduce the harmful effects of air pollution. We have learned that MTBE, if leaked or spilled, can contaminate water supplies more readily than other components of gasoline. We know that a number of states have exercised the authority granted them by the Clean Air Act to establish different fuel formulations that are now referred to as boutique fuels. And we also believe that increasing the number of boutique fuels may create additional challenges for fuel distribution.

We are committed to working with Congress to explore ways to maintain or enhance environmental benefits of clean fuels programs while exploring ways to increase the flexibility of the fuels distribution infrastructure and minimize costs.

This concludes my prepared statement. I would be pleased to answer any questions that you may have.

Mr. GREENWOOD. Thank you, Mr. Holmstead. We appreciate your testimony. Mr. Kripowicz, am I pronouncing that correctly?

Mr. KRIPOWICZ. Yes, your are, sir.

Mr. GREENWOOD. Thank you. We thank you for being with us, and you are recognized for 5 minutes to offer your testimony.

TESTIMONY OF ROBERT S. KRIPOWICZ

Mr. KRIPOWICZ. Mr. Chairman, and members of the subcommittee, I am here today to provide the Department of Energy's views on issues concerning the use of MTBE in gasoline.

In the past few years the supply and demand balance in the petroleum market in general, and in the gasoline market in particular, has tightened considerably. Events in the world oil markets contributed to the volatile prices that we experienced this summer and last year.

The problems of market volatility and high prices were most evident in the midwest, particularly in the ethanol blended reformulated gasoline market. But supplies of other products, including conventional gasoline and diesel fuel, were also tight due largely to infrastructure limitations in that area.

Even though prices at the pump have declined recently the Nation continues to face the challenge of assuring adequate capacity to meet future demand for gasoline and other transportation fuels.

Assuring adequate capacity and doing so in an environmentally responsible manner will not be an easy matter. But it will be a necessary one if our economy is to continue to grow. At the Energy Department, we are working with industry to help meet this challenge.

Our program includes support for alternative fuels, research on advanced ethanol production from cellulose, and the development

of new and cleaner refining technologies. In many cases, however, these activities focus on the longer term.

In the shorter term the choices are fewer, and any changes to the current situation must carefully consider impacts on price and supply. The Department has been addressing the issue of MTBE for some time, and we fully appreciate the problems that arise when MTBE is released into the environment, primarily from leaking underground gasoline storage tanks.

As the committee is aware, there is an ongoing federally mandated effort to fix and upgrade most of these tanks. Some States, however, have chosen to resolve the problem by banning the use of MTBE in gasoline.

We can appreciate that some States believe this is the best option. However, we believe that such bans could potentially threaten the adequacy of gasoline supplies in those States.

Today's refiners continue to confront the challenges of meeting even tighter clean fuel standards for their gasoline. The recently promulgated standards for Tier-II low-sulfur gasoline in the mobile source air toxins requirements for conventional and reformulated gasoline are two primary examples.

As refiners look for ways to meet these additional requirements, they will likely find oxygenates, such as MTBE, even more necessary to increase volume, make up for lost octane, and address other property changes, such as distillation and toxic characteristics.

In the near term, eliminating MTBE as a gasoline blending component could severely hinder the ability of many refiners to produce clean affordable gasoline. This is because the availability of substitute gasoline blending components with similar qualities is very limited.

We recognize that recent information indicates that MTBE might be replaced with other blend stocks, but we have not seen any conclusive analysis to validate this. Nonetheless, this is an area that needs further study.

It is also important to recognize that losing the capability to use MTBE could also affect the ability of the U.S. gasoline market to draw gasoline supplies from Europe, which also contain MTBE. Europe is the major source of our price sensitive gasoline imports for the northeast.

In short, the Department remains concerned about our current and longer term energy supplies. We fully support the requirements for cleaner fuels. We support the need for cleaner air and for safe drinking water, but we would also encourage that to the greatest extent possible that environmental standards be implemented in ways that do not compromise the adequacy or the affordability of energy supplies that are vital to our economy.

Mr. Chairman, that completes my summary statement and I would be happy to answer any questions.

[The prepared statement of Robert S. Kripowicz follows:]

PREPARED STATEMENT OF ROBERT S. KRIPOWICZ, ACTING ASSISTANT SECRETARY, FOR FOSSIL ENERGY, U.S. DEPARTMENT OF ENERGY

Mr. Chairman and Members of the Subcommittee, you have asked that the Department of Energy provide an update on issues concerning the use of methyl tertiary butyl ether (MTBE) in gasoline. I will address the Committee's concerns, but

would like to start with the broader National Energy Policy context, and recent energy markets experience, as a framework for these issues.

The early focus of this Administration on the development of a comprehensive National Energy Policy was motivated to a significant degree by the rising concerns over the adequacy and cost of energy supplies, not the least of which are gasoline and other petroleum products on which much of our economic activity depends. We have observed over the past few years a tightening of the supply/demand balance in the petroleum product market in general and gasoline in particular. Events in the world oil markets have contributed to the high and volatile prices we have experienced this summer and last year.

The Department's Energy Information Administration addressed these near-term issues in testimony earlier this year and I will not repeat that here. I will only note that we experienced tight supplies and volatile prices again this summer in the Midwest. These problems were most evident in the Chicago/Milwaukee ethanol-blended reformulated gasoline (RFG) market, and supplies of other products including conventional gasoline and diesel fuel also experienced severe tightness largely because of ongoing infrastructure limitations in that area. The longer term issues affecting infrastructure and petroleum product supplies include:

- the poor investment climate throughout the 1990s associated with the refining industry's historic over capacity and competition from foreign refineries;
- the subsequent closure of uneconomic refineries, some of which were also unable to meet new environmental requirements; and
- high investment requirements simply to maintain existing capacity due to the imposition of a range of new clean fuel requirements starting with reformulated gasoline in 1995 and continuing through at least 2006.

Having experienced a decade of poor returns, facing legal challenges related to permitting on previous refinery expansion, and having to comply with significant new requirements for cleaner fuels that will demand large stay-in-business investments, it is not surprising that the financial decision-making in the refining industry has responded very cautiously to the growth in gasoline (and other transportation fuels) demand. Other parts of the petroleum product supply system, including pipelines and terminals, have faced similar financial situations that have discouraged investment and have left us with constrained capacity.

Assuring adequate capacity to meet future demand in an environmentally responsible manner in the longer term is not an easy matter but we must take on this challenge. Our program activities include support for alternative fuels, research on advanced cellulosic ethanol production and development of new refining technologies. In the short term, our choices are even fewer and any changes that have been proposed must carefully consider impacts on price and supply. Under this framework, I will address the issues related to MTBE in gasoline, as requested by the Subcommittee.

MTBE Issues

The Department has been involved for some time with the EPA, other Federal agencies and State organizations like the Northeast States for Coordinated Air Use Management (NESCAUM) in addressing the issue of MTBE, an oxygenate used in clean gasoline formulation affecting water supplies. This problem arises primarily from leaking underground gasoline storage tanks, and there is an ongoing, federally-mandated effort to fix and upgrade most of these tanks. Individual States have made additional efforts to address these leaking gasoline tanks and their potential impacts on water supplies. However, some States have made the choice to resolve the problem by banning the use of MTBE in gasoline. This clearly is one option for addressing the problem and we can appreciate that some States, like California and New York, believe that it is the best option. However, we believe addressing these water quality concerns with near-term bans of gasoline additives represents would threaten the adequacy of gasoline supplies in those States.

As refiners face additional requirements to meet even tighter clean fuel standards for their gasoline, like the recently promulgated standards for Tier II low-sulfur gasoline and anti-backsliding toxic emission control requirements for conventional and reformulated gasolines, and address commercial considerations like the Unocal patent, they will find oxygenates such as MTBE even more necessary and valuable to increase volume, make up for lost octane, and address other property changes such as distillation characteristics. The availability of oxygenates also provides valuable immediate gasoline blending flexibility to refiners trying to meet tight product specifications; the oxygenates are aromatic-free, high octane, virtually sulfur-free blendstocks that can be put in almost any shipment of gasoline to offset performance shortfalls in other parts of the refinery. This is particularly true for MTBE which can be blended at the refinery and shipped in pipelines and which has little

negative impact on vapor pressure. The effect of being able to readily blend MTBE into gasoline is to help assure product deliverability, reliable supplies, and affordable gasoline prices to consumers. Recent information indicates that MTBE, if banned, could be replaced with other blendstocks. We have not seen any conclusive analysis that validates this contention, but acknowledge this issue needs to be studied very carefully.

If a sufficient number of States were to restrict use of MTBE, refiners and distributors might choose to remove MTBE from all gasoline in that region to protect the fungibility of the gasoline distribution system and avoid even more "boutique" fuels. Although MTBE consumption is currently about 300,000 barrels per day nationally, in replacement terms MTBE's contribution to gasoline supplies nationally is greater because of its high quality. Additionally, a loss of ability to use MTBE may also affect the ability of the U.S. gasoline market to draw gasoline supplies from Europe, the major source of our price-sensitive gasoline imports, since those refiners widely use MTBE, albeit typically at lower concentrations than in the U.S.

Alternatively, gasolines with and without MTBE could be produced but with less flexibility and fewer exchange opportunities in the distribution system. In addition to the ongoing supply problems one could expect from trying to produce both reformulated and conventional gasolines without MTBE, regional refinery or distribution supply problems could lead to additional short-term difficulties under near-term State-by-State bans. One could expect these situations to contribute to regional gasoline shortfalls and longer periods of price volatility as markets struggle to re-balance on a State-by-State basis. In addition, for Northeast States, which depend heavily on imported reformulated gasoline, MTBE bans and the subsequent need for special gasoline blendstocks for ethanol blending could be even more problematic. Additionally, with the Mobile Source Air Toxics (MSAT) rule implemented by EPA, refiners are required, starting in January 2002, to maintain the toxic performance of their gasoline at or above the 1998 to 2000 baseline. Some refiners have produced gasoline with toxics performance much better than was required to meet the RFG performance guidelines because of market opportunities in the petrochemical markets. The MSAT rule requires these refiners to continue to produce gasoline that over-complies relative to toxic performance into the future. The near-term elimination of MTBE as a gasoline blending component would severely hinder these refiners' ability to produce clean gasoline because the availability of substitute gasoline blending components with similar quality is very limited.

The Department of Energy remains concerned about our current and longer-term energy supply situation. We will continue to work with EPA and others to better understand the energy supply implications of all our actions and look for additional ways to improve the current capacity situation. While we fully support the various clean fuel requirements that are necessary to achieve our air quality goals and we share a strong desire to protect the nation's water quality, we believe that it is important that these initiatives be implemented in a way that has the least negative impact on fuel supplies. As we move forward, the National Energy Policy provides important guidance and Executive Order 13211, "Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use," will appropriately focus our attention on these impacts in future rule makings. Assuring adequate supplies of energy, gasoline in this case, in an environmentally responsible way and at reasonable prices to support a strong economy is a key goal of this Administration.

Mr. Chairman, that ends my testimony and I would be happy to answer any questions the Subcommittee may have.

Thank you.

Mr. GREENWOOD. Thank you for your testimony. Mr. Stephenson, you are recognized for 5 minutes for yours.

TESTIMONY OF JOHN STEPHENSON

Mr. STEPHENSON. Thank you, Mr. Chairman, and members of the subcommittee. I am here today to discuss GAO's recent report on the Environmental Protection Agency's underground storage tank program.

The program is relevant to today's hearing because studies have shown that tanks that leak hazardous substances such as MTBE can contaminate the soil and water and pose health risks ranging from nausea, to kidney or liver damage, or even cancer.

Indeed, leaks of MTBE have been found in drinking water sources and pose a very serious health risk and costly cleanup burden. In 1984, Congress created the tank program to protect the public from potential leaks from the then more than 2 million tanks located across the Nation, primarily at gas stations.

Under the program, tank owners were required to install new leak detection equipment by the end of 1993, and new spill, overfill, and corrosion protection equipment by the end of 1998. If these conditions were not met, owners had to close or remove their tanks.

In addition, the Congress created a trust fund in 1986 to help the EPA and the States cover cleanup costs for tank owners who could not afford to do so. The fund is replenished primarily through a 10th of a cent per gallon gas tax, and at the end of the fiscal year the fund's balance was around \$1.5 billion.

Congress appropriates roughly \$70 million against this fund each year for cleanup purposes. In our study, GAO was asked to determine the extent tanks are in compliance with program requirements, how the States are inspecting tanks and enforcing requirements, and whether upgraded tanks still leak.

We were not asked to assess cleanup status or costs. Because the States implement the program, the information in our report is primarily based on a survey that we conducted of all 50 States and the District of Columbia. Here is what we found.

About 1.5 million tanks have been permanently closed since the program began in 1984, leaving about roughly 700,000 tanks subject to program requirements. Of these 700,000 active tanks, we estimate that about 89 percent were in compliance with equipment requirements.

I have got a couple of visual aids over here. As you can see in the chart, the level of compliance varies from State to State. The darker color on that chart represents the lower compliance rates. So, white is good, and gray is a little better, and black is not so good.

Now 89 percent is a fairly good compliance rate. Unfortunately, we estimate that almost 30 percent, more than 200,000 tank owners, were not properly operating and maintaining their tanks, thus, increasing the chance for leaks.

For example, 15 States reported that leak detection equipment was frequently turned off or improperly maintained. The States and EPA attributed operation and maintenance problems primarily to poorly trained staff.

The EPA and the States speculated that the remaining 11 percent or 76,000 tanks not in compliance with equipment requirements are probably closed or abandoned. Nevertheless, our report points out the importance of addressing even these closed tanks because cleanup experience has shown that they may continue to leak and pose health risks.

I should point out that these statistics are often based on best guesses because many of the States do not physically inspect all of their tanks. In fact, over half of the States do not even meet the minimum inspection recommended by the EPA, which is at least once every 3 years.

The second chart shows the inspection rates by State. States with lower than EPA's minimum inspection rate are depicted in dark colors.

Enforcing authority also varies considerably from State to State. Most States can levy either citations or fines, but less than half have the authority to prohibit fuel deliveries, which is the most effective tool for ensuring compliance with program requirements. And not surprisingly, all States stated that they needed additional resources to improve their program.

We also found that some tanks, despite being upgraded with the required equipment, may continue to leak. In fact 34 States reported tank leaks, but some didn't know whether the leaks occurred before or after the equipment had been installed. EPA, as a part of four program initiatives that it is considering right now, is thinking about new tank requirements, such as double-walled tanks, to prevent further leaks.

To address the problems highlighted in our report, we recommended that the EPA work with the States to (1) improve training, (2) promote better inspections and enforcement; and, (3) more specifically address the tanks that have not yet been upgraded, closed, or removed. And we also suggested that Congress consider expanding the use of the \$1.5 billion trust fund beyond its designated use for clean up, to also be used for inspection and enforcement activities at the State level. Mr. Chairman, that concludes my statement, and I will be happy to answer any questions that you or members of the subcommittee may have.

[The prepared statement of John Stephenson follows:]

PREPARED STATEMENT OF JOHN STEPHENSON, DIRECTOR, NATURAL RESOURCES AND ENVIRONMENT, U.S. GENERAL ACCOUNTING OFFICE

Mr. Chairman and Members of the Subcommittee: I am here today to discuss our recent report on the Environmental Protection Agency's (EPA) Underground Storage Tank (UST) program.¹ The program is relevant to today's hearing because studies have shown that tanks that leak hazardous substances, such as methyl tertiary butyl ether (MTBE), contaminate the soil or water and can pose health risks ranging from nausea to kidney or liver damage or even cancer. Indeed, leaks of MTBE—a fuel additive for reducing emissions and raising octane, but also a suspected carcinogen—have been found in drinking water sources and pose a very serious health risk and costly cleanup burden.

In 1984, the Congress created the UST program to protect the public from potential leaks from the then more than 2 million tanks located across the nation, mostly at gas stations. Under the program, EPA required tank owners to install new leak detection equipment by the end of 1993 and new spill-, overfill-, and corrosion-prevention equipment by the end of 1998. If these conditions were not met, owners had to close or remove their tanks. In general, EPA has granted states the authority to implement the program with agency oversight and monitoring, or states operate their own program under state law with limited EPA oversight. EPA has provided states funding (about \$187,000 per state) for doing so. EPA retains authority for a small number of tanks primarily located on Indian lands. In addition, the Congress created a trust fund in 1986 to help EPA and the states cover tank cleanup costs that owners and operators could not afford or were reluctant to pay. The fund is replenished partly through a \$.001/gallon tax on gasoline and other fuels. At the end of fiscal year 2000, the fund had a balance of about \$1.5 billion.

Because the states are primarily implementing the provisions of the program, we conducted a survey of all 50 states and the District of Columbia to determine whether tanks are complying with program requirements, how EPA and the states are inspecting tanks and enforcing the requirements, and whether upgraded tanks still

¹*Environmental Protection: Improved Inspections and Enforcement Would Better Ensure the Safety of Underground Storage Tanks* (GAO-01-464, May 4, 2001).

leak. The findings we are discussing today and that were included in our report are based primarily on the survey results, as well as on visits to the three EPA regions with the largest number of tanks to monitor. In summary, we found that:

- About 1.5 million tanks had been permanently closed since the program was created, leaving about 693,000 tanks subject to UST requirements. Based on the states' responses to our survey, we estimated that about 89 percent of these tanks had the required protective equipment installed, but that almost 30 percent of them—more than 200,000 tanks—were not being operated and maintained properly, thus, increasing the chance of leaks. For example, 19 states reported frequent problems with corrosion-prevention equipment and 15 states reported that leak detection equipment was frequently turned off or improperly maintained. The states and EPA attributed these operation and maintenance problems primarily to poorly trained staff. Of the remaining 11 percent, or 76,000, tanks that we estimated had not been retrofitted with the required equipment, EPA and the states speculated that the tanks were probably inactive and empty. Nevertheless, it is important to address them because experience has shown that they may have leaked in the past, but the contamination, which poses health risks, is not discovered until the tank is dug up for removal. However, most states and EPA do not know if all inactive tanks are empty—and we could not verify the accuracy and completeness of the compliance data they reported—because they do not physically inspect all tanks.
- In fact, over half of the states do not inspect all of their tanks frequently enough to meet the minimum rate recommended by EPA—at least once every 3 years. In addition, 27 states lack the authority to prohibit fuel deliveries to stations with problem tanks—one of the most effective tools for ensuring compliance with program requirements—relying instead on issuing citations and fines. States said that they did not have the money, staff, or, authority to conduct more inspections or more strongly enforce tank compliance.
- Finally, states reported that even tanks with the required leak prevention and detection equipment installed continue to leak, although the full extent of the problem is not known. In response to our survey, 14 states reported some tank leaks, 17 states said their tanks seldom or never leaked, and 20 states did not know if leaks occurred before the tanks were upgraded. EPA and some localities have studies underway to obtain better data on leaks from upgraded tanks. EPA, as part of a set of four program initiatives it announced in October 2000, is also considering whether it needs to set new tank requirements, such as double-walled tanks, to prevent further leaks.

To address these problems, our report recommends that EPA work with the states to determine training needs and ways to fill them, and to more specifically address the estimated 76,000 tanks that have not yet been upgraded, closed, or removed as required. Our report also contains recommendations to EPA and suggestions to the Congress on ways to promote better inspections and enforcement and to address related resource shortfalls by expanding the use of the \$1.5 billion trust fund designated for tank cleanup to also cover additional inspection and enforcement activities.

MOST TANKS HAVE BEEN UPGRADED, BUT MANY ARE NOT PROPERLY OPERATED AND MAINTAINED

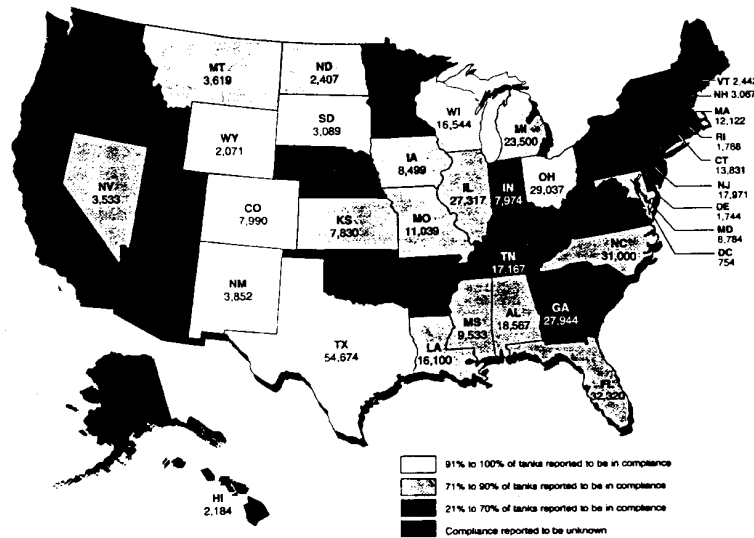
Based on state responses to our survey, we estimated that nearly 617,000, or about 89 percent of the approximately 693,000 regulated tanks, had been upgraded with the federally required equipment by the end of fiscal year 2000. EPA data showed that about 70 percent of the total number of tanks that its regions regulate on tribal lands had also been upgraded.

With regard to the approximately 76,000 tanks that we estimated have not been upgraded, closed, or removed as required, 17 states and the 3 EPA regions we visited reported that they believed that most of these tanks were either empty or inactive. However, another five states reported that at least half of their non-upgraded tanks were still in use. EPA and states assume that the tanks are empty or inactive and therefore pose less risk. As a result, they may give them a lower priority for resources. However, states also reported that they generally did not discover tank leaks or contamination around tanks until the empty or inactive tanks were removed from the ground during replacement or closure. Consequently, unless EPA and the states address these non-compliant tanks in a more timely manner, they may be overlooking a potential source of soil and groundwater contamination.

Even though most tanks have been upgraded, we estimated from our survey data that more than 200,000 of them, or about 29 percent, were not being properly oper-

ated and maintained, increasing the risk of leaks. The extent of operations and maintenance problems varied across the states, as figure 1 illustrates.

Figure 1: Compliance With Federal Equipment Requirements Varies Among States
(total active tanks per state)



Source: GAO's estimates based on responses to a survey of tank program managers in all 50 states and the District of Columbia.

Note: EPA implements the federal tank program in Idaho and enforces certain requirements in New York because these states lack some or all of the necessary laws.

The states reported a variety of operational and maintenance problems, such as operators turning off leak detection equipment. The states also reported that the majority of problems occurred at tanks owned by small, independent businesses; non-retail and commercial companies, such as cab companies; and local governments. The states attributed these problems to a lack of training for tank owners, installers, operators, removers, and inspectors. These smaller businesses and local government operations may find it more difficult to afford adequate training, especially given the high turnover rates among tank staff, or may give training a lower priority. Almost all of the states reported a need for additional resources to keep their own inspectors and program staff trained, and 41 states requested additional technical assistance from the federal government to provide such training.

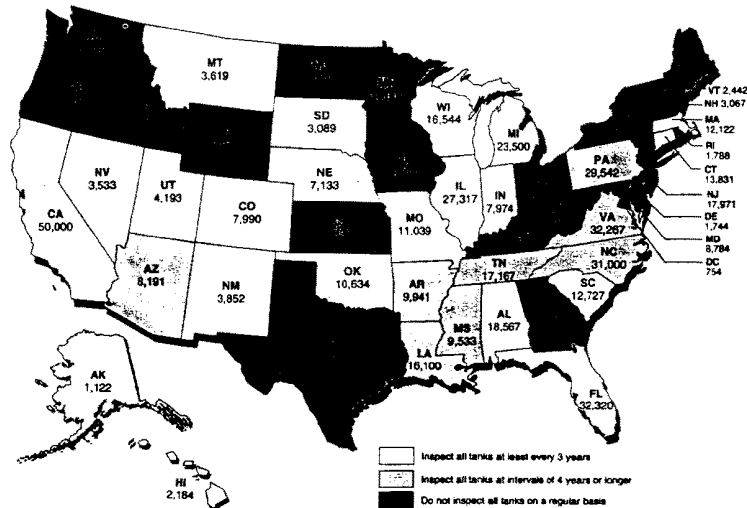
To date, EPA has provided states with a number of training sessions and helpful tools, such as operation and maintenance checklists and guidelines. One of EPA's tank program initiatives is also intended to improve training and tank compliance with federal requirements, such as setting annual compliance targets with the states. At the time of our review, the Agency was just beginning to work out the details of how it will implement this initiative and had set up a working group of state and EPA representatives to begin work on compliance targets.

MOST STATES DO NOT MEET EPA'S RECOMMENDATION TO INSPECT ALL TANKS EVERY 3 YEARS OR HAVE THE ENFORCEMENT TOOLS NEEDED TO IDENTIFY AND CORRECT PROBLEMS

According to EPA's program managers, only physical inspections can confirm whether tanks have been upgraded and are being properly operated and maintained. However, only 19 states physically inspect all of their tanks at least once every 3 years—the minimum that EPA considers necessary for effective tank monitoring. Another 10 states inspect all tanks, but less frequently. The remaining 22 states do not inspect all tanks, but instead generally target inspections to potentially problematic tanks, such as those close to drinking water sources. In addition, not all of EPA's own regions comply with the recommended rate. Two of the three

regions that we visited inspected tanks located on tribal land every 3 years. Figure 2 illustrates the states' reported inspection practices.

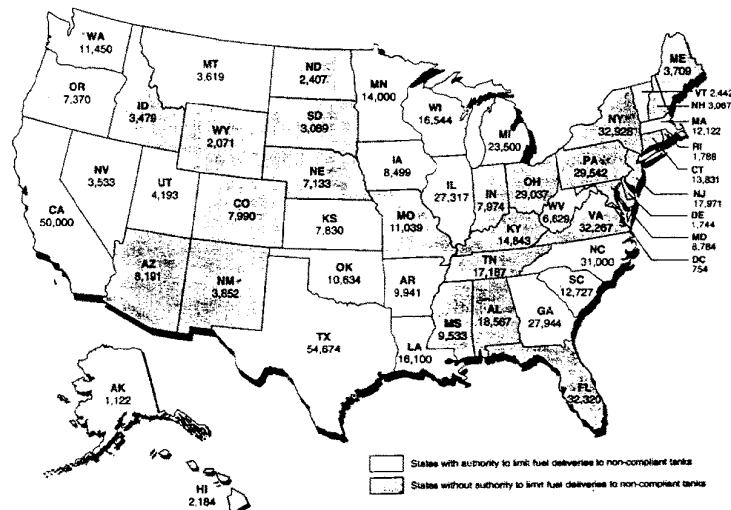
Figure 2: Frequency of Inspections Varies Among States (total active tanks per state)



Source: GAO's estimates based on responses to a survey of tank program managers in all 50 states and the District of Columbia.

Note: EPA implements the federal tank program in Idaho and enforces certain requirements in New York because these states lack some or all of the necessary laws.

Figure 3: Many States Lack Authority to Prohibit Fuel Deliveries to Problem Tanks (total active tanks per state)



Source: GAO's estimates based on responses to a survey of tank program managers in all 50 states and the District of Columbia.

Note: EPA implements the federal tank program in Idaho and enforces certain requirements in New York because these states lack some or all of the necessary laws.

According to our survey results, some states and EPA regions would need additional staff to conduct more frequent inspections. For example, under staffing levels at the time of our review, the inspectors in 11 states would each have to visit more than 300 facilities a year to cover all tanks at least once every 3 years, but EPA estimates that a qualified inspector can only visit at most 200 facilities a year. Moreover, because most states use their own employees to conduct inspections, state legislatures would need to provide them additional hiring authority and funding to acquire more inspectors. Officials in 40 states said that they would support a federal mandate requiring states to periodically inspect all tanks, in part because they expect that such a mandate would provide them needed leverage to obtain the requisite inspection staff and funding from their state legislatures.

In addition to more frequent inspections, a number of states stated that they need additional enforcement tools to correct problem tanks. EPA's program managers stated that good enforcement requires a variety of tools, including the ability to issue citations or fines. One of the most effective tools is the ability to prohibit suppliers from delivering fuel to stations with problem tanks. However, as figure 3 illustrates, 27 states reported that they did not have the authority to stop deliveries. In addition, EPA believes, and we agree, that the law governing the tank program does not give the Agency clear authority to regulate fuel suppliers and therefore prohibit their deliveries.

Almost all of the states said they need additional enforcement resources and 27 need additional authority. Members of both an expert panel and an industry group, which EPA convened to help it assess the tank program, likewise saw the need for states to have more resources and more uniform and consistent enforcement across states, including the authority to prohibit fuel deliveries. They further noted that the fear of being shut down would provide owners and operators a greater incentive to comply with federal requirements.

Under its tank initiatives, EPA has said that it will attempt to obtain state commitments to increase its inspection and enforcement activities, or it may supplement state activities in some cases. EPA's regions have the opportunity, to some extent, to use the grants that they provide to the states for their tank programs as a means to encourage more inspections and better enforcement. However, the Agency does not want to limit state funding to the point where this further jeopardizes program implementation. The Congress may also wish to consider making more funds available to states to improve tank inspections and enforcement. For example, the Congress could increase the amount of funds it provides from the Leaking Underground Storage Tank trust fund, which the Congress established to specifically provide funds for cleaning up contamination from tanks. The Congress could then allow states to spend a portion of these funds on inspections and enforcement. It has considered taking this action in the past, and 40 states said that they would welcome such funding flexibility.

SOME TANKS CONTINUE TO LEAK EVEN AFTER THEY HAVE BEEN UPGRADED, ALTHOUGH THE EXTENT OF THIS PROBLEM IS UNKNOWN

In fiscal year 2000, EPA and the states confirmed a total of more than 14,500 leaks or releases from regulated tanks, although the Agency and many of the states could not verify whether the releases had occurred before or after the tanks had been upgraded. According to our survey, 14 states said that they had traced newly discovered leaks or releases that year to upgraded tanks, while another 17 states said they seldom or never detected such leaks. The remaining 20 states could not confirm whether or not their upgraded tanks leaked.

EPA recognizes the need to collect better data to determine the extent and cause of leaks from upgraded tanks, the effectiveness of the current equipment, and if there is a need to strengthen existing equipment standards. The Agency has launched studies in several of its regions to obtain such data, but it may have trouble concluding whether leaks occurred after the upgrades. In a study of local tanks, researchers in Santa Clara County, California, concluded that upgraded tanks do not provide complete protection against leaks, and even properly operated and maintained tank monitoring systems cannot guarantee that leaks are detected. EPA, as one of its program initiatives, plans to undertake a nationwide effort to assess the adequacy of existing equipment requirements to prevent leaks and releases and if there is a need to strengthen these requirements, such as requiring double-walled tanks. The states and the industry and expert groups support EPA's actions.

In closing, the states and EPA cannot ensure that all regulated tanks have the required equipment to prevent health risks from fuel leaks, spills, and overfills or that tanks are safely operated and maintained. Many states are not inspecting all of their tanks to make sure that they do not leak, nor can they prohibit fuel from

being delivered to problem tanks. EPA has the opportunity to help its regions and states correct these limitations through its tank initiatives, but it is difficult to determine whether the Agency's proposed actions will be sufficient because it is just defining its implementation plans. The Congress also has the opportunity to help provide EPA and the states the additional inspection and enforcement authority and resources they need to improve tank compliance and safety.

Therefore, to better ensure that underground storage tanks meet federal requirements to prevent contamination that poses health risks, we have recommended to the Administrator, EPA, that the Agency

- (1) work with the states to address the remaining non-upgraded tanks, such as reviewing available information to determine those that pose the greatest risks and setting up timetables to remove or close these tanks,
- (2) supplement the training support it has provided to date by having each region work with each of the states in its jurisdiction to determine specific training needs and tailored ways to meet them,
- (3) negotiate with each state to reach a minimum frequency for physical inspections of all its tanks, and
- (4) present to the Congress an estimate of the total additional resources the Agency and states need to conduct the training, inspection, and enforcement actions necessary to ensure tank compliance with federal requirements.

In addition, the Congress may want to consider EPA's estimate of resource needs and determine whether to increase the resources it provides for the program. For example, one way would be to increase the amount of funds it appropriates from the trust fund and allow states to spend a limited portion on training, inspection, and enforcement activities, as long as cleanups are not delayed. The Congress may also want to (1) authorize EPA to require physical inspections of all tanks on a periodic basis, (2) authorize EPA to prohibit fuel deliveries to tanks that do not comply with federal requirements, and (3) require that states have similar authority to prohibit fuel deliveries.

CONTACT AND ACKNOWLEDGMENTS

For further information, please contact John Stephenson at (202) 512-3841. Individuals making key contributions to this testimony were Fran Featherston, Rich Johnson, Eileen Larence, Gerald Laudermilk, and Jonathan McMurray.

Mr. GREENWOOD. Thank you for your testimony.

Mr. Hirsch, you are recognized for 5 minutes for your testimony. Thank you for being with us.

TESTIMONY OF ROBERT M. HIRSCH

Mr. HIRSCH. Thank you, Chairman Greenwood and other committee members. I appreciate the opportunity to appear before the subcommittee to testify on the findings of the U.S. Geological Survey's studies on water quality issues related to MTBE.

The mission of the USGS is to assess the quantity and quality of the earth's resources and to provide information that will assist resource managers and policymakers at the Federal, State, and local levels in making sound decisions. Assessment of water-quality conditions and research on the fate and transport of pollutants in water are important parts of the overall mission of the USGS.

My written testimony covers the results of several studies of MTBE that we have conducted over the past years, and I request that my full remarks be entered into the record, and I will present a general overview of these findings.

It is important to note that USGS studies of MTBE generally used detection limit levels of .2 micrograms per liter of water. This

is a level that is 100th of the EPA consumer advisory level of 20 micrograms per liter.

We use these low detection levels to help enhance our understanding and early warning capability, but it must be understood that a detection does not necessarily mean that there is a taste, odor, or health problem.

Our focus on MTBE began as a result of some early findings from our National Water Quality Assessment Program in 1993. NAWQA, as this program is called, is a regional and national scale resource assessment program.

Initial monitoring data from 700 wells that were randomly distributed across urban and agricultural settings, and analyzed for a broad array of volatile organic compounds, pesticides, and other contaminants, showed that 25 percent of the urban wells, and 1 percent of the agricultural wells, had detectable amounts of MTBE.

Most of those detections were at low concentrations, and only six of the 200 urban wells had concentrations that exceeded the EPA consumer advisory level. At the time MTBE was a chemical for which usage had increased dramatically in recent years, and we knew that it moved in the subsurface differently from other gasoline components.

And thus even though it was detected in few wells and at very low levels, we believed that it would be prudent to continue studying it at many locations over a period of several years to learn more about its national distribution and fate.

Since our early study in 1993, the USGS has sampled over 4,200 wells or springs for MTBE and a wide range of other compounds. Nationally, only 5 percent of the wells sampled even had detectable amounts of MTBE. However, in areas of high MTBE use, MTBE was detected in about 20 percent of the wells.

It is important to note that in this entire study of 4,200 wells, only one domestic well exceeded the EPA advisory level, and no community water supply wells exceeded the EPA advisory level.

Our data suggests that most of the higher concentrations of MTBE that we do observe are associated with leaking underground storage tanks. These instances of contamination are likely to be the result of a legacy from older tanks.

Recent investments all across the Nation to remove or to replace many tanks and to upgrade tanks that are still in use are expected to significantly decrease the frequency of gasoline leaks, and thus this problem should diminish with time. At this point, this is only a hypothesis.

Our continued monitoring will help to determine if these postulated trends are a reality. We also conduct research on the fate and transport of MTBE in ground water and surface water. Our research is demonstrating that MTBE does biodegrade under a wide range of environmental settings, although at a slower rate than many of the components of traditionally formulated gasoline.

These ongoing studies have important implications for predicting the future concentrations of MTBE in water where contamination has already occurred. These results are important for the design and selection of remediation plans.

There are multiple strategies for dealing with situations where MTBE contamination of ground water has taken place, and these

should include strategies that take maximum advantage of the natural attenuation that we observe in our research.

More research is needed to help provide guidance on the most cost effective strategies for protecting drinking water sources in those areas that have become contaminated. I also believe that more research is needed to explore the water quality impacts of possible alternatives to MTBE.

In summary, the USGS has not found widespread high level MTBE contamination of rivers, reservoirs, or ground water that are used as sources of community water systems. We have, however, identified MTBE and some other volatile organic compounds fairly frequently in ground water at concentrations below the EPA advisory level.

We believe that it is prudent to continue our monitoring and research so that we can verify that the threat remains relatively low and to further the understanding of this chemical to help protect the water resources for the future.

I wanted the chairman to know that we do have some data specifically to Bucks County, Pennsylvania, and that these results are very consistent with the national patterns. And we have just begun a State-wide study of MTBE in Pennsylvania in cooperation with the Pennsylvania Department of Environmental Protection, and we would be happy to provide you or your staff with briefings on this work.

I appreciate the opportunity to testify before this subcommittee on the results of the USGS assessments, and research on MTBE, and I am happy to try to respond to any questions the subcommittee may wish to ask. Thank you, Mr. Chairman.

[The prepared statement of Robert M. Hirsch follows:]

PREPARED STATEMENT OF ROBERT M. HIRSCH, ASSOCIATE DIRECTOR FOR WATER,
U.S. GEOLOGICAL SURVEY, U.S. DEPARTMENT OF THE INTERIOR

Chairman Greenwood and other committee members, I appreciate the opportunity to appear before the Subcommittee on Oversight and Investigations to testify on the findings of U.S. Geological Survey (USGS) studies on water-quality issues related to methyl tertiary-butyl ether, commonly referred to as MTBE.

As you may know, the mission of the USGS is to assess the quantity and the quality of the earth's resources and to provide information that will assist resource managers and policy makers at the Federal, State, and local levels in making sound decisions. Assessment of water-quality conditions and research on the fate and transport of pollutants in water are important parts of the overall mission of the USGS.

USGS studies over the past 8 years have shown that MTBE typically is present at very low concentrations in shallow ground water within areas where MTBE is used. Our studies also suggest that MTBE levels do not appear to be increasing over time and are almost always below levels of concern from aesthetic and public health standpoints. The few locations in our database with high concentrations of MTBE may be associated with leaking underground storage tanks.

Based on comparisons with the U.S. Environmental Protection Agency's (USEPA) drinking water advisory, the health threat to water supplies is small compared to other water-related issues. MTBE is primarily an aesthetic (taste and odor) problem. However, we believe it may be prudent to continue our monitoring and research within available resources so that we can verify that the threat remains low and to further the understanding of this chemical to contribute to effective strategies to protect our Nation's water supplies and to efficiently remediate those ground waters that have become contaminated.

The results I will present today come from about a decade of sampling and study of MTBE and other Volatile Organic Compounds (VOCs). MTBE is one of about 60 VOCs that we measure on a routine basis in our water-quality studies.

The single largest study we have made of MTBE is part of our National Water Quality Assessment (NAWQA) Program. Based on initial monitoring data for wells

sampled in 1993-94 in the NAWQA Program, we published a report on the occurrence of MTBE in shallow ground water in urban and agricultural areas. At that time our data set was fairly small—about 200 randomly selected wells in urban areas and 500 randomly selected wells in agricultural areas. We reported finding MTBE in about 25 percent of urban wells and 1 percent of agricultural wells. Many of the MTBE detections were low concentrations. In fact, only 3 percent of the urban detections exceeded 20 micrograms per liter, the lower limit of USEPA's consumer advisory for taste and odor. Also, many of the urban wells that contained MTBE were located in Denver, Colorado, and in New England, both areas with extensive use of MTBE prior to our sampling. At the time, MTBE was a chemical for which usage had increased dramatically in recent years and we knew it moved in the subsurface differently from other gasoline components. Thus, even though it was detected in few wells and at very low levels, we believed it would be prudent to continue studying it at many locations and over a period of several years to learn more about its national distribution and fate.

Since our first report in 1995, we have sampled additional wells in the NAWQA Program. This now gives us much better coverage of aquifers across the Nation. For the period 1993-2000, we sampled 4,260 wells (or springs) for MTBE and a wide range of other compounds. Of this total, 396 are public water-supply wells; 1,847 are domestic wells; and 2,017 are monitoring wells (or other wells not used for drinking water). At a reporting level of 0.2 micrograms per liter (a level that is one one-hundredth of the USEPA advisory level), we detected MTBE in 5.2 percent of the wells sampled. Most of the MTBE detections are low concentrations. None of the public water-supply wells and only one domestic well had MTBE at a concentration above the lower limit of USEPA's advisory. Through our interpretations of this large data set we have also determined that low-levels of MTBE are detected in about 1 out of 5 wells in MTBE high-use areas. Although we do not expect to see a great change in these results over time, we recognize that there may be a delay in the detection of MTBE in some wells—particularly those that are deeper and may be farther from the source of contamination. MTBE is the second most frequently detected volatile organic compound (VOC). Chloroform, a drinking-water disinfection by-product and a commercial solvent, is the most frequently detected VOC.

Based on our NAWQA findings and interests of other agencies, we have undertaken two allied, large-scale studies to further our understanding of the occurrence of MTBE and other VOCs. We have completed a study in cooperation with the USEPA's Office of Ground Water and Drinking Water. For the period 1993-98, we have compiled information on the occurrence of MTBE and other VOCs in drinking water supplied by Community Water Systems in 12 States in the Northeast and Mid-Atlantic Regions of the United States. Parts of these Regions are designated Reformulated Gasoline (RFG) Areas and, in general, these RFG Areas have used MTBE in gasoline in large amounts for many years. USGS obtained the MTBE/VOC data from each State's drinking-water program. We then randomly selected about 20 percent of the almost 11,000 Community Water Systems in the study area for our analysis. States with MTBE data included Connecticut, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, Vermont, and Virginia. Data for MTBE were not available for Delaware and Pennsylvania, at the time the study was completed.

At a reporting level of one microgram per liter, about 9 percent of the Community Water Systems had detectable MTBE in their drinking water; however, most of the detections were low concentrations. Ten Community Water Systems had MTBE concentrations that equaled or exceeded the lower limit of the USEPA advisory, or about 1 percent of all Community Water Systems with MTBE data. We also confirmed that MTBE was detected more frequently in RFG Areas than elsewhere in the two Regions. Furthermore, larger Community Water Systems located in urban centers had a larger incidence of MTBE detections.

We are also working with the Metropolitan Water District of Southern California, and the Oregon Graduate Institute of Science and Technology, to complete a study of MTBE, other ether gasoline oxygenates, and other VOCs in select reservoirs, rivers, and wells that supply Community Water Systems. This study was partly funded through the American Water Works Association Research Foundation (AWWARF). We are in the final year of this 4-year project.

For this study, we tested the source water of 954 randomly selected Community Water Systems, including 579 wells, 171 rivers, and 204 reservoirs. Samples were collected in all 50 States and Puerto Rico, and varied sizes of systems were included. All sampling for this project is completed; however, some of our intended interpretations and report writing are not yet completed and peer reviewed. Initial findings, which were reported on June 20, 2001, at the Annual Conference of the American Water Works Association, were similar to our findings noted earlier in this state-

ment. Specifically, when detected in source waters, the concentrations of MTBE were almost always below the USEPA advisory. However, MTBE was found in about 9 percent of all sources sampled (at a reporting level of 0.2 micrograms per liter), and it was the second most frequently detected VOC. A larger detection frequency of MTBE was found in surface-water sources (14 percent), than ground-water sources (5 percent). In general, the detection of MTBE increased with increasing size of the Community Water Systems. MTBE was detected in about 4 percent of Community Water Systems serving less than 10,000 people, and in nearly 15 percent of systems serving greater than 50,000 people. Many of the surface-water sources sampled in the AWWARF study were large rivers and reservoirs that had recreational watercraft usage. Older models of watercraft motors are known to release a fraction of non-combusted gasoline to water and this, in part, may explain the larger occurrence of MTBE in surface-water sources.

We also conduct research on the fate and transport of MTBE in ground water and surface water through the USGS Toxic Substances Hydrology Program. In this program, we explore the range of geochemical and microbiological processes that determine how MTBE will behave when it enters soil, ground water or surface water. This research is demonstrating that MTBE does biodegrade under a wide range of environmental settings although at slower rates than many of the components of traditionally formulated gasoline. These ongoing studies have important implications for predicting the future concentrations of MTBE in water, where contamination has already occurred. These results are also important for the design and selection of remediation plans.

As part of the Toxic Substances Hydrology Program research, USGS scientists have demonstrated that naturally occurring microorganisms can biodegrade MTBE in many hydrologic environments, and in some cases, to harmless by-products. In some situations, however, biodegradation may be incomplete and tert-butyl alcohol (TBA) can be formed. Especially noteworthy are the observations that MTBE biodegrades in ground water and soil where sufficient oxygen is present and in bed sediments of streams, lakes, wetlands, and estuaries where MTBE-contaminated ground water can ultimately discharge. Essentially, these environments can be considered to be natural sinks for MTBE removal. As noted earlier, MTBE is expected to degrade slower in ground water than gasoline hydrocarbons of traditional gasoline formations. The length of time required to complete this removal is currently a topic of ongoing investigation.

The USGS has actively participated in two previous Federal reviews of MTBE and other oxygenates in gasoline. A Blue Ribbon Panel was appointed by the Administrator of the USEPA to investigate the air-quality benefits and water-quality concerns associated with oxygenates in gasoline, and to provide independent advice and recommendations on ways to maintain air quality while protecting water quality. In 1998-1999, Dr. John Zogorski of the USGS served as a water-quality consultant to the Blue Ribbon Panel and three USGS scientists testified before the Panel. An important finding of the Blue Ribbon Panel is that the major source of MTBE ground-water contamination appears to be releases from underground gasoline storage systems. Many of these tanks have been removed permanently or upgraded in the 1990s, and thus this source is likely to diminish in the coming years. Other major sources of water contamination were stated to be from small and large gasoline spills and from recreational watercraft, especially those with older model 2-cycle motors. USGS has documented low levels of MTBE in urban air, urban precipitation, and urban stormwater, and these sources may cause low concentrations of MTBE in surface water and ground water. MTBE has also been found in spills of home fuel oil in Northeastern States.

During 1995-96, at the request of the USEPA and the Office of Science and Technology Policy (OSTP), the USGS co-chaired an interagency panel to summarize what was known and unknown about the water-quality implications of the production, distribution, storage, and use of fuel. Our efforts were published in 1997 as a chapter in a report entitled "Interagency Assessment of Oxygenated Fuels" prepared by the National Science and Technology Council, Committee on Environment and Natural Resources. The chapter summarizes the scientific literature and data on the sources, occurrences, concentrations, behavior, and the fate of fuel oxygenates in ground water and surface water. We also discussed the implications for drinking water and aquatic life, and made recommendations of information needed to better characterize the occurrence of MTBE and other oxygenates in the Nation's drinking-water supplies.

Furthermore, last year, USGS and Oregon Graduate Institute scientists co-authored a feature article in the journal *Environmental Science and Technology*, a publication of the American Chemical Society. A salient part of the article summarized important information about MTBE including: growth in production; solubility,

transport and degradation in ground water; releases from leaking underground fuel tanks; and the effect of select factors, such as aquifer recharge, the presence of low permeability stratum, and water utility pumping rates. This information helped to determine the likelihood of MTBE reaching community water-supply wells. Based on available but admittedly incomplete data for 31 States, the authors determined that about 9,000 community wells may have one or more leaking underground storage tanks nearby (i.e., within 1-km radius of the well). Because detailed information on the community wells, storage tanks, and hydrogeology were not available, the authors could not determine the number of wells at risk.

Unfortunately, some of the press coverage of this article inaccurately stated that 9,000 drinking-water wells were contaminated with MTBE. As stated in the journal publication, not all community wells with gasoline releases nearby are at risk because not all gasoline releases contain MTBE, and not all MTBE-gasoline releases are sufficiently large to pollute a nearby well. Also, many wells draw water from the deeper zones of aquifers and many wells are largely isolated from land-surface contamination by low permeability stratum, technically called aquitards. Based on these factors, data from the studies mentioned previously, and a recent survey by others, we would estimate that the number of community wells contaminated is far lower than 9,000 for 31 States.

In summary, the USGS has not found widespread, high-level MTBE contamination in rivers, reservoirs, and ground water that are actively used as the sources for Community Water Systems. Furthermore, we have not found such contamination in public wells and domestic wells sampled in our NAWQA Program, or in the drinking water of Community Water Systems in 10 Northeastern and Mid-Atlantic States. We have, however, identified MTBE (and some other VOCs) fairly frequently in ground water, source water, and drinking water at concentrations below USEPA's advisory. We also conclude that the frequency of detection of MTBE is larger in RFG Areas, in comparison to other areas of the Nation. Approximately 85 million people reside in RFG areas that use MTBE extensively, and drinking water in these areas is provided almost equally from surface water and ground water.

There are multiple strategies for dealing with situations where MTBE contamination of ground water has taken place and these should include strategies that take maximum advantage of the natural attenuation that we observe in our research. Within available resources, more research would be helpful to provide guidance on the most cost-effective strategies for protecting drinking water sources in those areas that have become contaminated.

I appreciate the opportunity to testify on the results of USGS assessments and research on MTBE. I am happy to try to respond to any questions of the Subcommittee.

Mr. GREENWOOD. Thank you for your testimony, Mr. Hirsch. The Chair recognizes himself for 5 minutes for questions. Let me address the first one to you, Mr. Holmstead, if I could.

The issues involving MTBE, and ethanol, and RFG, are not new. We have been debating them for years, but the problem as I see it continues. So, a rather simple, if direct, question.

Ignoring for a minute any limitations placed on you by relevant statutes, do you think we should do anything to reduce the use or phaseout MTBE; and are you personally comfortable with the continued use of MTBE gasoline? I lied when I said I was going to be easy on you.

Mr. HOLMSTEAD. Well, it is a little hard for me to switch into a world where I am ignoring the legal constraints posed by the Clean Air Act and other statutes, and as you know, my expertise is in the Clean Air Act and the environmental benefits of oxygenates, as opposed to the problems with the water quality.

I know that we are troubled, and Administrator Whitman is troubled, by the continuing contamination of drinking water and the ground water. I have heard recent reports suggesting that perhaps the problem is not as big as we expected a couple of years ago.

And if that is the case that would be good news. In terms of how I or we as an administration would make the final decision, I guess

what I should say is that we will be getting out a proposal, and it will be ready to go into inter-agency review within the next month or so.

And that will include an exploration of the possibility of phasing down or phasing out MTBE, and that is a commitment that Governor Whitman has made. Until we are able to see the analysis that comes in in response to that proposal, and to better understand what the tradeoffs are, I am a little reluctant to say right now that this is how we will or won't proceed.

Mr. GREENWOOD. Now, that would be pursuant to TSCA, and that is a TSCA rulemaking, and how long under the best of circumstances do you think realistically that would take?

Mr. HOLMSTEAD. Before a final rule could come out, again I am not a TSCA expert, but my understanding is that is likely to be at least a couple of years.

Mr. GREENWOOD. My understanding is that it is more likely to be five. At least that is based on history. I have been informed by oil refiners for some time that if they had the option, and if they didn't have the prescription for the 2 percent oxygenate, that they could in fact provide motors with reformulated gasoline that would meet all of the air quality standards in the Clean Air Act and do it without MTBE.

I would like each of you to comment on whether you agree with that statement, and whether you believe if that is in fact a possibility.

Mr. HOLMSTEAD. I think they can certainly do it without MTBE. Whether they can do it without an oxygenate I think is a more difficult question. I don't think anybody believes that you need to have MTBE in order to satisfy the performance requirements of the Clean Air Act.

There is a more difficult question about whether you can do it without having some form of oxygenate, and I guess one of the concerns we have is whether the current performance standard captures all of the benefit from oxygenate, and that is something that we are looking at.

But I think in response to your question that we would agree that as long as there is an oxygenate, then you could meet the performance requirements without MTBE.

Mr. GREENWOOD. Mr. Kripowicz, would you like to comment on that?

Mr. KRIPOWICZ. Yes, sir. I am a technology man, and so I would say that probably the refiners are correct, and that in some fashion they would be able to meet the RFG requirements. But I would say that at this point, at least in the short term, it would have a significant impact on price and more than likely on quantity, too, on supply.

Mr. GREENWOOD. Are you able to quantify that increase in price?

Mr. KRIPOWICZ. No, sir. You would have to do some analysis to look at that, but there are no easy ways to do it. That we know of right now. Again, I suspect that there are technical feasible ways to do it, but we would have to get that kind of data from the industry to be able to judge the price impact.

Mr. GREENWOOD. I don't know whether either of the other witnesses feel that you have the capacity to respond to that. Nodding, Mr. Stevenson says no, and Mr. Hirsch?

Mr. HIRSCH. I don't have the expertise at all to comment on the question of the air quality impacts, but the question arises in my mind is do we fully understand the water quality impacts associated with any of the possible alternatives.

There has been quite a bit of research on behavior of MTBE in water since the mid-90's, and I am not aware that there has been anywhere near that amount of research on any of the alternatives as to what kinds of issues one might be entering into with some of the alternatives from a water quality perspective.

Mr. GREENWOOD. My time has expired, and the Chair recognizes the gentleman from Texas, Mr. Green, for 5 minutes.

Mr. GREEN. Thank you, Mr. Chairman, and our goal is to make sure that we are through before we go vote, and so you don't have to wait for us, but the second panel will. Let me first start out with, one, I appreciate the panel being here, and Mr. Chairman, you have done a good job of getting a good cross-section.

First, Mr. Hirsch, on the U.S. Geological Survey, let me again hear you. You said in the USGS Survey that you found that MTBE was well below the EPA advisory levels?

Mr. HIRSCH. In the vast majority of cases. We see a few cases that exceed it, but they are in the nationwide range of a very few percent of the cases.

Mr. GREEN. And again it was a very low threat in your testimony. Mr. Kripowicz.

Mr. KRIPOWICZ. Yes, sir.

Mr. GREEN. Okay. I do good with Spanish names being from Texas.

Mr. KRIPOWICZ. You are doing quite fine with mine.

Mr. GREEN. In your testimony, you talked about the supply problems, and we heard under questioning from the chairman about there could be another substance used for oxygenate other than MTBE, which is ethanol. There is no other substance other than ethanol or MTBE that could be used as an oxygenate; is that correct?

Mr. KRIPOWICZ. There may be other substances, but the supply of substances would be quite small. You would need a period of time in order to be able to produce them in quantity, which is why you end up with a supply problem in the immediate term.

Mr. GREEN. And the concern that you have shared in your testimony as to the refiners, and that it would be a supply problem, you can pipeline MTBE, for example, from Houston to California, or to New Jersey. But how do you get ethanol long distances?

Mr. KRIPOWICZ. That is something that the system has to look at, because for long distances ethanol has a tendency to pick up water. So you have to look at different methods of transporting it or specific dedicated piping.

Mr. GREEN. So with current technologies ethanol is not as easy to transport long distances as MTBE?

Mr. KRIPOWICZ. That's correct, sir.

Mr. GREEN. On the GAO maps, those are really good. If we could put up that last map, it showed the compliance with Federal re-

quirements varies among the States, the active tanks. I think it was the third map or maybe not. Maybe it was the first one.

The compliance is unknown, and I know that the concern is that, for example, in New Jersey and some of the States, do some of the States that are not in compliance, are they some of the 15 that you know of that have banned the use of MTBE?

When you look at that map, the darker the State, the less in compliance they are. And I don't have a list, but I know that California and some of the northeastern States would seem like their compliance is either unknown or they are less than 70 percent reported in compliance.

And I was just wondering if there was a correlation between not inspecting the tanks or compliance with Federal requirements in deciding, well, we don't inspect, and so we will just ban the use of MTBE.

Mr. STEPHENSON. We didn't do the analysis specifically, but I don't think there would be a correlation between the tank program and MTBE. I don't think they first considered have we banned MTBE and then that would have a bearing on the inspection program or the compliance program that they put up. But we could do that analysis for you.

Mr. GREEN. Well, it would be interesting, because I know that California is the largest State, and they are one of ones that has either—is it 30 to 70 percent tanks reported to be in compliance?

Mr. STEPHENSON. Right.

Mr. GREEN. And I know that they are going through the process now to ban MTBE.

Mr. STEPHENSON. Well, they have already done it.

Mr. GREEN. And some other States may be going through the process, and I noticed that New Jersey actually is not in compliance. We don't know—

Mr. STEPHENSON. Well, they did not have enough data for us to meaningfully determine whether they were in compliance or not. Now, remember that all of these were based on surveys of the State Program Coordinators for the tank program, and some of them inspect and some of them don't. So some of them are based on best guesses in some cases. They don't have actual data on all their tanks.

Mr. GREEN. And I guess my concern would be that maybe if we are having a problem with any substance in our soil that we might want to look at storage tanks first instead of just banning a certain substance, because what else might be found other than MTBE that is leaking from that storage tank.

Mr. STEPHENSON. There are lots of other dangerous things that leak from tanks other than MTBE.

Mr. GREEN. My bottom line is that anything that makes my car or truck run, I don't want to drink or taste, whether it is MTBE, a can of paste, or something much worse.

Let me now talk with our EPA. How come the EPA decided to do, and I know that it was before your watch, but decided to use the Toxic Substances Act? I am not aware of anything, any study that has been shown—and I don't know, as maybe the EPA is now—that MTBE may smell and taste bad, but considering other substances, it is not toxic.

Are you aware of any studies that the EPA has, or has been aware of?

Mr. HOLMSTEAD. I know that there are some studies suggesting possible health effects. I know that there are ongoing studies now to look at that very question, but I think it is fair to say that the bigger issues surrounding MTBE have to do with the fact that it makes water perhaps unusable.

Now, in terms of the Toxic Substances Control Act, it is not really limited to—the EPA doesn't have to make a specific finding that something is toxic in order to be able to address it under that Act. But there is this balancing test between risk and benefit.

And so as you well know, the issue of whether something is toxic or not is always a difficult question, and the dose is really the thing that matters. So almost anything is toxic at a high enough dose.

Mr. GREEN. Okay. But today we had testimony from the USGS that said that it is well below or below the levels that the EPA says is their own advisory levels, and it is a low threat.

And in your testimony, you talked about the benefits from the very first year of oxygenated fuels for air quality. And has there been any lessening of that since 1995, and that your testimony said that each year we have seen much cleaner air?

And I know coming from Houston that we benefit from oxygenate fuels, and hopefully L.A. will be dirtier this year than we are, and it will be because of oxygenated fuels.

Mr. HOLMSTEAD. Again, it is important to remember that the RFG program doesn't require the use of MTBE. It is true that that program has been very successful in helping to clean up the air, but that program doesn't require the use of MTBE. So it is not quite right to say that it is MTBE that has cleaned up the air.

Mr. GREEN. Mr. Chairman, let me just put something into the record, or at least mention it. Since Europe also uses MTBE for their oxygenates, has the EPA taken time to look at how European countries, the European Union has responded to MTBE?

Mr. HOLMSTEAD. I'm sure the answer is yes. I can't tell you what they are. I think in Europe that MTBE is used strictly as an octane booster. It is not used in the same quantities, because I don't believe that they have a specific oxygenate mandate. But they do use MTBE, but I believe it is in smaller concentrations.

Mr. GREEN. Well, what brought it up was the testimony from the Department of Energy that said that if we ban MTBE that it would limit our ability to bring gasoline, for example, from Europe.

And so that brought up, well, what is Europe doing, because typically they are much more environmental friendly than we are. And you might check to see that there is only one consideration of banning MTBE, which was Denmark. But they identified it as a leaky storage tank problem, and that is how they were addressing it, and maybe we need to look at that.

Mr. GREENWOOD. The gentleman's time has expired, and I would inform the panel, the witnesses, that we have a series of votes that should take about 20 minutes. And I would ask your forbearance that you would remain here.

It would be my expectation that we may have other members after this vote come back and want to pose questions to you. So we will recess until approximately 3:30.

[Brief recess.]

Mr. GREENWOOD. The committee will reconvene. Without objection, the opening statement of the chairman of the full committee, Billy Tauzin, will be made a part of the record.

Does the gentleman from Texas, Mr. Barton, care to inquire?

Mr. BARTON. No.

Mr. GREENWOOD. Does the gentleman from New Hampshire care to inquire?

Mr. BASS. I just want the facts, all the facts.

Mr. GREENWOOD. I should give fair warning that if he passes, this panel will be dismissed, and we will go to the second panel.

Mr. BARTON. If we are on the first panel, I will pass.

Mr. GREENWOOD. In that case, gentlemen, we kept you here for no reason whatsoever. But more billable hours for everyone else. Thank you for your testimony and we appreciate it.

And we would call the second panel, which consists of Ms. Denise Chamberlain, from the Pennsylvania Department of Environmental Protection. She is the Deputy Secretary for Air, Recycling and Radiation Protection; Mr. Tom Adams, President of the Oxygenated Fuels Association; Mr. Bob Dinneen, President and CEO of the Renewable Fuels Association; Mr. David Kahlenberg, who is a homeowner from my County of Bucks, Doylestown, Pennsylvania; Mr. A. Blakeman Early, a environmental consultant to the American Lung Association; Mr. Michael Ports, President of the Ports Petroleum Company, who will testify on behalf of the National Association of Convenience Stores and the Society of Independent Gasoline Marketers of America; and Mr. Edward H. Murphy, Downstream General Manager, of the American Petroleum Institute.

If you lady and gentlemen will be seated. We welcome each and every one of you, and thank you for your forbearance this afternoon. I know that you have been waiting a long time to testify.

I assume that each of you have been informed that this is an investigative hearing, and therefore it is the custom of our committee to take testimony under oath. Do any of you object to offering your testimony under oath?

Seeing no objection, I should inform you that the rules of the committee and the rules of the House entitle you to be represented by counsel. Do any of you care to be represented by counsel as you offer your testimony? Seeing no such interest, I would ask you if you would rise and raise your hand right, and I will administer the oath.

[Witnesses sworn.]

Mr. GREENWOOD. So saying, you are all under oath, and we welcome your testimony, and we will begin with you, Ms. Chamberlain. Thank you for being here. You are recognized for 5 minutes for your testimony.

TESTIMONY OF DENISE K. CHAMBERLAIN, DEPUTY SECRETARY FOR AIR, RECYCLING, AND RADIATION PROTECTION, PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION; TOM ADAMS, PRESIDENT, OXYGENATED FUELS ASSOCIATION; BOB DINNEEN, PRESIDENT AND CEO, RENEWABLE FUELS ASSOCIATION; DAVID KAHLENBERG, HOMEOWNER; A. BLAKEMAN EARLY, ENVIRONMENTAL CONSULTANT, AMERICAN LUNG ASSOCIATION; MICHAEL PORTS, PRESIDENT, PORTS PETROLEUM COMPANY, INC., ON BEHALF OF NATIONAL ASSOCIATION OF CONVENIENCE STORES AND SOCIETY OF INDEPENDENT GASOLINE MARKETERS OF AMERICA; AND EDWARD H. MURPHY, DOWNSTREAM GENERAL MANAGER, AMERICAN PETROLEUM INSTITUTE

Ms. CHAMBERLAIN. Mr. Chairman, and members of the subcommittee, my name is Denise Chamberlain, and I am the Deputy Secretary of Air, Recycling, and Radiation Protection at the Pennsylvania Department of Environmental Protection.

I am accompanied by Arleen Shulman from our Air Quality Program.

On behalf of DEP Secretary Hess, I would like to thank Chairman Greenwood, and Ranking Member Deutsch, and the Subcommittee on Oversight and Investigations for the opportunity to speak to you today about a problem faced not only by Pennsylvania, but by many States in our Nation: meeting protective air quality standards without compromising our environmental and public health responsibilities for other media.

As you know, the Federal Clean Air Act directly mandates that certain areas of the country use reformulated gasoline with its 2 percent oxygen mandate. In Pennsylvania, this affects the five-county Philadelphia area. While the RFG program does not mandate specific oxygenates, economics has led refiners in the Northeast/Mid-Atlantic region to use MTBE to meet the oxygen requirement.

Reformulated gasoline has been an important part of our overall strategy in the Philadelphia area to reduce automotive exhaust emissions of ground level ozone and toxins. Its use has had a positive air benefit by lowering cancer risks and respiratory effects to people exposed to vehicle pollution, but the importance of oxygenates in reformulated gasoline's air benefits is questionable.

A cruel dilemma has resulted for Pennsylvania and many other States from MTBE's use. Because of the oxygen mandate in reformulated gasoline requiring high levels of MTBE in gasoline, MTBE has contaminated our ground water. Six million Pennsylvanians rely on ground water for their drinking water supplies. Even in its tiniest proportions, 5 parts per billion, MTBE has an easily detectable smell—turpentine—making the drinking water supplies virtually undrinkable.

Unlike other components of gasoline, MTBE dissolves and spreads more readily into the ground water, and does not degrade easily, and is difficult and costly to remove.

Accidental releases at dispensing sites, leaking product pipelines, and leaks from underground storage tanks, have forced wells to close, run up millions of dollars in clean up costs, spurred State

legislative action, sparked lawsuits, and has generated significant national concern about the continued use of MTBE as an additive in gasoline.

In Southeast Pennsylvania, the area using reformulated gasoline with its elevated MTBE levels, the effect has been most dramatic. Over 40 percent of the public and private wells affected by MTBE contamination in Pennsylvania are in our southeast region.

For example, in Bucks County, Pennsylvania, one release from an underground storage tank affected private residential wells in two municipalities. In an area within 2,500 feet of the leak, 27 public drinking water wells were contaminated.

Twenty percent of those wells had MTBE concentrations above the EPA advisory level. Another example, in Blue Bell, Montgomery County, 13 private water supplies were impacted by the release from one location.

MTBE contamination problems are not restricted to Southeast Pennsylvania. Within the Commonwealth, 1,619 sites have MTBE ground water contamination. Of those sites, contamination has migrated to 45 public water supply wells, and 363 single family wells.

Since 1998, the Commonwealth alone has spent almost \$7 million on cleanup, and another \$4.2 million is budgeted for future cleanups. Now, we have to deal with this legacy of contamination.

Some of the initiatives in our action plan include continuing to work with USGS to study the distribution and concentrations of MTBE in Pennsylvania's ground water in high MTBE use areas, and to estimate the vulnerability of ground water in various geologies. The study will be completed in June 2002.

We are working with your General Assembly to provide additional revenues to adequately address cleanups that address catastrophic releases of MTBE than our current program allow.

Implementing one of our Nation's leading third-party tank inspection programs that has been used as a model by EPA. This year, the Underground Storage Tank third-party and DEP inspectors visited more than 2,800 sites involving over 5,000 tank inspections.

Enforcing ground water and soil cleanup standards put in place under our Act 2 Land Recycling Program and corrective action initiatives.

Working with other Mid-Atlantic States and EPA to develop tools to assess the extent of MTBE contaminants in ground water and to establish inspections and corrective action priorities, and increasing education and outreach on leak detection and MTBE impacts.

We have talked about what we have done to address the MTBE already in the ground water and to prevent contamination in the future from leaks and spills. It is clear that our actions are addressing the effect of the problem, but we need your help to deal with the root cause.

The long term solution, however, is to reduce or eliminate the use of MTBE in reformulated gasoline. We need to do this in a way that the air quality benefits realized by reformulate gasoline will not be lost and in a manner that will not significantly disrupt our Nation's fuel supply, or force Americans to pay exorbitant prices at the pump.

How can Pennsylvania do this? The answer is that we can't do it alone. Some States have tried to go their own way. California and New York, among others, passed State legislation that has banned the use of MTBE.

The result in these States has been considerable uncertainty about what happens after the bans take effect. Without relief from the Federal Government regarding the oxygenate requirement, MTBE banning States must use ethanol to meet the requirement.

Estimates appear to change almost daily about whether ethanol can be produced in sufficient quantities to meet California requirements, and even if it can be produced, California is now questioning if that supply can be adequately transported to California refineries and fuel terminals.

We believe that Congress has the ability and the opportunity to provide a stable solution to the problem, as well as remove the incentives that States have at this time to enact MTBE bans and invent special fuels to serve their air quality and water supply needs.

Pennsylvania continues to support the legislation introduced by Representative Greenwood that would control or limit the use of MTBE on a national level, and allow a State waiver from 2 percent oxygenate requirement in reformulated gasoline. We think that this is a reasonable compromise in our efforts to have clean air, but not at the expense of polluting our ground water.

This concludes my testimony right now, and I would like to have the rest of it summarized in the testimony. We would be happy to answer any questions you might have.

[The prepared statement of Denise K. Chamberlain follows:]

PREPARED STATEMENT OF DENISE K. CHAMBERLAIN, DEPUTY SECRETARY FOR AIR, RECYCLING AND RADIATION PROTECTION, PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION

Mr. Chairman and members of the Subcommittee: Good morning. My name is Denise Chamberlain and I am Deputy Secretary of Air, Recycling and Radiation Protection for the Pennsylvania Department of Environmental Protection. I am accompanied by Arleen Shulman from our Air Quality Program.

On behalf of DEP Secretary Hess, I would like to thank Chairman Greenwood, Ranking Member Deutsch, and the Subcommittee on Oversight and Investigations for the opportunity to speak with you about a problem faced not only by Pennsylvania but also by many states in our nation: meeting protective air quality standards without compromising our environmental and public health responsibilities for other media.

As you know, the federal Clean Air Act directly mandates that certain areas of the country use reformulated gasoline (RFG) with its two percent oxygen mandate. In Pennsylvania, this affects the five-county Philadelphia area. While the RFG Program does not mandate specific oxygenates, economics has led refiners in the Northeast/Mid-Atlantic region to use methyl tertiary-butyl ether (MTBE) to meet the oxygen requirement.

Reformulated gasoline has been an important part of our overall strategy in the Philadelphia area to reduce automotive exhaust emissions of ground-level ozone and toxics. Its use has had a positive air benefit by lowering cancer risks and respiratory effects to people exposed to vehicle pollution. But the importance of oxygenates in reformulated gasoline's air benefits is questionable.

A cruel dilemma has resulted for Pennsylvania and many other states from MTBE's use. Because of the oxygen mandate in reformulated gasoline requiring high levels of MTBE in gasoline, MTBE has contaminated our groundwater. Fifty-five percent (55%) of Pennsylvania relies on groundwater for its drinking water supplies. Even in its tiniest proportions, 5 parts per billion, MTBE has an easily detectable smell—turpentine—making drinking water supplies undrinkable. Unlike other components of gasoline, MTBE dissolves and spreads more readily in groundwater, does not degrade easily, and is difficult and costly to remove. Accidental releases

at dispensing sites, leaking product pipelines and leaks from underground storage tanks have forced wells to close, run up millions of dollars in cleanup costs, spurred state legislative action, sparked lawsuits and has generated significant national concern about the continued addition of MTBE in gasoline.

In Southeast Pennsylvania, the area using reformulated gasoline with its elevated MTBE levels, the effect has been most dramatic. Over forty percent (40%) of public and private wells affected by MTBE contamination in Pennsylvania are in our Southeast region. For example, in Bucks County, Pennsylvania, one release from an underground storage tank affected private residential wells in three municipalities. In an area within 2,500 ft of the leak, 27 public drinking water wells were contaminated. Twenty percent (20%) of those wells had MTBE concentrations above the EPA advisory level. Another example—in Blue Bell, Montgomery County, 13 private water supplies were impacted by the release from one location.

MTBE contamination problems are not restricted to Southeast Pennsylvania. Within the Commonwealth, 1,619 sites have MTBE groundwater contamination. 45 are public water supply wells and 363 are single-family wells. Since 1998, the Commonwealth alone has spent almost \$7 million on cleanup with another \$4.2 million budgeted for future cleanups.

Now we have to deal with that legacy of contamination. Some of the initiatives in our action plan include:

- Continuing to work with USGS to study the distribution and concentrations of MTBE in Pennsylvania's groundwater in high MTBE use areas and to estimate the vulnerability of groundwater in various geologies. The study will be completed in June 2002.
- We are working with our General Assembly to provide additional revenues to more adequately fund cleanups that address catastrophic releases of MTBE than our current programs allow.
- Implementing one of the nation's leading third-party tank inspection programs that has been used as a model by EPA. This past year, Underground Storage Tank (UST) third-party and DEP inspectors visited more than 2,800 sites involving over 5,000 tank inspections.
- Enforcing groundwater and soil cleanup standards put in place under our Act 2 Land Recycling program and corrective action initiatives.
- Working with the other Mid-Atlantic States and EPA to develop tools to assess the extent of MTBE contaminants in groundwater and to establish inspections and corrective action priorities.
- And increasing education and outreach on leak detection and MTBE impacts.

We've talked about what we've done to begin to address MTBE already in the groundwater and to prevent contamination in the future from leaks and spills.

It is clear that our actions are addressing the effect of the problem, but we need your help to deal with the root cause. The long-term solution, however, is to reduce or eliminate the use of MTBE in reformulated gasoline. We need to do this in a way that the air quality benefits realized by reformulated gasoline will not be lost and in a manner that will not significantly disrupt our nation's fuel supply or force Americans to pay exorbitant prices at the pump. How can Pennsylvania do this? The answer is that we can't do it alone.

Some states have tried to go their own way. California and New York, among others, passed state legislation that has banned the use of MTBE. The result in these states has been considerable uncertainty about what happens after the bans take effect. Without relief from the federal government regarding the oxygenate requirement, MTBE banning states must use ethanol to meet the requirement. Estimates appear to change almost daily about whether ethanol can be produced in sufficient quantities to meet California's requirements and, even if it can be produced, California is now questioning if that supply can be adequately transported to California refineries and fuel terminals.

If more states are forced to independently ban MTBE in response to the threat to precious water supplies, the logistics of ethanol replacement could become even more problematic. The result could well be fuel supply disruption and higher prices to consumers at a time when our economy, and national priorities, may not be able to afford it.

Congress has the ability and the opportunity to provide a stable solution to the problem as well as remove the incentives that states have at this time to enact MTBE bans and invent special fuels to serve their air quality and water quality needs. Pennsylvania continues to support legislation introduced by Representative Greenwood that would control or limit the use of MTBE on a national level and allow a state waiver from the 2% oxygenate requirement in reformulated gasoline. We think this is a reasonable compromise in our efforts to have clean air but not at the expense of polluting groundwater.

H.R. 20 addresses the major concerns of not only Pennsylvania but also all the other states across the country. It protects water quality through limits on the use of MTBE. It allows states to seek a waiver from the oxygenate content requirements. It calls for regional performance standards that ensure that levels of reductions achieved under the reformulated gasoline program are maintained in areas where waivers are granted and reduces the potential for boutique fuel proliferation. It ensures that adequate lead-time is given to make modifications to our fuel refining and distribution systems that assure adequate fuel supply for all states. It provides the refining industry with the ability to meet the reformulated gasoline requirements without hamstringing them with the unnecessary oxygenate mandate.

In contrast, maintaining the oxygen mandate in reformulated gasoline while phasing out MTBE may ultimately be a mandate for the direct substitution of ethanol. While ethanol, a renewable fuel, definitely can play a role in the energy security of this nation, using it as a direct replacement in the Northeast for MTBE in reformulated gasoline raises air quality issues that require serious consideration involving increased volatile organic compound emissions, in addition to concerns of supply and price.

As the Subcommittee continues to study the issues of MTBE, special fuels and the nation's fuel supply system, we urge you to keep in mind the needs of states like Pennsylvania. We need to continue to reduce air pollution and may need to rely on fuel strategies to do so. Fuels can be a powerful emission reduction measure, as reformulated gasoline and upcoming federal rules lowering sulfur in both gasoline and diesel shows.

So, we ask that Congress give EPA and us the tools to help us protect both air and water and not sacrifice one for the other.

Mr. Chairman, that concludes my testimony. Thank you for providing me with this opportunity to testify.

Mr. GREENWOOD. Thank you. Your testimony in full will be a part of the record.

Mr. Adams, you are recognized for 5 minutes for your testimony. Thank you for being here.

TESTIMONY OF TOM ADAMS

Mr. ADAMS. Mr. Chairman, my name is Tom Adams, and I am the President of Oxygenated Fuels Association, and I am most grateful for the hearing that you having today. It has provided a great deal of balance and understanding to the issue of what is going on.

For a long time, MTBE frankly has been considered something as the skunk at the garden party. It tastes bad, and it smells bad, and it has got a reputation this way and a reputation that way.

I want to present the positive side and then a potential solution to be thinking about, part of which Mr. Gillmor suggested, and part of the direction that you are going in, and to be helpful along the way with that process.

To emphasize I want to start off with the amount that is involved that we are talking about. It is used in 80 to 85 percent of the RFG produced today, and the equivalent for many people in this room, and most everybody understands barrels and stuff, and I don't.

So I had to translate it. Daily in the United States about 220,000 barrels, and that is 9.24 million gallons, or about 3.37 billion gallons of MTBE, are produced for the gasoline supply. We are not talking barrels there. We are talking gallons, and that gives me more of a picture of what it looks like, and it is major.

The health issue is very positive, as has been pointed out in the Washington Post, and the recent study of the U.S. air quality improved, and you mentioned it in your opening statement. It has cut smog, forming pollution emissions by 17 percent, and it is the

equivalent of removing 64,000 tons of harmful pollution from the air.

It has reduced emissions of benzene, which is a known human carcinogen, by 43 percent. And cleaner burning MTBE accounts for a large part of this overall emission reduction. It has a good side to its story and this is a very positive part of it that I think that frequently is forgotten.

It allows for more complete fuel combustion, and it reduces carbon monoxide emissions. It helps during the winter months; smog forming, basic organic compounds in the summer time, and on, and on, and on.

It does have a very positive side to it, and it is a part of the economy as DOE has said earlier with regard to supply and distribution. Hey, guys, we really need to study and look at this for a while before we come up with anything going with regard to a particular direction of whether to do something in a major way, perhaps toward elimination.

The second issue, and I will treat this very quickly, as you asked the question earlier, Mr. Chairman, or I believe it was you, or perhaps a member of the panel, about the health impacts. We have just heard from Ms. Chamberlain and I would like to point out that a consensus has emerged.

Reviews by the scientific panels from the U.S. Government, the national toxicology program, and the State governments, such as California's own carcinogenic identification committee, and even international health organizations such as the World Health Organization's international agency for research on cancer, and more recently the European community, have all declined to name MTBE as a carcinogen.

So when we are looking at this, we hear about MTBE leaking out of a tank, and MTBE being the bad guy. It is not just MTBE. There are a lot of other constituents in gasoline that are truly quite negative and harmful to the environment and to the human beings.

If you find MTBE, it is the canary in the mine shaft. It is saying, hey, you can taste this, and you can smell this, but what is coming along with this are benzene, toluene, and truly carcinogenics that are negative.

And so the bottom line is that we go to the next topic, which is the leaking underground storage tanks. We don't want this stuff coming out. None of us want it in our water supply, and there is no reason for it.

But as the GAO has pointed out in a very thorough report, many States and the Federal Government, even though they are trying very hard to have an effective program are not doing enough to properly and effectively enforce the LUST laws requiring that leaks be detected and stopped before they become Ms. Chamberlain's environmental issue.

We don't have a problem if we have got good tanks, whether they be double-lined recommended by EPA as they are thinking about, and in many instances you even have States where they know a tank is leaking, and there is no law that forbids, and they continue to fill the tank.

Some States do have laws against that and others don't. Much needs to be done in the leaking underground storage tank area.

There is room for that and it is the solution to much of the problem that exists today. We don't know enough about all of the effects of MTBE, or ethanol, or any other future type additives that might be considered as we go down the pike.

MTBE, which is the chosen oxygenate, perhaps wasn't looked at as thoroughly as they might with regard to water solubility, and these new items that they want to use down the line, no one has studied or looked at this, and yet potential decrees are coming to life either to ban it or to let's switch to something else.

We really need to look thoroughly before taking action is what I am saying. The bottom line is supply and distribution. I think DOE covered the area very well. It is just apparent that the cost to the consumer will be quite substantial if you end up with less MTBE in the marketplace.

And in our current situation, and based on a statement that I heard you make this morning on the radio with regard to the current situation we find ourselves in in this world, there is a great deal of concern about keeping things operating, and national security, and to tinker with a system at this point in time in any direction toward a change would not necessarily be wise. A positive action would be working on the underground storage tank system. Thank you.

[The prepared statement of Tom Adams follows:]

PREPARED STATEMENT OF TOM ADAMS, PRESIDENT, OXYGENATED FUELS ASSOCIATION

Chairman Greenwood and Members of the Committee, I want to thank you for this opportunity to appear on behalf of the Oxygenated Fuels Association to address issues related to national energy and fuels policy and the role of MTBE. OFA is the national trade association of manufacturers of oxygenates, principally MTBE. For a variety of environmental, commercial and performance-related reasons, MTBE has become the oxygenate of choice for making RFG outside the Midwest. MTBE is used in 80-85 percent of all the RFG produced today and comprises significant volumes of the national gasoline supply. As the Dept. of Energy points out, MTBE is valuable not only from the standpoint of its benefit to cleaner air, it is contributing over 400,000 barrels of gasoline production which is equal to the output of 5 US refineries.

This hearing is quite timely for a number of reasons, not the least of which is the continuing interest on the part of the Administration and the Congress to develop a comprehensive energy program for this nation, while ensuring environmental progress. MTBE is a central element of ensuring both. Adequate fuel supply and distribution is a critical component of the economy's health and we and others believe that it is incumbent upon our leaders to take a reasoned and responsible approach to addressing this issue. As President of a trade association representing companies who are engaged in providing a significant component of the nation's gasoline requirements, I want to clear away some of the underbrush surrounding the use of MTBE and the role it plays in maintaining a clean and secure source of octane as well as insuring an adequate supply of gasoline at reasonable prices.

First, I would like to address, head on, the issue of MTBE and water quality, which I know is of personal concern to you and others on this Committee. First—the facts. Invariably, the presence of MTBE in groundwater has been directly linked to underground storage tanks (USTs) leaking gasoline for an extended period of time—even years in some instances. These leaks, confirms a recently released report by the General Accounting Office (GAO), “are typically due to inadequate or non-existent UST inspection, enforcement and/or maintenance practices.” MTBE is easier to smell and detect in water than other gasoline constituents, however, make no mistake about it, the presence of MTBE in a water system means that gasoline is leaking from a containment system. MTBE has rarely been detected in groundwater at levels deemed unsafe by the US EPA. The vast majority of MTBE detections have been at concentrations below five parts per billion (ppb)—far below the EPA Consumer Advisory for MTBE that sets a suggested standard for prolonged exposure of 20 to 40 ppb to avoid unpleasant taste and odor. Several states have confirmed

that MTBE does not pose a threat to public health or water sources. For instance, the New Jersey Department of Environmental Protection reported that data from 400 of the state's public community drinking water supplies found no instance where MTBE approached New Jersey's drinking water standard for MTBE. The New Jersey report noted that, "MTBE contamination is not currently a public health concern in New Jersey public drinking water supplies." In another case, California, in early October, the California Department of Health Services reported that MTBE has been detected in only 0.9 percent of all water sources sampled (79 of 9,062), with only 0.2 percent of all samples exceeding California's primary health standard for MTBE (21 of 9,062).

In addition, an August report by the engineering consultant firm Malcolm Pirnie on water quality impacts in California finds that detections of MTBE in both surface and public water supplies have steadily decreased since 1998—the year in which new federal tank design improvements went into effect. The EPA's Blue Ribbon Panel Report and the UC-Davis Study both based their recommendations to reduce MTBE use largely on the assumption that MTBE groundwater detections would increase. The fear expressed by the Blue Ribbon Panel was that MTBE was not a health or environmental threat, but that; it could become such a threat if not properly controlled. We are seeing "the tip of the iceberg" was the refrain among some Blue Ribbon Panel participants. While it is always prudent to be cautious, it is very important to now understand that the key assumptions made by the Blue Ribbon Panel and UC-Davis have not come true—MTBE detections are not wide-spread, and, more importantly, MTBE is not being found at levels that pose a threat to human health, the environment, and even at levels that may cause consumers to taste or smell MTBE in water. In short, it appears that there never was an "iceberg."

There are reasons why MTBE detections have not become the threat predicted by the Blue Ribbon Panel. Ongoing state and federal UST upgrade initiatives have helped to control releases of gasoline into the environment. The collective focus, as stated in the GAO report, toward properly designing, installing and maintaining modern gasoline storage systems has helped to ensure better containment of gasoline, providing an increased margin of safety. At the time of the Blue Ribbon Panel, EPA estimated that more than 20 percent of all USTs failed to comply with federal installation and maintenance requirements. Today, more than 90 percent of USTs meet federal requirements for improved installation and maintenance. As a result, gasoline leaks have been significantly reduced and, therefore, MTBE detections (like all gasoline components) are not posing the problems predicted by the Blue Ribbon Panel.

However, further improvement to the nation's USTs program must continue. As the GAO Report recommended, many states and the federal government are not doing enough to properly and effectively enforce current UST laws requiring that leaks be detected and stopped before they become an environmental issue. For example, at the time of the Blue Ribbon Panel, EPA estimated that 40 percent of all UST failed to meet federal requirements for leak detection. Today, EPA reports that there has been LITTLE IMPROVEMENT in leak detection compliance. This lack of enforcement allows known gasoline leaks to continue unabated, risking the health of citizens and the environment. Effectively detecting gasoline leaks from UST through improved detection, monitoring and enforcement—as federal law requires and the GAO Report specifically recommended—is the key to preventing gasoline contamination.

In virtually every instance today where gasoline (with or without MTBE) is detected in a monitoring well or water resource, it can be directly linked to the failure to properly enforce current laws that require rapid leak detection and monitoring.

OFA looks forward to working with this Committee and industry to develop cost-effective ways to further improve our nation's tank system. In those instances where gasoline containing MTBE does escape from a leaking underground gasoline storage tank, recent studies prove that it can be easily and cost effectively remediated. A recent Malcolm Pirnie evaluation of California MTBE remediation efforts concludes "[i]n summary, unit costs for remediation of MTBE impacted sites, and unit costs for MTBE removal from groundwater are likely to decrease in the future as a consequence of research efforts..." Further, a review of recent EPA data in response to a survey of states remediation practices and findings relating to MTBE finds that MTBE remediation costs are consistent with the costs of remediation of gasoline generally.

It is apparent that the cost of properly enforcing current UST law is more cost-effective than banning the use of one of the most effective clean-burning gasoline components used today—especially at a time when gasoline supplies are tight,

prices are high, and, in light of the events of September 11, issues of energy security are more important than ever.

I would like to specifically discuss Pennsylvania's experience with MTBE and underground storage tanks.

Like many other states, Pennsylvania has created a mechanism to assist their underground storage tank owner/operators to meet their obligations under federal law. Effective 2-1-94, UST owner/operators have been covered by the Underground Storage Tank Indemnification Fund, which, after the payment of a \$5,000 deductible, covers releases up to \$1,000,000. Revenue for the Fund is derived from fees paid by UST owners/operators. The Fund is required to be actuarially sound and from a financial standpoint is extremely strong. Activities of the Fund are administered by a board composed of various state agencies and parties from the regulated community.

Recognizing that prevention of releases was the best way to protect the integrity of the Fund and protect the environment, the Board worked with the Pennsylvania Legislature to adopt a number of measures. First, they created a low interest loan fund to assist small tank owner/operators meet the upgrade requirements under federal law. Second, the Board appropriated money to create a program where out-of-service and abandoned tanks would have their contents pumped out and the tanks sealed at no cost to small operators. Funds were also set aside for DEP to clean up sites where there was no identifiable responsible party.

Another interesting fact obtained from the 2000 Annual Report of the Fund shows that average cost to clean up a release in the Commonwealth is \$106,656. The southeast part of the state, where RFG is required to be sold, actually has the lowest cost per cleanup level at \$96,860.

Congress has already begun consideration of measures to specifically provide additional protection against possible gasoline leaks from UST systems. In late July, the House passed its Comprehensive Energy Package (HR 4). Included in that Bill was language to appropriate an additional \$200,000,000 from the LUST Trust Fund for the assessment, corrective action, inspection and monitoring for possible MTBE detections. More recently, industry has developed legislative language to provide increased funding for states to be used specifically for improved enforcement, inspection and compliance initiatives. OFA feels that this legislative approach is the proper course of action to best ensure that gasoline containment systems are not continuing to leak into the environment.

Regarding health impacts, a consensus has emerged. Reviews by scientific panels from the US government (the National Toxicology Program), state governments (such as California's own Carcinogenic Identification Committee) and even international health organizations (such as the World Health Organization's International Agency for Research on Cancer and, more recently, the European Community) all have declined to list MTBE as a human carcinogen. Indeed, the Health Effects Institute, in June of this year released a report stating that "effects of MTBE exposure are likely to be no more, and may be less, than the effects seen in previous studies." Therefore, they concluded, "MTBE would be considered less likely to have adverse effects than previously thought."

Now then, to air quality and MTBE's role in Reformulate Gasoline. MTBE is not a new gasoline additive limited only to RFG. It was first used in gasoline in the late-1970's as an octane enhancer to replace lead. Today, estimates show that MTBE is blended to some degree in approximately 30 to 50 percent of all gasoline sold in the US, including RFG. By every measure, clean-burning RFG blended with MTBE has exceeded all pollution reduction goals substantially and cost-effectively improving the nation's air quality. RFG has cut smog-forming pollutant emissions by over 17 percent, the equivalent of removing 64,000 tons of harmful pollution from the air we breathe or taking 10 million vehicles off our roads. RFG has reduced emissions of benzene, a known human carcinogen, by some 43 percent, while reducing total toxic air emissions by about 22 percent. Cleaner-burning MTBE accounts for a large part of the overall emission reductions from RFG. In 1998, the Northeast States for Coordinated Air Use Management found that RFG with MTBE substantially reduced "the relative cancer risk associated with gasoline vapors and automobile exhaust compared to conventional gasoline," concluding that today's RFG reduced cancer risk by 20 percent over conventional gasoline.

Finally, by requiring RFG to contain a minimum 2.0 percent oxygen by weight, Congress recognized, in the 1990 Clean Air Act, that oxygenated compounds such as MTBE enable refiners to reduce air pollution while maintaining octane levels and fuel performance and stretching the use of a barrel of oil. In RFG, oxygenates allow for more complete fuel combustion, reduce carbon monoxide emissions during the winter months, smog-forming volatile organic compounds (VOCs) in the summer-

time, and toxic air emissions year-round. Despite other oxygen choices, refiners have overwhelmingly turned to MTBE to satisfy the RFG oxygen content requirements.

For the reasons mentioned above, it is our view that legislators carefully examine the issues surrounding MTBE. What is the truth vs. speculation.

I'd like to leave you with these facts:

- MTBE is an integral component for extending the nation's gasoline supplies and has been vital in helping to minimize gasoline supply shortages. With current crude oil imports exceeding 50 percent of overall demand and US refineries essentially operating at full capacity, there is no margin for error with regard to gasoline supply. Banning or reducing the use of MTBE is equivalent to shutting down five US refineries, which would further tighten supplies and substantially impact gasoline prices for consumers. Daily in the United States about 220,000 barrels, that's 9.24 million gallons (about 3.37 billion gallons per year) of MTBE are produced for our gasoline supply.
- Up to 15 volume percent of MTBE can be easily blended into finished gasoline. It is particularly valuable during refinery outages and peak summertime demand when additional supplies are needed most. It comprises approximately 4 volume percent of the overall US gasoline pool; and in some areas it makes up over 10 volume percent of the RFG supply.
- Because MTBE is mainly produced mostly from natural gas derivatives, it reduced dependence on foreign oil and is less susceptible to supply shocks. DOE reports that MTBE use accounts for 71 percent of the Energy Policy Act's requirements for use of alternative fuels.
- A number of economic studies indicate that removing MTBE from the gasoline supply will significantly reduce the production and increase the market cost of gasoline, as much as \$3.6-\$10 billion/year (not including additional subsidies for blending additional ethanol, any unplanned refinery outages and distribution system disruptions). Much of these increased gasoline costs will lead directly to increased profits for refiners. The California Energy Commission describes an immediate MTBE phase out as "catastrophic." The CEC estimates the refiner cost of phasing out MTBE (in California only) to be at least 5 to 7 cents/gallon.

Thank you, Mr. Chairman for this opportunity to testify. I look forward to working with you on these matters and welcome any questions you and the Members of the Committee have at this time.

Mr. GREENWOOD. Thank you, Mr. Adams.

Mr. Dinneen, you are recognized for 5 minutes for your testimony. Thank you for being here.

TESTIMONY OF BOB DINNEEN

Mr. DINNEEN. Thank you, Mr. Chairman, and good afternoon, Mr. Chairman, and members of the committee. On behalf of the Nation's ethanol producers, I want to thank you for the opportunity to be here today and provide testimony at this important hearing, and I give you great credit for the leadership that you have taken on this important issue.

Now, I have a lengthy statement prepared by staff, far more erudite than I, that goes into great detail about the environmental benefits of oxygenates generally, and ethanol specifically, which I commend to your staff.

But I have no intention of reading it here today, because at some point I would like to be invited back. But what I do want to say, however, is that the RFG oxygen standard has done exactly what the Congress intended when it created it in 1990.

The combination of the performance standards and the oxygen standard have combined to provide greater environmental benefits than would have been achieved by the performance standards alone. But how one views the efficacy of the oxygen standard depends entirely on one's perspective.

From the perspective of Illinois EPA Director Tom Skinner, where ethanol RFG is used in Chicago and Milwaukee, the pro-

gram has been a tremendous success, because he has seen dramatic air quality improvement without any degradation of drinking water supplies.

From the perspective of California, or New York, or Pennsylvania, Mr. Chairman, the program has been far from the stellar success that was envisioned by the Congress. But that is not because of the oxygen requirement. That is obviously because of the detection of MTBE in drinking water supplies.

The oxygen content requirement has nothing to do with it. I can't tell you what to do about MTBE contamination. I can tell you that simply eliminating the oxygen standard as a way of getting at that problem is not necessary, and quite frankly is tantamount to throwing the baby out with the bath water.

Now, some argue that eliminating the oxygen standard is necessary because there simply isn't enough ethanol to meet the demand if MTBE is removed. We believe that such concerns are absolutely unfounded given the unprecedented growth of ethanol production that has occurred over the past several years.

Let's review some of the numbers. Because ethanol has twice the oxygen content of MTBE, refiners would need only half as much volume to meet the oxygen requirement of RFG. The Department of Energy estimates that the demand for ethanol and RFG if MTBE were to be eliminated would be approximately 2.5 billion gallons.

Now, U.S. ethanol current capacity is approximately 2.3 billion gallons. But there are 13 plants under construction today, and 33 expansions to existing facilities that are underway today that are going to add 340 million additional gallons by next summer.

Beyond that, Mr. Chairman, there are planned facilities in parts of the country that you don't typically see ethanol production today, beyond the traditional grain belt. Mr. Chairman, there is a planned facility in York County, Pennsylvania. There are planned facilities in Oregon, in Maine, in Tennessee.

As the industry grows, it is going to grow far beyond the grain belt, and with new technologies, and new feed stocks, and that's why this industry is absolutely the fastest growing and the most dynamic industry that there is today.

In fact, after an exhaustive study this summer by the California Energy Commission, they determined that there is going to be more than 4 billion gallons of ethanol production by the end of 2003. That is more than enough to meet the 2.5 billion gallons needed for RFG, while continuing to supply existing oxifuel and octane markets, which currently compromise about 1.2 billion gallons of ethanol demand.

Mr. Chairman, I am a realist, and I recognize that refiners have made a politically compelling case for flexibility, despite our industry's capability to supply the market. But I would remind the committee that the oxygen standard was adopted to promoting a number of important policy goals.

Among those were rural economic development, fuel diversity, and energy security. Those objectives are as important today as they were in 1990, perhaps even more so.

Now, legislation has been introduced, H.R. 2423, that would create a much more flexible renewable fuel standard that would per-

verse the public policy goals of the Clean Air Act, while providing refiners far more flexibility.

Mr. Chairman, I would encourage you to add a similar provision to your bill. Finally, let me just make a couple of comments about boutique fuels. I am not smart enough to know whether the myriad of State authorized low RVP programs around the country is a problem.

The recently released EPA report seems to suggest that it is not a problem until there is a disruption in supply or distribution. What I can tell you is that simply eliminating the oxygen standard will not reduce the number of boutique fuels at all, and would actually exacerbate the problem by reducing gasoline supply.

The only way to address regional and seasonal gasoline price spikes is to increase supply, and that is exactly what the oxygen standard is doing, and that a renewable fuel standard could do.

H.R. 2249 introduced by Congressman Blunt and Rush, and supported by Speaker Hastert, reduces the number of fuels to just three, enhancing fuel fungibility, without reducing fuel supplies. That is the kind of bill that I believe deserves the support of this committee.

Mr. Chairman, we have an energy problem in this country. We simply don't have enough domestic production. Refineries are operating at 96 percent of capacity, and there has not been a new refinery built in this country in 25 years, and imports are rising at an alarming rate.

The dependency on foreign oil stifles our economy, constrains our environmental policies, and dictates our foreign policy. President Bush recently stated that we will not have homeland security until we have energy independence. He is absolutely right.

Increasing the production use of fuel ethanol is an important first step toward that goal, and I am here to tell you that farmers are prepared to be the foot soldiers in the battle for energy independence.

It is time for Congress to pull the trigger on a renewable fuel standard that will provide a more secure energy and economic future for all Americans. I thank you, Mr. Chairman.

[The prepared statement of Bob Dinneen follows:]

PREPARED STATEMENT OF BOB DINNEEN, PRESIDENT, RENEWABLE FUELS
ASSOCIATION

Good morning Mr. Chairman and Members of the Committee. I am very pleased to be here to discuss the reformulated gasoline program (RFG) generally, and the RFG oxygen content requirement specifically. These are important issues with far-reaching consequences for both consumers and air quality, and I appreciate the opportunity to provide comments on behalf of the domestic ethanol industry.

The Renewable Fuels Association (RFA) is the national trade association for the domestic ethanol industry. Our membership includes a broad cross-section of ethanol producers, marketers, agricultural organizations and state agencies interested in the increased development and use of fuel ethanol. There are 57 ethanol production facilities in 21 states in operation today, including a growing number of farmer-owned cooperatives that have begun production in just the past five years. The industry currently is on track to produce a record 1.8 billion gallons of ethanol in 2001, utilizing more than 700 million bushels of grain and making ethanol the third largest user of corn, behind only feed and export markets.

THE REFORMULATED GASOLINE PROGRAM WITH OXYGENATES:

The Clean Air Act Amendments of 1990 established the oxygen requirement in the federal RFG program to achieve several important public policy goals, including environmental benefits from the reduction of vehicle emissions, rural economic benefits to be gained from increased use of agricultural commodities in the production of renewable fuels, and energy security with the increased use of domestically-produced fuels. These public policy drivers remain critically important today.

The federal RFG program, *with* its oxygen content requirement, has effectively improved air quality. According to the Environmental Protection Agency (EPA), RFG is reducing ozone-forming hydrocarbon emissions by 41,000 tons and toxic pollutants such as benzene by 24,000 tons annually, the equivalent of taking 16 million vehicles off the road each year. A study by the Northeast States for Coordinated Air Use Management (NESCAUM) demonstrates that RFG reduces the cancer risk from gasoline by about 20 percent. These benefits significantly exceed the Clean Air Act's performance standards for hydrocarbons and toxics, at least in part because of the federal oxygen content requirement.

However, the widespread use of MTBE to satisfy the oxygen requirement has had a negative impact on water quality. As the Congress considers policies to address MTBE contamination and assure affordable and plentiful fuel supplies, the value of providing increased market opportunities for domestically produced renewable energy, such as ethanol, should be a top priority. Recent tragic events and the war against terrorism in the Middle East underscore our nation's dangerous dependence upon unstable regions of the country for our energy supplies. At the same time, American farmers continue to face record low commodity prices and depressed export markets. The RFA supports policies that maintain the air quality benefits of the existing RFG program and recognize the laudable policy drivers behind the oxygen standard: the environmental, rural economic and energy security benefits of renewable fuels such as ethanol.

PROTECT THE ENVIRONMENT:

The RFG program assures air quality benefits through the combination of emissions performance standards *and* an oxygen requirement. As a result, the RFG program has provided toxic reductions in excess of those required by the performance standards alone. The oxygen standard has also provided reductions in carbon monoxide, fine particulates and polycyclic organic matter, for which there are no performance standards.

Aromatic Content

The RFG program was initiated largely in response to environmental concerns about the rising levels of aromatics in gasoline. To replace the lost octane associated with the lead phase-down of the late 70's, refiners dramatically increased aromatic levels. By the mid-80's, some premium gasolines had BTX levels as high as 50 percent. Seeing this, Congress created the RFG program in 1990, including a specific cap on aromatic levels. EPA forfeited that cap in the regulations implementing the RFG program in favor of a complex model, with the understanding that the use of oxygenates in RFG would supply the octane and volume provided by aromatics.

Indeed, the RFG program has been successful in large part because of the significant reduction in aromatics in gasoline that results from oxygenate blending. It has long been recognized that adding high octane oxygenates to the gasoline pool has resulted in a substantial decrease in the use of aromatics. While conventional gasoline contains more than 30% aromatics, EPA's 2000 RFG survey found that MTBE gasoline contained about 19.2% aromatics while ethanol RFG contained 17.5% aromatics.

If the octane loss due to the likely phase out of MTBE is not replaced with ethanol, the use of aromatics will most certainly increase. In testimony before the MTBE Blue Ribbon panel, one major refiner suggested that if MTBE were banned and the oxygen requirement was removed, refiners would replace the lost octane with aromatics such as toluene. Many aromatics, such as benzene, toluene and xylene (BTX), are now listed by EPA as "Mobile Source Air Toxics, MSATs." Increasing aromatics in fuels increases both hydrocarbon and carbon monoxide emissions. Aromatics exhausted from motor vehicles are potent ozone formers that also photochemically react in the atmosphere to produce fine particulate aerosols composed of diesel-like particulate matter. They also dealkylate in the exhaust to yield cancer-forming benzene.

Congress should assure that as MTBE use is reduced, the cap on aromatics originally included as an RFG specification is re-established.

Nitrogen Oxide Emissions:

Nitrogen oxides react in the atmosphere to produce ozone, acid rain and fine particulate. Just this month, the Automobile Manufacturers released a study that examined oxygen and sulfur effects on NO_x emissions from production prototypes of low and ultra low emitting vehicles that are expected to produce more than half of the exhaust NO_x from the automobile fleet in 2005. *The data demonstrates that the non-oxygenated fuels produce more NO_x than fuels with oxygen contents of 2% from MTBE and 4% from ethanol.* If California was to update its model to account for high emitting vehicles and use the newest vehicle emission data, oxygenates would not increase NO_x above NO_x emissions from non-oxygenated gasoline.

Hydrocarbon and Carbon Monoxide Emissions:

Hydrocarbons and carbon monoxide are responsible for ozone formation. In fact, the National Academy of Sciences concluded last year that CO is responsible for as much as 20% of the ozone coming from automobiles. EPA and the California Air Resources Board (CARB) have recognized the benefit of carbon monoxide reduction by high oxygen fuels through a gasoline vapor pressure allowance.

Motor vehicles emit hydrocarbons in the form of exhaust and evaporative emissions. If the hydrocarbons are aromatics, they will also make particulates in the atmosphere. Data collected in a large number of investigations shows conclusively that adding oxygenate to gasoline reduces exhaust hydrocarbon and CO emissions from both normal and higher emitting vehicles regardless of their model year. Importantly, data collected by the Auto Industry on new and prototype LEV and ULEV vehicles in California shows that hydrocarbon and carbon monoxide emissions from these vehicles are decreased by a similar percentage through the addition of oxygen to gasoline as compared to the in-use fleet.

Particulate Matter:

Cars and pickup trucks in the existing fleet are significant contributors of fine particulate emissions. While cars and trucks emit smaller amounts of particulate than large diesel trucks, they represent 95% or more of the vehicles on the road and may be responsible for up to half of the exhaust particulate emissions from cars, buses and trucks. Fine particulate is responsible for chronic respiratory problems. Diesel particulate has been also linked to cancer; in terms of particulate size and chemistry, diesel particulate and automobile particulate are similar.

Oxygenates dramatically reduce particulate emissions. Because the RFG program includes no performance standards for PM, these benefits would be lost if the oxygen standard is repealed.

Polycyclic Organic Matter in Motor Vehicle Exhaust:

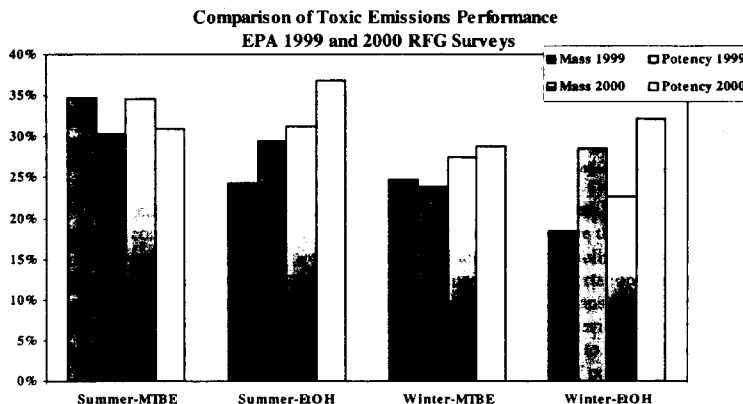
POM's are heavy aromatics that are similar to compounds found in diesel exhaust, coal tar and cigarette smoke, and are estimated to be 7 times more carcinogenic than benzene. The mass of POM found in motor vehicle exhaust is small compared to other air toxics. However, when potency is considered, POM's are nearly as important as benzene and 1,3 butadiene emissions in terms of their cancer risk. Raising the aromatic content of gasoline could further increase the POM risk. EPA's complex model does not consider specific fuel affects such as oxygenates and aromatics on POM emissions.

Recent studies have shown that the addition of oxygenates reduces POM emissions substantially, an average of 33% with 3.5 wt.% oxygen fuels compared to non-oxygenated fuel. Thus, we would expect that decreasing the use of oxygenate and increasing aromatics would further raise the risk of increased POM in the environment.

Cancer-Effects:

The EPA year 2000 RFG survey was analyzed to compare toxic emissions for ethanol and MTBE gasoline. On a mass basis toxics were reduced by 31.4% for MTBE gasoline compared to the baseline fuel. For ethanol fuels, the reduction was 27.5%. The difference is attributed to the greater degree of benzene removal from gasoline manufactured on the gulf coast because of strong markets for chemical grade benzene. The average concentration of benzene in MTBE gasoline was 0.60% in 2000 and 0.66% in 1999 while it was 0.77% in 2000 and 0.92% in 1999 in ethanol gasoline.

According to the survey, MTBE gasoline contains more aromatics and olefins than ethanol gasoline. The average aromatics and olefins for MTBE gasoline were 19.15% and 10.50% respectively. For ethanol gasoline the averages were 17.49% and 6.72%. When considering potency weighted toxics, *MTBE gasoline reduced the cancer risk by 28.9% while ethanol gasoline reduced the risk by 34.8%.*



Any policies considered by Congress to address MTBE contamination should ensure that the emissions reductions benefits of oxygenates outlined above are maintained, and that there is no backsliding on emissions of aromatics, NO_x, hydrocarbon, carbon monoxide, particulate matter and polycyclic organic matter. In addition, EPA should conduct a rigorous analysis of the “real world” emissions benefits of oxygen, including the impact on higher emitting vehicles, off-road vehicles and off-cycle driving (areas where the impact of oxygen is more critical) to assure there is no backsliding from these effects.

ENHANCE ENERGY SECURITY:

“We will not have homeland security until we have energy independence.”

President George Bush, October, 2001

The need for domestically produced energy supplies has never been greater. Recent tragic events showcase the danger of our growing dependence on imported petroleum, which continues to threaten our national energy security. Today we are more reliant than ever before on foreign nations to supply our insatiable and growing appetite for oil, importing 57% of our petroleum. At the same time, U.S. oil production has fallen to the lowest point in 30 years. By importing more refined petroleum products than ever before, the U.S. is sending value-added refining jobs overseas. Meanwhile, demand for refined products will continue to grow.

Refineries are operating at historically high rates of utilization, exceeding 95% on an annual basis. Refiners have limited investment in recent years, using much of their existing refining capacity cushion to meet increased gasoline demand. Meanwhile, no new refineries have been built in 25 years.

According to the National Petrochemical & Refiners Association, “The U.S. is gravitating toward a situation in which demand for refined products is overtaking the capability of traditional supply sources... With existing refining capacity essentially full, the U.S. will have to find additional sources to cover the incremental demand.” As a domestic, renewable source of energy, ethanol can increase fuel supplies, reduce our dependence on foreign oil and increase the United States’ ability to control its own security and economic future.

Blending of oxygenates like ethanol directly increases the supply of gasoline. Ethanol can and should be a more consistent partner with domestic oil companies to provide the incremental additional supplies that are obviously needed. Ethanol is blended with gasoline after the refinery process. Therefore, blending ethanol adds additional volume to the transportation fuel market and helps ease the burden on the refinery sector that has no hope for quick expansion. The ethanol industry is producing at a record pace. In 2001 we will again shatter all previous production records. And the ethanol industry can double production within two years to meet new demand created by a phase out of MTBE. We are prepared to meet the challenge of providing increased fuel supplies—today.

In light of recent events, Congress must tread cautiously with regard to fuel supply and availability. MTBE currently represents about 3% of the nation’s transportation fuel supply. If it is precipitously eliminated without providing for a replace-

ment of that supply, gasoline prices will clearly rise. Indeed, a recent memo by the Department of Energy concluded that eliminating MTBE use without replacing it with a renewable fuel such as ethanol would reduce our gasoline supply by between 500,000 and one million barrels per day, or 6-12% of current gasoline consumption.

ECONOMIC DEVELOPMENT:

The processing of grains and other agricultural biomass for ethanol production provides an important value added market for American farmers, helping to raise the value of commodities they produce. As the third largest use of corn behind feed and exports, ethanol production utilizes nearly seven percent of the U.S. corn crop, or over 600 million bushels of corn, adding \$4.5 billion in farm revenue annually. The U.S. Department of Agriculture (USDA) has determined that ethanol production adds 25-30 cents to every bushel of corn.

Ethanol production facilities provide much-needed economic stimulus and new capital investment to rural communities faced with record low commodity prices and shrinking export markets. There has not been an oil refinery built in this country in 25 years. But during that time there have been 57 ethanol refineries built, stimulating rural economies and creating jobs. Industry growth offers enormous potential for overall economic growth and additional employment in local communities throughout the country. According to a Midwestern Governors' Conference report, the economic impact of the demand for ethanol:

- Adds \$4.5 billion to farm revenue annually
- Boosts total employment by 195,200 jobs
- Increases state tax receipts by \$450 million
- Improves the U.S. balance of trade by \$2 billion
- Results in \$3.6 billion in annual savings to the Federal Treasury

RISING ETHANOL PRODUCTION CAPACITY:

The U.S. ethanol industry is expanding rapidly to meet new market demand created as states phase out the use of MTBE. In addition to the over 2 billion gallons of current production capacity, 34 existing ethanol plants are undergoing expansion, adding an additional 235 million gallons of capacity, and another 13 plants with a combined capacity of nearly 300 million gallons are currently under construction. Projects planned for 2002/2003 will result in an additional one billion gallons of production capacity, for a total of 3.5 billion gallons by the end of 2003. A recent industry survey conducted by the California Energy Commission concluded there would be two billion gallons of *new* ethanol production capacity on line by 2003, more than enough to meet the 580 million gallons of oxygenate demand created in California and the 800 million gallons in the northeast.

U.S. Ethanol Production
(Million gallons/year)

Year	2001	2002	2003	2004	2005
Existing Plants w/Expansions	2219	2481	2689	2774	2852
New Plants	82	518	1329	1387	1575
Total	2301	2999	4018	4161	4427

Source: California Energy Commission Survey, August, 2001

There is ample grain to greatly expand ethanol capacity. USDA has estimated that, in the shorter term, corn could be used to produce about 6 billion gallons per year of ethanol without disrupting commodity markets. The Department of Energy has projected that 10 billion or more gallons per year of ethanol could be produced from crop residues (rice straw, sugarcane bagasse) and dedicated biomass crops produced on idled land by 2025.

BOUTIQUE FUELS

Last week, U.S. EPA released a staff "White Paper" on boutique fuels that looks at changes that could be made to the Clean Air Act to reduce the number of fuels nationwide over the long term. Many of the options outlined would require legislative and regulatory action. The analysis includes four main fuel options that are meant to capture a wide range of possible future fuel programs in terms of economic and environmental impacts and the degree to which they simplify the current fuel

system. As for the RFG oxygen requirement, EPA recommends that if it is removed it should be replaced by a nationwide renewable fuel program. The Agency correctly notes the Congressional objectives of the oxygen mandate. "When Congress authorized the RFG program and its mandated oxygen content requirement, they did so with the intent of enhancing agricultural markets through the demand for ethanol that would result, enhancing energy security and improving air quality," the report states.

The Agency acknowledges the air quality benefits of oxygenates generally, and the additional greenhouse gas emissions benefits of renewable ethanol, specifically. "It is our belief that any changes to the CAA oxygen requirement in RFG, including the mandate's role in cleaner fuels, should be carefully studied and, if adopted, should be coupled with an alternative requirement for a national renewable fuel program."

The Agency concludes there will be no additional costs, and possible cost savings, associated with an RFS in lieu of the RFG oxygen mandate. In terms of impact on production capacity, EPA concludes eliminating the oxygen standard with no nationwide renewable fuel requirement to replace it would result in an "overall decrease in gasoline production capacity."

LEGISLATION:

The members of the Renewable Fuels Association understand that the Congress is faced with a daunting challenge of determining how best to protect water supplies by reducing the use of MTBE without sacrificing air quality or increasing fuel prices. I believe the framework of the Chairman's bill, H.R. 20, provides a good starting point for discussion. But by eliminating the RFG oxygen requirement, without protecting against backsliding in the areas discussed above for which there are no performance standards, the bill fails to adequately protect air quality. H.R. 608, legislation introduced by Rep. Greg Ganske, addresses the source of the problem, MTBE use, without forfeiting the environmental benefits of oxygenates. The RFA believes this bill would be a more appropriate vehicle to address MTBE water contamination.

But there are other energy issues that the Congress needs to consider in light of recent events. The Committee has also sought to address the issue of boutique fuels. Representatives Roy Blunt (R-MO) and Bobby Rush (D-IL) have introduced bi-partisan legislation, H.R. 2249, to reduce the number of boutique fuels while preserving air quality. The legislation would reduce the number of fuel formulations in the U.S. from 15 down to 3, including California RFG, federal RFG and conventional gasoline. The RFA supports this effort as a means to improve gasoline fungibility and reduce consumer costs. Congress should look at this issue closely, and remove states' authority to further balkanize gasoline markets.

As for enacting a comprehensive national energy policy, renewable, domestically produced fuels can and should play a larger role in meeting our nation's energy needs. H.R. 2423, the Renewable Fuels for Energy Security Act of 2001, would expand domestic liquid fuel production by requiring that renewable fuels like ethanol and biodiesel supply an increasing percentage of the U.S. motor gasoline market to facilitate a movement away from greater and greater imports of oil. When fully implemented in 2016, renewable fuels would comprise 5% of the fuel market, an eight-fold increase from today's use.

As the country attempts to grapple with a lack of refining capacity and increased reliance on imported oil, this legislation provides a positive roadmap for increasing energy security and stimulating rural economies by harnessing America's renewable energy potential. America has the resources to address our long-term energy needs without having to rely on the benevolence of OPEC. We should be investing here at home, not overseas, to build a sustainable energy future for our children. America's farmers are willing and able to help us with our energy crisis. The federal government should be willing to help them by promoting increased value-added market opportunities. It's a win-win situation.

CONCLUSION:

We see ethanol as a solution. Farmers are prepared to be the foot soldiers in the battle for energy independence. Increasing ethanol use will allow MTBE to be reduced cost-effectively while protecting precious water resources and air quality. Stimulating rural economies by increasing the demand for grain used in ethanol production will help American farmers. Encouraging new ethanol production from cellulose feedstocks will provide additional economic and environmental benefits as ethanol production is expanded beyond the grain belt. The bottom line is that we need to protect both air quality and water quality. With ethanol, we can.

Thank you.

Mr. GREENWOOD. Thank you, sir. Mr. Kahlenberg, welcome. Thank you for being with us, and you are recognize for 5 minutes for your testimony, and I would suggest that you bring the microphone pretty close to you, because it is pretty directional.

TESTIMONY OF DAVID KAHLENBERG

Mr. KAHLENBERG. Okay. Thank you. I would like to thank Representative Greenwood and the members of the committee for giving me the opportunity today to relay my personal experiences with MTBE contamination.

Our main concerns that we have regarding MTBEs and gasoline stem from the potential contamination that can occur in ground water, specifically in areas close in proximity to drinking water sources.

The quality and taste of water is affected, and there are unknown effects with ingesting drinking water with MTBE. There are no Federal standards for what is considered acceptable in the MTBE, although there are advisory levels.

State regulations vary from 5 part per billion in California, but maybe much higher in other States. I reside in Doylestown, Pennsylvania, and our house is located about a half-a-mile away from two different gas stations.

In October of last year, we learned that there was MTBE contamination being released from two gas stations. We found out from co-workers, and the communication was not all that terrific. As soon as we found out, we started researching what is MTBE. We didn't now what it was.

And we tried to find out anything that we could through town meetings, newspapers, the internet, and so on and so forth. We stopped drinking our well water immediately, and we had no choice but to continue bathing and cooking with the water.

In November, we contacted one of the gas stations who had set up a hot line for residents in the area, and we explained that although we would like our well tested, that under the DEP guidelines, all residents with 2,500 feet were able to have their well tested, and were required to, and that the company had done it.

My house was one parcel over that limit, and as a result, the company refused to test my well. We requested it anyway because we were concerned. We had a 2-year old child, and not to mention our own health to be concerned about.

At that point in time, there were some results available, and we were told that the streets near our house, that the residents that they had results for, there were no detectable levels in their wells.

However, they did make a commitment to us that should they find that any of the residents on my street actually had come up with detectable levels that they would in fact be back in touch with us.

In the middle of December of last year, we needed our well's neutralizer be serviced, and it has nothing to do with MTBE, but we needed our well's neutralizer serviced, and we had an odd taste that we were experiencing in our well.

And we contacted a company to have it serviced, and the service company actually—it was just a rare coincidence actually, and I

view myself very lucky on that day, and that person who actually serviced our well was the same person who ended up putting in a carbon filter treatment system on my next door neighbor's house.

And he had that system put in by the gas company, and MTBE was in their well, and we found out about that, and we contacted Exxon the next morning actually, and asked that our well be tested, and if nothing else, to put a treatment system in our well.

And the response that we got was that although the company was willing to put a treatment system in my neighbor's house, they weren't willing to even test my water. We were very upset about that, and in fact at that time we were told by the company that they weren't responsible for the contamination of any of the wells in my area.

So we had no choice and we had our well tested by a State certified lab to understand what could have been affecting us. And what we found out was in fact that we had MTBE present in our well at a level of 12 parts per billion, which is more than two times what is allowed in California, and slightly more than half the acceptable level in Pennsylvania.

Once we found out all these results, we were again in contact with the companies and its various different offices, and we tried to get support in having a treatment system put in our well.

At that point in time, we were also notifying all neighbors, and we actually found out at that time that a lot of our neighbors also weren't aware of the contamination that was in the area and that surprised us as well.

Well, needless to say that through many discussions that we had we actually had the company agree to test our well, and if they found MTBE, and they confirmed the results, they would put a treatment system on.

And I am happy to say that they did the testing, and they have found the contamination, and they have cleaned up our well by putting a treatment system in. However, they still don't claim responsibility to this day in fact for what had happened to us.

In June of this year, there was a formal letter from the companies involved to the public, which told them the extent of the contamination, and formally told us that they were not responsible for contaminating our well.

This was determined based on a characterization report that they wrote for the DEP. Neither the companies involved, nor the DEP, have offered reasonable alternatives and potential sources for the contamination in my house and for our other neighbors like myself in the area.

At the same time, we were told that the company will no longer maintain our well service, which they were providing us bottled water, as well as testing our well. And that we were required to maintain our system on our own.

The cost for maintaining the system, depending on how much testing we end up having done, is somewhere between a thousand and \$2,000 a year. So it is a substantial cost. And in speaking with different parties involved, there is a lack of site characterization there for my area, and so we don't understand what is involved there.

We feel that there aren't any other reasonable sources; however, we are left to our own volition if we are to actually learn anything more about the contamination and what caused it.

What is most upsetting is the fact that in the early 1990's it ends up going through records, and actually the contamination was known to exist on this site. They knew that the soils were contaminated as well as the water. However, there was no testing in the immediate residents in the area who had public drinking water.

The townships were also not involved. Given the results of all the water samples collected from the early 1990's through the present, it is likely that we don't know how many people may be contaminated by MTBE in the country, and it has taken 8 years for the residents living in the immediate vicinity of the area where I live to actually be notified of the situation, where each family could have taken precautionary measures to not be exposed to potential carcinogens or other health hazards.

Even after formal submission of the characterization plan by the company, they still don't know how the contamination occurred at the gas station that is a half-a-mile away from my home. So it is possible that there are other gas stations involved, and a bigger problem.

And like Mr. Adams said earlier, I think that there is a lot of potential things to come, and that MTBE is only one marker compound for perhaps a larger problem coming, and thank you for the opportunity, and I welcome any questions.

[The prepared statement of David and Jill Kahlenberg follows:]

PREPARED STATEMENT OF DAVID AND JILL KAHLENBERG

We would like to thank Representative Greenwood and the distinguished members of this subcommittee for the opportunity to relay our personal experiences with MTBE contamination in drinking water during this hearing.

Our main concerns regarding the use of MTBE in gasoline stem from the potential contamination that can occur in groundwater, specifically in areas in close proximity to drinking water sources. The quality and taste of drinking water that is contaminated is affected, and there are potential unknown health affects of ingesting the contaminated water and from inhalation of vapors from the affected water in every day life. Further, there are no federal standards for what is considered an acceptable level of MTBE contamination in drinking water. State regulations vary and begin at 5 ppb in California but can be significantly higher in other states.

We reside at 3714 St. George Circle, Doylestown, PA in Buckingham Township. Our house is located approximately 2,550 feet from the ExxonMobil gas stations at the intersection of Routes 202 and 313 (Poole's Corner). This intersection borders the Doylestown Borough, Doylestown Township and Buckingham Township.

In October 2000, we learned of MTBE contamination to the groundwater in our area by the two gas stations located at Poole's Corner through an off-hand conversation with a co-worker who also lives in the immediate area; not from the PA DEP, the townships or ExxonMobil. We have since learned that Buckingham Township was informed about the contamination from residents of the area, and not from ExxonMobil, the PA DEP or any of the neighboring townships.

At that point, we began researching information regarding the Poole's Corner contamination and general information regarding MTBE through town meetings, newspapers, the internet and conversations with other residents. As a precautionary measure from potential health affects, we stopped utilizing our well water for drinking, however, we continued to use the water from our well for bathing and cooking.

On November 6, 2000, we called the Exxon hotline set up for residents of the Poole's Corner area to discuss our situation. We were referred to Mr. Barry Wood of ExxonMobil. He explained at that time, the testing would occur only on houses within a 2,500-foot radius of the gas stations, as mandated by the PA DEP. Because our house is located one parcel beyond the established radius, our house would not be tested. We requested sampling anyway due to our concern over the potential for having contaminated drinking water due to the potential health affects to our then

two-year-old child. However, Mr. Wood reviewed with us the test results from all of the houses tested located on Yorkshire Road and Knights Way, the streets adjacent to, or facing, our house. All of the tested houses on these streets had shown a non-detectable level of MTBE. At this time, no tests had been performed on parcels located on St. George Circle. At the end of our conversation, Mr. Wood indicated they would contact us, should any of the results in our immediate area show a detectable level.

On December 12, 2000, Culligan® (a vendor for residential, commercial, industrial water treatment products and services) came to our house to perform the regular periodic service of our well's neutralizer and test the hardness levels in our water, due to an odd taste we were experiencing in our water. During this service call, we were shocked to learn from Culligan® that our next door neighbors at 3710 St. George Circle, also outside of the 2,500 foot radius, were tested by ExxonMobil and had detectable levels of MTBE in their drinking water. Culligan® was aware of the MTBE contamination present at my neighbor's home because in response to confirming the MTBE contamination at my neighbor's home, they were contracted by ExxonMobil to install a whole house carbon filter treatment system at their residence in November/December 2000.

In response to learning that our immediate next-door neighbors drinking water was contaminated with MTBE, on December 13, 2000, we again contacted Mr. Barry Wood, Dana Cozza (Special Projects Manager in Buckingham Township) and Sarah Pantelidou (the PA DEP Poole's Corner Project Manager). Much to our dismay, Mr. Wood informed us that ExxonMobil would not pay for our well water to be sampled because our house was located outside of the pre-established 2,500 foot radius. In the opinion of ExxonMobil, they were not responsible for any contamination of the wells located in our immediate vicinity.

Subsequently, at our own expense, we decided to have our well tested independently by a state-certified laboratory to put our minds at ease, completely hoping we also had non-detect levels. The results from the water samples collected from our home on December 18, 2000 indicated that our drinking water was contaminated with MTBE. In fact, MTBE was present in our drinking water at a level 11.8 ppb, which is more than two times higher than the acceptable level of MTBE in drinking water in the state of California, but yet also slightly more than half the acceptable level in Pennsylvania.

Upon receiving these test results on January 8, 2001, we immediately contacted Mr. Barry Wood, Sarah Pantelidou, and Dana Cozza to inform them of our test results. Mr. Wood informed us that he was not sure which course of action Exxon would take on this matter and told us that he would get back in touch with us with an answer. After these conversations, we began to notify our neighbors of our situation, so they would be aware and could take the appropriate precautions. We were shocked to learn that some of our neighbors were not even aware of the contamination at Poole's Corner, let alone the potential affect to their house, including neighbors who moved into the neighborhood in September 2000. At this time, we also sent information to Pennsylvania State Senator Conti, Congressman Greenwood, Governor Ridge and Pennsylvania State Representative McIlhinney, so they would be aware of the situation and offer us guidance.

On January 12, 2001, Barry Wood informed us that ExxonMobil agreed to repeat the sampling of our well and if MTBE was detected in our well that ExxonMobil would pay to have a whole house carbon filtration system installed at our house. On January 13, 2001, Geological Services Corporation (GSC) on behalf of ExxonMobil sampled our potable water. The results of this testing confirmed the MTBE contamination and ExxonMobil subsequently had a treatment system installed at our residence and put us on a bottled water delivery service. After the installation of this water treatment system, GSC collected water samples on January 31, 2001, which confirmed that at that time, the carbon filter system that was installed is effectively removing MTBE from our drinking water. However, ExxonMobil still does not claim responsibility for the MTBE contamination in our well.

In a letter to the community of Buckingham Township from ExxonMobil, dated June 6, 2001, ExxonMobil formally announced they do not feel responsible for the contamination of wells located in our immediate location. This determination was based on the Site Characterization Report for the Exxon facility submitted to the PA DEP on April 24, 2001. Neither ExxonMobil nor the PA DEP have offered reasonable alternate potential sources of our contamination. Based on these statements, ExxonMobil will no longer sample our well, or maintain our treatment system. All maintenance and testing is our complete responsibility. The cost of maintenance of the treatment system and having our water tested has been estimated between \$1,000 and \$2,000 annually.

In speaking with the PA DEP, there is a lack of site characterization data for our immediate area. Based on our previous limited knowledge of hydrogeology, we feel there are no other reasonable potential sources for the MTBE contamination in our potable well other than the ExxonMobil sites, but we do not have the resources necessary to complete the hydrogeologic studies of our area.

Since then we have learned that ExxonMobil and/or the PA DEP knew about MTBE contamination in the Poole's Corner area as early as 1992. PA DEP records indicate gasoline leaks at the site in 1990. In 1992, apparently the first groundwater samples were collected from the site, and four of the five site monitoring wells tested positive for MTBE contamination. To our knowledge, neither ExxonMobil nor the PA DEP informed Buckingham Township prior to 2000 of these results. Also to our knowledge in response to these releases, none of the private wells located in the immediate vicinity of the site, beyond the boundaries of the actual gas stations, were tested between 1990 and 1999. In March 2000, ExxonMobil informed the PA DEP that there was a gasoline release at Poole's Corner, and again Buckingham Township, and thus the residents in the immediate area, were not notified of the situation.

Given the results of the first groundwater samples collected from the site in 1992 indicated MTBE contamination, it is likely that the now known to be contaminated wells in the Poole's Corner area have probably been affected since that time. It has taken eight years for the residents living in the immediate vicinity to be notified of the situation, during which time, each family could have taken precautionary measures to not be exposed to potential carcinogens. Also important to note, even after formal submission of the Site Characterization Plan, ExxonMobil has not determined how the contamination occurred, so it is possible that other gas stations could cause contamination of ground water and never know what happened or how to prevent contamination in the future.

Mr. GREENWOOD. Thank you, Mr. Kahlenberg, and thank you for coming to the hearing, and I know it has been postponed a few times, and I appreciate you making it into your schedule. Mr. Early, you are recognized for 5 minutes for your testimony, sir. Thank you for being here.

TESTIMONY OF A. BLAKEMAN EARLY

Mr. EARLY. Thank you, Mr. Chairman. I am happy to be here on behalf of the American Lung Association, and I appreciate being invited to talk about how we can improve the reformulated gasoline program.

The American Lung Association has long supported the reformulated gasoline program as a cost effective way of addressing ozone air pollution. It is one of the most important tools available to communities to combat ozone air pollution across the country, which is actually a growing problem, and not one that we are really succeeding at defeating at this time based on the new ozone standard that the EPA issued in the summer of 1977.

The American Lung Association, having looked at the data regarding MTBE threats to our Nation's service and ground water supplies supports the concept of phasing MTBE out of not only reformulated gasoline, but all gasoline.

This is driven by the potential public health threat of MTBE in the water supply, and also the fact that MTBE and the RFG program is causing a lot of public unhappiness with this program.

We are losing public support for a program which we think is very valuable, and phasing out MTBE is one way of increasing public support for RFG, and we might see more communities actually adopting RFG rather than trying to get out of the RFG program if MTBE were taken out of the program.

But that has to be accompanied by an elimination of the oxygen mandate in the reformulated gasoline program. That is because if

you ban MTBE and you maintain the oxygen standard in reformulated gasoline, it is a practical ethanol mandate in all reformulated gasoline.

The American Lung Association firmly believes that mandating ethanol in summer time gasoline, whether it is reformulated gasoline or conventional gasoline, will contribute to increases in ozone smog, and we oppose a mandate of that nature.

Quite simply the big problem with ethanol is that it significantly increases the volatility of gasoline at levels above 2 percent. Reducing gasoline volatility is one of the most important things that our clean gasoline programs are actually doing to help combat smog.

And that's because evaporation of gasoline from automobiles as we have gotten more sophisticated tail pipe equipment on our automobiles, is a bigger and bigger piece of the ozone problem, in terms of the mobile source contribution.

Ethanol and gasoline also increases NO_x emissions from automobiles, and NO_x , along with VOCs, also contribute to the formation of smog.

The bottom line is that the reduction of carbon monoxide tail pipes emissions, which ethanol does effectively, doesn't offset the evaporation increases and the NO_x increases that ethanol also contributes to.

It is argued that in the reformulated gasoline program, since there is a volatility requirement, that mandating ethanol and RFG won't be a problem. This isn't true. Data submitted to the California Air Resources Board shows that reformulated gasoline with a volatility control, but with ethanol in it, increases both the permeation of gasoline in automobiles.

That is the penetration of the gasoline through the soft parts—the rubber hoses, and the valves and stuff—increases that from 500 to 800 percent in conventional cars, and 15 percent in new cars that are specifically designed to prevent evaporation.

So, once again even with a controlled fuel containing ethanol, you are going to have evaporation problems. Second, reformulated gasoline in many areas would have mandatory levels of ethanol, and when consumers are driving around an RFG area, be mixed with conventional gasoline that isn't controlled for volatility.

And the combination of those two causes significant increases in volatility. Basically, the bottom line is that the volatility effect of ethanol is a very serious problem in all gasoline, whether it is RFG or conventional gasoline. So it shouldn't be mandated in gasoline.

An MTBE phaseout also has to be accompanied by anti-backsliding provision for toxins. One of the things that has been demonstrated very clearly is the RFG program has been very effective at reducing toxic air pollution, and we believe that taking MTBE out of RFG will potentially allow refiners to increase the amount of toxins.

The oil industry has claimed that the current mobile service air toxins rule that was issued by the Environmental Protection Agency solves this problem. We don't believe that to be true.

The data that I submitted in my testimony, there is a chart that shows that refiners are obtaining about a 16 percent higher amount of toxins reduction than the level of reduction that you get under the mobile service air toxins rule.

Congress needs to make sure that we capture that additional air toxins reduction for the benefit of the breathing public and not allow that to disappear if we ban MTBE and reformulated gasoline.

Finally, my testimony has a piece which I will just summarize in a couple of sentences, which demonstrates that even in a world where ethanol is not mandated in gasoline, if we take MTBE out of reformulated gasoline and all conventional gasoline, because refiners need octane, a very large amount of ethanol will be used voluntarily by refiners.

We don't need to mandate ethanol. And it is about three times what is actually being produced in the country today, in terms of the amount of ethanol, that would be needed simply for octane by refiners.

So there really isn't a need to mandate ethanol use, and with that, I will conclude my testimony. Thanks very much.

[The prepared statement of A. Blakeman Early follows:]

PREPARED STATEMENT OF A. BLAKEMAN EARLY, ENVIRONMENTAL CONSULTANT,
AMERICAN LUNG ASSOCIATION

Mr. Chairman, my name is A. Blakeman Early. I am pleased to appear today on behalf of the American Lung Association to discuss the use of MTBE in Reformulated Gasoline (RFG). The American Lung Association has long been a supporter of the use of RFG as an important tool that many areas can and should use to reduce unhealthy levels of ozone.

CLEAN FUELS HELP REDUCE SMOG

As has been demonstrated in California, "clean" gasoline can be an effective tool in reducing car and truck emissions that contribute to smog. Based on separate cost effectiveness analyses conducted by both the U.S. EPA and the State of California, when compared to all available control options, reformulated gasoline (RFG) is a cost-effective approach to reducing the pollutants that contribute to smog.¹ Compared to conventional gasoline, RFG has also been shown to reduce toxic air emissions from vehicles by approximately 30 percent.²

THE AMERICAN LUNG ASSOCIATION SUPPORTS THE PHASE OUT OF MTBE IN ALL
GASOLINE

As a member of the Blue Ribbon Panel on Oxygenates in Gasoline, the American Lung Association learned of the significant threat that MTBE poses to the nation's water supplies. We also came to understand that the continued use of MTBE in RFG would contribute to the undermining of public support for the RFG program. Based on these two factors, we have supported the Blue Ribbon Panel recommendation that MTBE be phased out of all gasoline, not just RFG. We believe there is a broad consensus in support of the MTBE phase out.

ELIMINATION OF THE OXYGEN MANDATE IN RFG MUST ACCOMPANY ANY MTBE BAN

If Congress were to ban MTBE and not eliminate the oxygen requirement for federal RFG a *de facto* ethanol mandate would be created. In essence, all RFG in the nation would be required to contain a minimum of 5.7% by volume ethanol (2% by weight oxygen). **The American Lung Association firmly believes that mandating ethanol in summertime gasoline will contribute to increases in smog regardless of whether the fuel is RFG or conventional gasoline.**

Quite simply the big problem with ethanol use in gasoline is that it significantly increases volatility when mixed in gasoline at levels above 2 percent by volume. Reducing gasoline volatility during hot summer weather is one of the most important strategies for improving summertime gasoline in order to reduce smog. That is because with the advance of pollution equipment on automobiles, evaporation of gasoline hydrocarbons contributes more to smog in most areas than do tailpipe hydrocarbon emissions. The volatility increases that ethanol causes in summertime can

¹U.S. Environmental Protection Agency, Regulatory Impact Analysis, 59 FR 7716, Docket No. A-92-12, 1993

²Report of the Blue Ribbon Panel on Oxygenates in Gasoline, September 1999, pp. 28-29

overwhelm any benefit it provides in reducing CO tailpipe emissions, sulfur dilution or aromatics dilution. That is why the ethanol industry only talks about the tailpipe emissions benefit from ethanol in RFG. The ethanol industry often quotes a 1999 National Research Council study of reformulated gasoline as finding that CO reduction credit should be included for ethanol in EPA's complex model for RFG because CO tailpipe emissions contribute to ozone formation. But they fail to acknowledge what we believe to be a more important finding. The NRC report stated, "...the increase in the evaporative emission from the ethanol-containing fuels was significantly larger than the slight benefit obtained from the lowering of the CO exhaust emissions using the ethanol-containing fuel."³ The NRC also acknowledged that ethanol increases NO_x tailpipe emissions relative to non-ethanol containing fuel. These NO_x emissions also contribute to greater ozone and particulate formation.⁴ The bottom line: the reduction in CO tailpipe emissions obtained by using ethanol in summertime gasoline do not outweigh the increase in evaporation and the increases in NO_x tailpipe emissions from a smog contribution point of view.

Incidentally, the increases in evaporation do not just contribute to ozone formation. Since the gasoline also contains toxic aromatics, such as benzene, these will evaporate more readily along with the ethanol. While ethanol may dilute the amount of benzene in a gallon of gasoline, the amount of benzene that ends up in the ambient air due to increased evaporation from the fuel may be greater than if the ethanol were not added at all.

It is argued that if ethanol is mandated in RFG, air quality is protected because refiners are required to limit the volatility by the RVP limits of EPA's RFG regulations. Thus, the impact of ethanol on volatility is not a factor. This is not true. First, while it is clear refiners can off-set the volatility effect of ethanol by blending it with super low volatility blend-stock, we do not know what potential air quality benefits may be lost by changing other parameters of the fuel to meet the RVP limit. For instance, a refiner might actually increase aromatics because they need a sulfur-free component that is low in volatility to help offset volatility increases from using ethanol.

RFG with low RVP that contains ethanol will cause increases in evaporation compared to non-ethanol containing RFG in two ways: through increased permeation of "soft parts" in auto engines and also through co-mingling with ethanol-free fuel.

EPA in its Tier 2 Final Rule identified permeation as a problem that can increase evaporation of gasoline. Essentially, alcohol in fuels promotes the passage of hydrocarbons through the "soft products" in cars, such as plastic fuel tanks, hoses, and "o" ring seals. As a result, all new cars subject to Tier 2 evaporative emissions requirements have to demonstrate that they are using materials that resist the permeability effect by testing them with fuel containing 10% ethanol.⁵ But of course this does nothing to protect the vehicles on the road today. Only vehicles being made since approximately 1994 have been consistently using alcohol resistant soft materials. How much will an ethanol-containing RFG meeting RVP limits increase evaporation from vehicles on the road today? Probably a great deal. The Toyota Motor Corporation presented test data to the California Air Resources Board (CARB) that shows a high RVP fuel increased evaporation from gaskets, plastic fuel tubes and plastic gas tank material by 500, 1300, and 800 percent, respectively (See Tabs 1, 2, 3). Even if a fuel meeting RVP limits caused permeation at a half or quarter of the rate of the non-complying fuel tested, this would have a major adverse impact on vehicle evaporative emissions. Toyota has also submitted additional data to CARB that shows new vehicles designed to be "alcohol resistant" may allow increases of evaporative emissions by 10 to 15% when using RFG with ethanol.

Finally, I must note the impact that ethanol volatility can have through a mechanism referred to as "co-mingling". Essentially when two fuels with the same RVP, one ethanol free and one containing ethanol, are mixed together the volatility of the entire mix is substantially raised. In a circumstance where consumers purchase ethanol-free fuel, use a portion and then purchase fuel with ethanol in it, even if the ethanol blend is low RVP RFG, volatility can raise as much as 3/4ths of a pound RVP.⁶ In essence the adverse volatility effect of ethanol is not limited to the absolute volume sold in a given market area. It can be greatly magnified, depending how much consumers switch back and forth in purchasing the two types of fuels. Whenever the volume of ethanol in the gas tank exceeds 2 percent, the volatility of the

³ Ozone-forming Potential of Gasoline, May 1999, p. 158

⁴ California Environmental Protection Agency Air Resource Board, Air Quality Impacts of the Use of Ethanol in California Reformulated Gasoline, December 1999

⁵ See Discussion at 64 Federal Register, 26084, May 13, 1999

⁶ In-use Volatility Impact of Co-mingling Ethanol and Non-ethanol Fuels, SAE 940765, February 1, 1994

entire tank-full of gasoline will be increased. The “co-mingling” might occur between ethanol containing RFG and conventional fuel among drivers who frequent the areas on the border between non-RFG and RFG areas; among purchasers of ethanol-containing and ethanol-free conventional gasoline in non-attainment areas for ozone.

Aside, from the adverse air quality impacts of mandating ethanol in RFG, we believe that there may also be disruptions in RFG supply with attendant price spikes that will undermine public support for RFG. Although the ethanol industry is going to great pains to demonstrate it can supply all the oxygen needed in RFG across the nation, the simple fact remains that most ethanol is made in the mid-west and would be used in RFG areas thousands of miles away. Because ethanol must be separately transported and stored from RFG until it reaches wholesale or retail outlets, an entirely new infrastructure will be required under an *de facto* ethanol mandate. It is inevitable that this new infrastructure will fail at times. Such failures will cause price spikes and calls for the elimination of RFG or broad waivers. Areas that have opted in to RFG may opt out of the RFG program. We may even see a proliferation of more “clean” fuels that simply seek to avoid the ethanol mandate as some areas have sought to avoid MTBE in RFG.

AN MTBE PHASE OUT MUST INCLUDE PROVISIONS TO PREVENT “BACKSLIDING” IN TOXIC EMISSIONS REDUCTIONS FROM RFG

The Blue Ribbon Panel found that the use of MTBE helped refiners achieve a greater reduction in air toxics from RFG than the minimum required by law. Clearly MTBE, if nothing else, dilutes the toxic components of gasoline. We want to be sure that refiners, in complying with the MTBE phase-out, do not substitute toxic components that degrade the air toxics emissions reductions currently achieved. The American Lung Association supports Congress enacting an anti-backsliding provision that locks in these air toxics reduction benefits. Such a provision should be based on the average toxics reduction performance achieved in 2000 and 2001 RFG.

The refining industry argues that the Mobile Source Air Toxics (MSAT) rule issued by EPA under section 202(l) of the Clean Air Act serves this purpose and new legislative requirements are not required. We disagree. The MSAT rule uses outdated years to lock in past performance. Refiners are held to their performance based on an average of 1998, 1999, and 2000. However, in the RFG program Phase II of the toxics program did not start until 2000. Phase II initiated additional statutory reduction in air toxics reductions. Refiners outperformed prior years in response to the Phase II mandate. The attached chart demonstrates the difference achieved between 1998, 1999 and 2000. On a nationwide basis refiners produced Phase II RFG in 2000 that was *16 percent lower in air toxics* than Phase I RFG produced in 1998 and 1999 (See Tab 4, 5). We have little reason to believe refiners achieved lower air toxics reductions on average in 2001 than they did in 2000. As a matter of public policy we urge Congress not to take a step backwards by allowing Phase I years to be used as a measure of toxics performance in an anti-backsliding regime.

Second, under the MSAT rule, if an existing refiner of RFG produces additional volumes of RFG above its 1998-2000 levels, those volumes of RFG need only meet the legal minimum for Phase II RFG of 21.5 % reduction from baseline gasoline. We believe this element of the MSAT rule has the potential of significantly degrading air toxics reductions of RFG over time, as the MTBE phase out causes shifts in production among refiners that are very difficult to predict, especially on a regional basis. Any anti-backsliding provision must require that RFG refiners must produce new RFG that meets on average the same average toxic performance that old volumes of RFG must meet.

ETHANOL USE IN GASOLINE AND RFG WILL GROW

Much discussion has been generated about mandating the use of ethanol in conventional gasoline as a substitute for the demand the ethanol industry expects from the RFG program maintaining a mandatory oxygen requirement. Indeed, the American Lung Association endorsed S. 2962 introduced by Senator Robert Smith in the 106th Congress and reported by the Senate Environment and Public Works Committee containing such a mandate. It is clear that such an approach provides one path for obtaining the necessary political support for phasing out MTBE and eliminating the oxygen mandate in RFG. In the 107th Congress, the Environment and Public Works Committee has reported S. 950 which contains many of the elements the American Lung Association recommends today but does not include an ethanol mandate. Senator Daschle has introduced S. 670, which adopts an ethanol mandate similar to the approach to S. 2962.

The American Lung Association believes there will be a large role for ethanol in gasoline with or without any mandate for one simple reason: **octane**. Assuming that MTBE is eliminated from gasoline, which the ALA supports, refiners face a dramatic shortage in clean octane **even if every MTBE plant in the nation is converted to produce iso-octane or alkylates**, the most logical substitutes for MTBE. This is because MTBE plants converted to produce iso-octane or alkylates lose about 30% volume and produce a product that contains 15 percent less octane per gallon. This octane shortage may be increased by EPA's Tier 2 low-sulfur gasoline standard that will be in full effect in 2006. Refiners may lose modest amounts of octane in conventional gasoline, as they treat it to reduce sulfur in order to meet the new 30 ppm sulfur average requirement. As a result of these two impacts, a rough calculation indicates that demand for ethanol needed to supply octane in gasoline should increase to **3.8 billion gallons per year by 2006**. (See Tab 6) This is at least twice the baseline volume of ethanol projected by the Department of Agriculture to be produced in 2006.⁷ Should Congress fail to lift the oxygen mandate for RFG so that the entire octane currently provided by MTBE is replaced by ethanol in order to simultaneously meet the oxygen requirement, the demand for ethanol would reach **4.6 billion gallons per year in 2006**. Such an outcome would undoubtedly lead to shortages, price spikes, and disruptions that could only lead to reductions in the air quality benefits and loss of public support for the RFG program.

Clearly, we will need large increases of ethanol in gasoline, as we phase out MTBE. From an air quality perspective, it is best to set air quality performance requirements for gasoline and allow refiners to use ethanol when and where they need to while meeting such performance requirements. Such performance requirements must take into account evaporation effects from permeation and co-mingling from dramatically increased use of ethanol in gasoline. Should Congress decide to mandate ethanol in gasoline, we urge that additional air quality protections be put in place that would encourage ethanol use in ways that benefit air quality and not add to the air pollution burden.

Mr. GREENWOOD. Thank you, Mr. Early. Mr. Ports, thank you for being with us, and I recognize you for 5 minutes for your testimony.

TESTIMONY OF MICHAEL PORTS

Mr. PORTS. Thank you, Mr. Chairman. My name is Mike Ports, and I am President of Ports Petroleum Company, an independent motor fuel marketer headquartered in Wooster, Ohio.

Ports Petroleum owns and operates 65 high volume retail motor fuel outlets in 12 States, from Ohio to Nebraska, and south to Mississippi, and east to Georgia. Thank you for inviting me to testify today on issues relating to MTBE as an additive in Federal reformulated gasoline.

I am representing the National Association of Convenience Stores, NACS, and the Society of Independent Gasoline Marketers of America, SIGMA. From an independent marketers point of view, very little has changed on the issue of MTBE since NACS and SIGMA last testified before this committee on this issue in 1999.

Two key developments have occurred over the past 2 years. First, the Environmental Protection Agency has denied California's petition to opt out of the Federal RFG oxygenate mandate. Second, at least one lower Federal Court has upheld the State's power to ban the use of MTBE in gasoline sold in a State.

Perhaps more important than what has changed since 1999 is what has not changed. First, Congress still has not repealed the Federal RFG oxygenates mandate, and the oxygenate mandate still exists, despite the fact that refiners do not need oxygenates to manufacture and supply clean burning gasoline.

⁷ U.S. Department of Agriculture, Economic Analysis of Replacing MTBE with Ethanol in the United States, March, 2000

Second, the Federal oxygenate mandate continues to cause States to create additional boutique formulations of gasoline, either to avoid the use of MTBE or to promote the use of ethanol. Boutique fuels continue to be a primary cause of a substantial gasoline supply dislocation that occur whenever a refinery goes off-line or a pipeline breaks.

Further, these fuels are at least in part responsible for the severe wholesale and retail gasoline price volatility that often accompanies these dislocations. Third, California and other States still face a supply crisis if MTBE is banned from use as a gasoline additive.

Fourth, manufacturers of MTBE and ethanol, and their supporters, are still at a legislative stalemate. Neither side of this debate has been able to muster the political support and votes necessary to either ban the use of MTBE or mandate the use of ethanol.

Fifth, the EPA and the States still have not effectively enforced the 1998 underground storage tank upgrade mandate, a mandate that properly administered in force would prevent many of the MTBE releases that cause ground water contamination.

I would like to spend a couple of minutes on the subject of enforcement of the 1998 mandate. It is a subject that Congress can address today without delving into the other delicate and politically volatile issues relating to fuels regulation, such as an MTBE mandate or an oxygen mandate.

Late last year, Senator Smith and Chaffee asked the GAO to conduct an evaluation of the Federal underground storage tank program. We heard from GAO on a previous panel regarding this evaluation.

NACS and SIGMA agree with GAO's conclusions about the lack of consistent Federal and State enforcement of the underground storage tank requirements. GAO estimated that nearly 3 years after the 1998 deadline, only 89 percent of regulated tanks have come into voluntary compliance.

GAO identified State and local agencies and very small businesses as the primary owners and operators of tanks that remain in non-compliance. In its report, GAO recommended steps that Congress could take to provide additional underground storage tank resources to EPA and the States.

NACS and SIGMA have supported and continue to support such measures. This committee and the House of Representatives twice previously has passed legislation that would have expanded the allowable uses by the States of the leaking underground storage tank fund.

This committee should take up this legislation again as soon as possible. NACS and SIGMA, along with the Petroleum Marketers Association of America, the National Association of Truck Stop Operators, and the Oxygenated Fuels Association, support underground storage tank amendments that address most of GAO's recommendations.

Legislation to enact these recommendations should at the least include the following four components. Remove restrictions on the use of LUST trust fund monies by State trust funds; authorize the use of LUST trust fund monies by the State for LUST enforcement;

authorize \$200 million for use by the States in addressing high priority releases, such as those containing MTBE; and authorize the EPA to establish a national LUST data base to track upgraded and closed LUST.

NACS and SIGMA urges this committee and this Congress to consider and expeditiously pass this type of legislation. Such legislation can and should move independently of legislation addressing the oxygen mandate or MTBE.

An important consideration for this committee is that this stand alone LUST legislation can be passed in the near future, will assist EPA and the States to enforce the 1998 deadline, and will stop additional leaks of gasoline and its components from us.

Thank you for the opportunity to present NACS and SIGMA's views. I would be happy to answer any questions raised by my testimony.

[The prepared statement of Michael Ports follows:]

PREPARED STATEMENT OF MICHAEL PORTS, PRESIDENT, PORTS PETROLEUM COMPANY, INC. ON BEHALF OF NATIONAL ASSOCIATION OF CONVENIENCE STORES AND SOCIETY OF INDEPENDENT GASOLINE MARKETERS OF AMERICA

Good morning, Mr. Chairman. My name is Mike Ports. I am President of Ports Petroleum Company, an independent motor fuels marketer headquartered in Wooster, Ohio. Ports Petroleum owns and operates 65 high volume retail motor fuels outlets in 12 states from Ohio to Nebraska, south to Mississippi, and east to Georgia.

Thank you for inviting me to testify today on issues relating to MTBE as an additive in federal reformulated gasoline ("RFG"). I am representing the National Association of Convenience Stores ("NACS") and the Society of Independent Gasoline Marketers of America ("SIGMA").

NACS is a national trade association of more than 2,300 companies that operate over 104,000 convenience stores nationwide and employ 1.4 million individuals. Over 75 percent of NACS' member companies sell motor fuels and the convenience store industry sold more than 115 billion gallons in 2000. SIGMA is an association of approximately 260 motor fuels marketers operating in all 50 states. SIGMA members supply over 28,000 motor fuel outlets and sell over 48 billion gallons of gasoline and diesel fuel annually—or approximately 30 percent of all motor fuels sold in the nation last year.

This hearing has been titled as "An Update" on issues relating to MTBE in federal RFG. In reality, at least from an independent marketer's point of view, very little has changed since NACS and SIGMA last testified before this Committee on this issue in 1999. Two key developments have occurred over the past two years. First, the Environmental Protection Agency ("EPA") has denied California's petition to opt-out of the federal RFG oxygenate mandate. This denial has set up a potential gasoline supply crisis for California marketers and consumers if the state's MTBE ban takes effect on schedule on January 1, 2003. California has sued EPA over its waiver decision, and there are reports that California is considering a delay in its 2003 MTBE ban to avoid a gasoline supply crisis.

Second, at least one lower federal court has upheld a state's power to ban the use of MTBE in gasoline sold in a state. This legal question remains unsettled. However, from an independent marketer's perspective, the decision simply exacerbates the continued "balkanization" of the nation's gasoline markets. If MTBE, or any fuel component, can be banned on a state-by-state basis, then the problem of "boutique" fuels will only become worse.

Perhaps more important than what has changed since 1999 is what has not changed. In fact, much has remained the same. First, Congress still has not repealed the federal RFG oxygenate mandate. The oxygenate mandate still exists, despite the fact that refiners do not need oxygenates to manufacture and supply clean-burning gasoline and despite the fact that there is no environmental protection rationale for the oxygenate mandate.

Second, the federal oxygenate mandate continues to cause states to create additional boutique formulations of gasoline, either to avoid the use of MTBE or to promote the use of ethanol. These boutique fuels continue to stress the nation's gasoline refining and distribution systems. Boutique fuels continue to be a primary cause of the substantial gasoline supply dislocations that occur whenever a refinery

goes off-line or a pipeline breaks. Further, these fuels are, at least in part, responsible for the severe wholesale and retail gasoline price volatility that often accompanies these dislocations.

Third, California, and other states, still face a supply crisis if MTBE is banned from use as a gasoline additive. Ultimately, it will be consumers who will pay at the gasoline pump if these supply crises occur.

Fourth, manufacturers of MTBE and ethanol and their supporters are still at a legislative stalemate. Neither side of this debate has been able to muster the political support—and votes—necessary to either ban the use of MTBE or mandate the use of ethanol. This situation is not likely to change in the near future as many legislators are reluctant to touch the so-called “third rail” of fuels policy.

Fifth, EPA and the states still have not effectively enforced the 1998 underground storage tank (“UST”) upgrade mandate—a mandate that, if properly administered and enforced, would prevent many of the MTBE releases that cause groundwater contamination. I will comment more on this subject in just a minute.

Lastly, the positions of NACS and SIGMA on these public policy issues have not changed since 1999. We continue to support the repeal of the oxygenate mandate so that refiners and marketers can meet emissions standards without the use of MTBE or ethanol. We continue to support proposals to permit states to opt-out of the oxygenate mandate. And, we continue to support a reduction in the number of boutique fuel formulations across the nation—a reduction that will lead to increased gasoline supply, increased gasoline fungibility, and decreased gasoline price volatility.

We also continue to support even-handed and effective enforcement of the 1998 UST upgrade mandate. I would like to spend a couple of minutes on this subject—mainly because it is a subject that Congress can address today, without delving into the other delicate and politically volatile issues relating to fuels regulation, such as an MTBE ban or the oxygenate mandate.

NACS and SIGMA have long been vocal advocates of UST enforcement. Our motivation is simple: since 1988, our members have spent hundreds of millions of dollars complying with the UST standards. Further, many of our members, including so-called “mom-and-pops,” have closed retail outlets as a means of compliance.

Late last year, Senators Robert Smith and Lincoln Chafee asked the General Accounting Office (“GAO”) to conduct an evaluation of the federal UST program. GAO’s report, “Improved Inspections and Enforcement Would Better Ensure the Safety of Underground Storage Tanks,” was released on May 4, 2001. We heard from GAO on a previous panel. NACS and SIGMA agree with GAO’s conclusions in the report about the lack of consistent federal and state enforcement of the UST requirements.

GAO estimated that, nearly three years after the 1998 deadline, only 89 percent of regulated tanks have come into voluntary compliance. GAO identified state and local agencies and very small businesses as the primary owners and operators of tanks that remain in non-compliance. While it is true that EPA provided many of these UST owners with a six-month extension of the 1998 deadline, it is now late 2001 and EPA has shown no indication of a willingness to enforce the UST requirements against these and other non-complying tanks. Moreover, because EPA is not pressing UST enforcement, states also generally have ignored these non-complying tanks.

There is no justification for EPA or the states to distinguish between private and publicly-owned tanks. A leak from the UST of the local fire or highway department causes the same environmental harm as a leak from a private UST.

In its report, GAO recommended steps that Congress could take to provide additional UST resources to EPA and the states. NACS and SIGMA have supported, and continue to support, such measures. This Committee, and the House of Representatives, twice previously has passed legislation that would have expanded the allowable uses by the states of the Leaking Underground Storage Tank (“LUST”) Trust Fund monies. This Committee should take up this legislation again as soon as possible.

NACS and SIGMA—along with the Petroleum Marketers Association of America, the National Association of Truck Stop Operators, and the Oxygenated Fuels Association—support UST amendments that address most of GAO’s recommendations. Legislation to enact these recommendations should at the least include the following four components:

- Remove restrictions on the use of LUST Trust Fund monies by state UST funds, permitting clean-up resources to be deployed faster and minimizing clean-up costs and environmental harm from tank leaks;
- Authorize the use of LUST Trust Fund monies by the states for UST enforcement;

- Authorize \$200 million for use by the states in addressing high-priority releases, such as those containing MTBE; and,
- Authorize EPA to establish a national UST database to track upgraded and closed USTs.

NACS and SIGMA urge this Committee, and this Congress, to consider and expeditiously pass this type of legislation. Such legislation can and should move independently of legislation addressing the oxygenate mandate or MTBE. An important consideration for this Committee is that this stand-alone UST legislation can be passed in the near future, will assist EPA and the states to enforce the 1998 deadline, and will stop additional leaks of gasoline and its components from USTs.

Thank you for the opportunity to present NACS' and SIGMA's views. I would be happy to answer any questions raised by my testimony.

Mr. GREENWOOD. Thank you, Mr. Ports. I appreciate your testimony. Mr. Murphy, thank you for being with us, and you are recognized for 5 minutes for your testimony.

TESTIMONY OF EDWARD H. MURPHY

Mr. MURPHY. Thank you, Mr. Chairman. My name is Edward Murphy, and I manage Downstream Activities for the American Petroleum Institute, the trade association representing over 400 companies involved in all aspects of the natural gas and oil industry.

My responsibilities include oversight of issues important to the refining and marketing sector of the industry and this certainly includes MTBE. MTBE has been widely used in gasoline for 20 years, first in limited quantities to enhance octane as lead was removed, and more recently in far greater quantities to add oxygen to cleaner burning fuels as required by the reformulated gasoline and oxygenated gasoline provisions of the Clean Air Act.

API opposed the oxygen mandate, stressing that it wasn't necessary and urged at that time setting a single performance standard to meet the environmental requirements of the law.

But our advice was not heeded. As you know, in recent years testing of ground water, lakes and water supplies, has detected generally low concentrations of MTBE in several States, which in many cases has been traced to underground storage tanks.

While in nearly all cases the concentrations found have been well below the levels EPA has determined to be a public health concern, taste and odor concerns have required the installation of filters and reliance on other sources of water supply.

This is unacceptable to this industry and needs to be corrected. New EPA underground storage tank regulations have been implemented that have led to the upgrade and replacement of hundreds of thousands of tanks. But this is an area where EPA enforcement efforts, better EPA, and stronger EPA enforcement efforts are called for.

EPA has estimated that 15 percent of underground storage tanks do not comply with the requirements. API member companies feel strongly that any location that is not in compliance should not be in operation.

Further, API has been a strong supporter of State laws and regulations that prohibit deliveries into tanks that are not in compliance. As a result of the increased detections of MTBE in water, the EPA convened a special blue ribbon panel of experts from industry, government, and academia, to analyze the issue and make recommendations.

Quoting from that blue ribbon panel, "The great majority of MTBE detections to date have been well below levels of public health concern." However, the presence of MTBE has in the blue ribbon panel's view "raised consumer tastes and odor concerns that have caused water suppliers to stop using some water supplies and to incur costs of treatment and remediation."

Against this background, the blue ribbon panel recommended that the Federal reformulated gasoline oxygen mandate be repealed, that the use of MTBE be substantially reduced, and that EPA and State authority to regulate MTBE and other oxygenates be clarified.

The panel further recommended that all of these changes be made without sacrificing the air quality benefits of the RFG program. API strongly supports the blue ribbon panel's recommendations and implored Congress to implement them. In particular, Mr. Chairman, we commend you on your bill, H.R. 20, which is consistent with the panel's recommendations.

We believe that the simple and most effective solution to the MTBE problem is to repeal the RFG oxygenate mandate. It will enhance the environment, increase gasoline supplies, and reduce price volatility. It is urgently needed.

I know that the committee is interested in industry's views regarding MTBE replacement. How will the volume and octane losses be made up if the use of MTBE is restricted. The short answer is that with adequate lead time, and a major objective of reducing MTBE use, refiners can and will make the investments to replace a roughly 300,000 barrels a day of MTBE presently added to gasoline.

And I have in my statement some examples of how those volumes would be made up, but let me summarize that, Mr. Chairman, by saying that relative to the other problems faced by the U.S. refining industry, in terms of reducing the sulfur content of diesel fuel, and the sulfur content of gasoline fuel, making up roughly 300,000 barrels a day of MTBE volumes, when we are producing gasoline at 8,300,000 barrels a day over a 4-year period is a virtual walk in the park.

It can be done, and we would certainly never recommend that that be phased down without a firm conviction on our part that consumers will continue to be supplied with adequate gasoline. We heard from the DOE just a few minutes ago that they forecasted some sort short—if the problems with this reduction was made in the short term, and he didn't define what short term was.

Short term I guess is usually in the realm of 1 year, and frankly if the reductions in MTBE use are phrased in over a 1-year period, we would agree with them. Over a 4-year period, we can and will make up those volumes.

The industry has established a strong track record over many decades of meeting consumer needs when faced with changing conditions, provided that it has adequate lead time and a climate favorable to refinery investment.

We commend you for recognizing the need to provide the industry with lead in time in H.R. 20. In closing, let me reiterate that APR member companies are committed to addressing the MTBE issue, and are anxious to fulfill their obligation to ensure that con-

sumers have a ready access to readily available and affordable supplies of environmentally acceptable gasoline.

We stand ready to work with this subcommittee and others in Congress to address concerns about MTBE in a practical and effective way. Once again, the first step must be the repeal of the Federal oxygenate mandate. Thank you.

[The prepared statement of Edward H. Murphy follows:]

PREPARED STATEMENT OF EDWARD H. MURPHY ON BEHALF OF THE AMERICAN PETROLEUM INSTITUTE

Mr. Chairman, my name is Edward Murphy and I manage downstream activities for the American Petroleum Institute, a trade association representing 400 companies involved in all aspects of the U.S. oil and natural gas industry. My responsibilities include oversight of issues important to the refining and marketing sectors of the industry. These include fuels issues, such as MTBE.

MTBE has been widely used in gasoline for more than 20 years—first, in limited quantities to enhance octane as lead was removed and, more recently, in far greater quantities to add oxygen to cleaner burning fuels, as required by the reformulated gasoline and oxygenated gasoline provisions of the Clean Air Act Amendments of 1990. API opposed the oxygen mandate, stressing that it wasn't necessary and urged setting a simple performance standard instead, but our advice wasn't taken.

As you know, in recent years, testing of groundwater, lakes and water supplies has detected generally low concentrations of MTBE in several states, which, in many cases, has been traced to underground storage tanks. While, in nearly all cases, the concentrations found have been well below the levels EPA determined to pose public health concern, taste and odor concerns have required the installation of filters and reliance on other sources of water supply. This is unacceptable and needs to be corrected.

New EPA underground tank regulations have been implemented that have led to the upgrade and replacement of hundreds of thousands of tanks. API member companies have replaced and upgraded all of their underground storage tanks—some 60,000 tanks—at a cost of \$1.2 billion. In addition, API has supported rigorous enforcement of EPA underground tank regulations to ensure that the hundreds of thousands of tanks operated by non-API companies are also upgraded.

This is an area where stronger EPA enforcement efforts are called for; EPA recently estimated that about 15 percent of underground tanks do not comply with the requirements. API's member companies feel strongly that any location that is not in compliance should not be in operation. Further, API has been a strong supporter of state laws and regulations that prohibit deliveries into tanks that are not in compliance.

As a result of the increased detections of MTBE in water, EPA convened a special Blue Ribbon Panel of experts from industry, government and academia to analyze the issue and make recommendations. According to the Blue Ribbon Panel, "the great majority of [MTBE] detections to date have been well below levels of public health concern..." However, the presence of MTBE has, in the Blue Ribbon Panel's view, "raised consumer taste and odor concerns that have caused water suppliers to stop using some water supplies and to incur costs of treatment and remediation."

Against this background, the Blue Ribbon Panel recommended that the federal reformulated gasoline (RFG) oxygen mandate be repealed, that the use of MTBE be substantially reduced, and that EPA and state authority to regulate MTBE and other oxygenates be clarified. The Panel further recommended that all of these changes be made without sacrificing the air quality benefits of the RFG program. API strongly supports the Blue Ribbon Panel's recommendations, and implored Congress to implement them. In particular, we commend you on your bill, H.R. 20, which is consistent with the Panel's recommendations.

The October 15 issue of *Octane Week* quotes Tom White of the U.S. Department of Energy's Office of Policy as describing the current state of the MTBE issue as "the worst regulatory/legislative mess seen in a dozen years." We believe the simplest and most effective solution is repeal of the RFG oxygen mandate. It will enhance the environment, increase gasoline supplies, and reduce price volatility. It is urgently needed.

I know that the Subcommittee is interested in the industry's views regarding MTBE replacement—how will the volume and octane losses be made up if the use of MTBE is restricted. The short answer is that, with adequate lead time and a major objective of reducing MTBE use, refiners can and will make the investments

to replace the roughly 300 MB/D of MTBE presently added to gasoline. Some of the ways in which this will be accomplished are:

- Significantly increased use of ethanol as a gasoline additive. Studies have shown an increase in ethanol use of roughly 78 MB/D associated with an MTBE phase-out and elimination of the federal RFG oxygen mandate.
- Use of iso-octene and iso-octane from converted MTBE plants. Between 60 and 80 percent of existing MTBE capacity may be converted to iso-octene and iso-octane capacity. This conversion process could restore roughly 50 percent of the lost volume incurred if MTBE use were phased out, i.e., roughly 150 MB/D. Thus, roughly 75 percent of the volume loss associated with an MTBE phase-out can be recovered through conversion of MTBE feedstock to other gasoline blendstocks and increased ethanol blending.
- An increase in alkylate production will likely contribute at the margin to restore lost volume.
- Additional gasoline volumes from refinery capacity expansion and efficiency improvement projects that would normally be undertaken to meet growing demand will also replace some of the volume lost from an MTBE phase down. This is likely to replace a substantial portion of the lost volume if MTBE is phased down. Crucial to all volume recovery steps are sufficient lead time and reasonable permitting requirements.

There is no doubt that the U.S. oil and natural gas industry will be challenged to replace the lost volume if the use of MTBE is restricted. However, the industry has established a solid track record over many decades of meeting consumer needs when faced with changing conditions—provided it has adequate lead time and a climate favorable to refinery investment. We commend you for recognizing the need to provide the industry with sufficient lead-time in H.R. 20.

In closing, let me reiterate that API member companies are committed to addressing the MTBE issue and are anxious to fulfill their obligation to ensure that consumers have ready access to readily available and affordable supplies of environmentally acceptable gasoline. We stand ready to work with this Subcommittee and others in the Congress to address concerns about MTBE in a practical, effective way. Once again, the first step must be repeal of the federal oxygen mandate. Thank you.

Mr. GREENWOOD. Thank you for your testimony, Mr. Murphy. The Chair would ask for unanimous consent that the testimony of Daniel Greenbaum, President of Health Effects Institute that was prepared for this hearing—he was not able to participate—will be added to the record.

[The prepared statement of Daniel S. Greenbaum follows.]

PREPARED STATEMENT OF DANIEL S. GREENBAUM, PRESIDENT, HEALTH EFFECTS INSTITUTE

Mr. Chairman, and Members of the Committee, it is a pleasure to appear before you today to speak on the development of cleaner fuels and the role and challenges of using MTBE in those fuels. I speak today as both the President of the Health Effects Institute—an independent scientific institute funded by both government and industry to provide impartial science on the health effects of air pollution—and as the former Chair of the Blue Ribbon Panel on Oxygenates in Gasoline. In the wake of the detection of the additive MTBE (Methyl Tertiary Butyl Ether) in drinking water supplies in Maine, California, and elsewhere, the Blue Ribbon Panel was convened to investigate the facts of the situation and recommend actions to achieve both clean air and clean water. The Panel consisted of experts on air and water quality, as well as representatives of the oil, ethanol, and MTBE industry, and the environmental community.

I am here today to speak of both the good news from the last decade about reformulated fuel and clean air, and about the challenges that lie ahead.

First, the good news. The Clean Air Act Amendments of 1990, passed by Congress and signed into law by President Bush, required the introduction of new, cleaner-burning fuels—so-called Reformulated Gasoline or RFG—in all areas of the country facing serious ozone problems. That fuel, containing by law at least 2% by weight of oxygenates, was introduced in 1995, and resulted in a clear and measurable air quality benefit. Among other pollutants that were reduced, levels of benzene in ambient air—a known human carcinogen—were reduced almost immediately by 39% (EPA, 2000), and overall reductions in air toxics exceeded expectations. At the same time, because of adequate lead time for refiners to plan for and implement these

fuels, they were introduced into some of the largest markets in the U.S. with little or no impact on cost or supply of fuel.

Also, although these fuels needed oxygenates to replace octane when RFG was first introduced in the 1990s, the Blue Ribbon Panel found that today's refinery technology has been improved to enable the production of these clean fuels in a variety of ways—with oxygenates such as ethers and ethanol, but also without oxygenates altogether. This offers the opportunity to take a much more market-based approach to providing clean fuels—continuing the strong clean air performance standards, but giving the market much more flexibility to choose, based on efficiency and cost, the best way to ensure a low cost, abundant fuel supply. (Blue Ribbon Panel, 1999)

This good news does not come, however, without its challenges.

First and foremost, there is the challenge of MTBE. MTBE has shown itself to be a cost-effective and clean fuel-blending component. Research by HEI has shown MTBE to have relatively low potential for health effects (HEI, 1996, 2001). However, its relatively rapid transport through groundwater, and its distinctive odor and taste, have caused a number of drinking water wells to be shut down (BRP, 1999). As a result, the Blue Ribbon Panel recommended strongly a substantial reduction in its use. A number of states—California, Connecticut and New York—have gone further and legislated bans on its use, to take effect in 2003 and 2004.

Second, this pressure to reduce use of MTBE—which makes up 11% by volume of RFG—comes at a time when refiners are beginning to gear up to produce even cleaner-burning fuel for Tier 2 RFG. The Blue Ribbon Panel clearly saw the opportunity for a portion of the MTBE demand to be met by increased use of ethanol. But there is no such thing as a perfect fuel additive: although ethanol has fewer direct health effects, there are still questions about its effects and use, and although the other components of the refining stream likely have lower groundwater risk, they may have other consequences. Given that at this stage in clean fuel development refiners need maximum flexibility and a range of alternative ways to make clean fuels, the Panel concluded it was neither appropriate nor necessary to maintain the strict oxygenate content rules of the 1990 Clean Air Act Amendments, and recommended that either the oxygenate mandate be removed or that EPA be granted enhanced authority to waive these requirements. (BRP, 1999)

Third, the Panel wanted to ensure that the air quality advances achieved by RFG would continue, even while refiners had greater flexibility on what to blend. Along with the recommendation to allow the removal of the oxygenate mandate, the Panel strongly recommended the maintenance and enhancement of the air quality performance standards for RFG to ensure continued benefits.

So in conclusion, where do these opportunities and challenges leave us today?

We have two paths we can follow for clean fuels: to continue clean-burning fuels with legislatively-mandated fuel additive requirements, and risk potential market dislocations and increases in price; or to keep the strong clean air performance requirements for these fuels, but to free the market to make them in the most cost-effective way possible, with a minimum of specific fuel additive requirements.

In the view of the Blue Ribbon Panel, this market-driven path is clearly preferable. It will result in continued clean air benefits, but also in a substantial increase in the use of ethanol *without* risking the higher prices and market shortages that could result from continued fuel additive mandates. With this path, we have the chance to see clean air improvements, and stable fuel markets, well into the 21st century.

Thank you for the opportunity to present these comments.

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Mr. GREENWOOD. As well as a document entitled, "Supplemental Data from GAO's Review of the Underground Storage Tank Program."

[The information follows.]

SUPPLEMENTAL DATA FROM GAO'S REVIEW OF THE UNDERGROUND STORAGE TANK
PROGRAM

In response to a congressional request, we reviewed the Environmental Protection Agency's (EPA) program to regulate underground tanks used to store fuel and other substances. The program was designed to help ensure that the tanks remain safe and do not leak their contents, which contain hazardous substances that can contaminate soil and groundwater and pose health risks. Because the states primarily implement the provisions of the program, we conducted a survey of all 50 states and the District of Columbia to determine whether tanks comply with program requirements, how EPA and the states are inspecting and enforcing the requirements, and whether upgraded tanks still leak. We issued a report on the results of our work on May 4, 2001 entitled, *Environmental Protection: Improved Inspections and Enforcement Would Better Ensure the Safety of Underground Storage Tanks* (GAO-01-464). The following tables provide additional data on our survey results that supplement our report. The tables provide a listing of:

- the types of enforcement tools used in each state to ensure tanks comply with program requirements, including the ability to issue field citations, levy fines, and prohibit suppliers from delivering fuel to stations with problem tanks;
- those states that indicated they need additional enforcement authority and resources;
- those states that indicated some of their tanks continue to leak even after federally required leak prevention equipment had been installed;
- the frequency of tank inspections in each state and the three EPA regions that have the largest number of tanks to monitor (EPA, rather than the states, is responsible for a small number of tanks primarily located on Indian lands); and
- the number of tanks, the number of inspection staff, and the frequency of inspections for each state.

Table 1: Types of Enforcement Tools

State/EPA Region	Prohibit Deliveries	Issue Fines	Issue Field Citations
District of Columbia	X	X	X
Minnesota	X	X	X
Montana	X	X	X
North Carolina	X	X	X
Oklahoma	X	X	X
South Carolina	X	X	X
Vermont	X	X	X
Washington	X	X	X
Arkansas	X	X	
California	X	X	
Georgia	X	X	
Illinois	X	X	
Iowa	X	X	
Kansas	X	X	
Louisiana	X	X	
Massachusetts	X	X	
Michigan	X	X	
Nevada	X	X	
Oregon	X	X	
Texas	X	X	
Utah	X	X	
West Virginia	X	X	
Colorado		X	X
Connecticut		X	X
Delaware		X	X
Hawaii		X	X
Missouri		X	X
New Hampshire		X	X
New Jersey		X	X
New Mexico		X	X
North Dakota		X	X
Ohio		X	X
South Dakota		X	X
Alaska	X		

Table 1: Types of Enforcement Tools—Continued

State/EPA Region	Prohibit Deliveries	Issue Fines	Issue Field Citations
Wisconsin	X		
Alabama		X	
Arizona		X	
Florida		X	
Indiana		X	
Kentucky		X	
Maryland		X	
Mississippi		X	
Pennsylvania		X	
Rhode Island		X	
Tennessee		X	
Virginia		X	
Wyoming		X	
Idaho			
Maine			
Nebraska			
New York			
EPA Region 8		X	X
EPA Region 9		X	X
EPA Region 10		X	X

Table 2: Reported Needs

State/EPA Region	Needs Additional Enforcement Authority	Needs Additional Resources
Alabama		X
Alaska	X	X
Arizona	X	X
Arkansas	X	X
California	X	X
Colorado	X	X
Connecticut	X	X
Delaware	X	X
District of Columbia	X	X
Florida	X	X
Georgia	X	X
Hawaii		
Idaho	X	X
Illinois	X	X
Indiana		X
Iowa	X	X
Kansas	X	X
Kentucky		X
Louisiana		X
Maine	X	X
Maryland		X
Massachusetts		X
Michigan	X	X
Minnesota		X
Mississippi		X
Missouri	X	X
Montana		X
Nebraska		X
Nevada		
New Hampshire		X
New Jersey	X	X
New Mexico	X	X
New York		X
North Carolina		X
North Dakota		
Ohio	X	X

Table 2: Reported Needs—Continued

State/EPA Region	Needs Additional Enforcement Authority	Needs Additional Resources
Oklahoma		
Oregon	X	X
Pennsylvania	X	X
Rhode Island	X	X
South Carolina		X
South Dakota	X	X
Tennessee	X	X
Texas		
Utah		X
Vermont		X
Virginia		X
Washington		X
West Virginia	X	X
Wisconsin		X
Wyoming	X	X
EPA Region 8	X	X
EPA Region 9	X	X
EPA Region 10	X	X

Table 3: Leaks From Upgraded Tanks

State/EPA Region	Some Tanks Leak	Tanks Seldom or Never Leak	Don't know
Alabama	X		
Alaska		X	
Arizona			X
Arkansas	X		
California	X		
Colorado			X
Connecticut	X		
Delaware			X
District of Columbia	X		
Florida			X
Georgia	X		
Hawaii	X		
Idaho			X
Illinois		X	
Indiana		X	
Iowa			X
Kansas	X		
Kentucky			X
Louisiana	X		
Maine	X		
Maryland			X
Massachusetts			X
Michigan	X		
Minnesota			X
Mississippi		X	
Missouri		X	
Montana		X	
Nebraska		X	
Nevada			X
New Hampshire		X	
New Jersey			X
New Mexico		X	
New York			X
North Carolina			X
North Dakota		X	
Ohio		X	
Oklahoma	X		
Oregon			X

Table 3: Leaks From Upgraded Tanks—Continued

State/EPA Region	Some Tanks Leak	Tanks Seldom or Never Leak	Don't know
Pennsylvania			X
Rhode Island		X	
South Carolina		X	
South Dakota		X	
Tennessee			X
Texas		X	
Utah	X		
Vermont		X	
Virginia			X
Washington	X		
West Virginia			X
Wisconsin			X
Wyoming		X	
EPA Region 8		X	
EPA Region 9			X
EPA Region 10		X	

Table 4: Inspection Frequencies

State/EPA Region	Every Year	Every 2 or 3 Years	4 Years or Longer	No Regular Basis
Alabama		X		
Alaska		X		
Arizona			X	
Arkansas			X	
California	X			
Colorado	X			
Connecticut			X	
Delaware				X
District of Columbia				X
Florida	X			
Georgia				X
Hawaii		X		
Idaho				X
Illinois		X		
Indiana		X		
Iowa				X
Kansas				X
Kentucky				X
Louisiana			X	
Maine				X
Maryland				X
Massachusetts			X	
Michigan		X		
Minnesota				X
Mississippi			X	
Missouri		X		
Montana		X		
Nebraska		X		
Nevada		X		
New Hampshire				X
New Jersey				X
New Mexico	X			
New York				X
North Carolina			X	
North Dakota				X
Ohio				X
Oklahoma	X			
Oregon				X
Pennsylvania			X	
Rhode Island				X
South Carolina		X		

Table 4: Inspection Frequencies—Continued

State/EPA Region	Every Year	Every 2 or 3 Years	4 Years or Longer	No Regular Basis
South Dakota		X		
Tennessee			X	
Texas				X
Utah		X		
Vermont				X
Virginia			X	
Washington				X
West Virginia				X
Wisconsin	X			
Wyoming				X
EPA Region 8		X		
EPA Region 9		X		
EPA Region 10				X

Table 5: Inspection Workload and Staff Resources

State	Number of Tanks	Number of FTE's	Inspection Frequency
Alabama	18,567	11.001	2 or 3 years
Alaska	1,122		2 or 3 years
Arizona	8,191	5.00	4 or more years
Arkansas	9,941	10.00	4 or more year
California	50,000	40.00	Every year
Colorado	7,990	12.00	Every year
Connecticut	13,831	3.25	4 or more years
Delaware	1,744	6.25	No regular basis
District of Columbia	754	7.00	No regular basis
Florida	32,320	169.00	Every year
Georgia	27,944	16.50	No regular basis
Hawaii	2,184	2.50	2 or 3 years
Idaho	3,479		No regular basis
Illinois	27,317	23.00	2 or 3 years
Indiana	7,974	6.00	2 or 3 years
Iowa	8,499	5.00	No regular basis
Kansas	7,830	7.15	No regular basis
Kentucky	14,843	10.00	No regular basis
Louisiana	16,100	9.00	4 or more years
Maine	3,709	1.50	No regular basis
Maryland	8,784	6.00	No regular basis
Massachusetts	12,122	3.00	4 or more years
Michigan	23,500	21.00	2 or 3 years
Minnesota	14,000	5.50	No regular basis
Mississippi	9,533	5.00	4 or more years
Missouri	11,039	14.00	2 or 3 years
Montana	3,619		2 or 3 years
Nebraska	7,133	11.00	2 or 3 years
Nevada	3,533	2.75	2 or 3 years
New Hampshire	3,067	2.00	No regular basis
New Jersey	17,971	5.50	No regular basis
New Mexico	3,852	9.00	Every year
New York	32,928	8.70	No regular basis
North Carolina	31,000	13.00	4 or more years
North Dakota	2,407	5.00	No regular basis
Ohio	29,037	5.00	No regular basis
Oklahoma	10,634	21.00	Every year
Oregon	7,370	2.00	No regular basis
Pennsylvania	29,542		4 or more years
Rhode Island	1,788	Unknown	No regular basis
South Carolina	12,727	12.00	2 or 3 years
South Dakota	3,089	1.00	2 or 3 years
Tennessee	17,167	6.00	4 or more years
Texas	54,674	23.00	No regular basis

Table 5: Inspection Workload and Staff Resources—Continued

State	Number of Tanks	Number of FTE's	Inspection Frequency
Utah	4,193	6.00	2 or 3 years
Vermont	2,442	3.00	No regular basis
Virginia	32,267	18.00	4 or more years
Washington	11,450	7.00	No regular basis
West Virginia	6,629	6.75	No regular basis
Wisconsin	16,544	34.00	Every year
Wyoming	2,071	1.00	No regular basis

Note: Private contractors perform inspections in AK, MT and PA. EPA performs inspections in ID.

Mr. GREENWOOD. Without objection, those two documents will be added into the official record of this hearing, and the Chair recognizes himself for 5 minutes. Mr. Murphy, are you familiar with H.R. 20, my legislation?

Mr. MURPHY. I am roughly familiar, yes, sir.

Mr. GREENWOOD. Based on your testimony, it would seem to me that what we have here is the tail wagging the dog. We have got an MTBE tail that wants to wag the dog, and we have got an ethanol tail that wants to wag the dog. But the dog is represented by your institute, and what you are saying is that if you let us formulate gasoline we can meet air quality standards, and as long as we are not overly prescribed by this oxygenate requirement. Is that a fair characterization of your testimony?

Mr. MURPHY. That is a fair characterization. So, tell us what the performance objectives are or want to be.

Mr. GREENWOOD. Do you have any difficulty with my legislation of H.R. 20?

Mr. MURPHY. No, sir.

Mr. GREENWOOD. Do you support it?

Mr. MURPHY. We support it.

Mr. GREENWOOD. Thank you. Ms. Chamberlain, Mr. Adams and Mr. Ports make the case that what we ought to do in Pennsylvania and around the country is just stop tanks from leaking. If we can stop the tanks from leaking, then people like Mr. Kahlenberg won't have to have stinky water. Does that make sense to you? Would that solve the problem?

Ms. CHAMBERLAIN. I think that the progress that has been made since the 1998 upgrade, we will probably be able to see less releases. I know that we have taken a look at the situation, and over the last 5 years we have had about a thousand to 1,200 releases per year.

We now have as of this year about 330 to date. I think it is the best that we can do, even with the upgrades, and there are still going to be releases, and I think we have to take it into consideration. There has been an improvement, but the releases will always be there.

Mr. GREENWOOD. Okay. Mr. Kahlenberg, has anyone been able to tell you what the long-range future for you and your neighbors, and of course as you and I know, you are just one neighborhood in our county alone. There have been dozens of neighborhoods affected by water contaminated with MTBE.

Is anyone telling you what the long-range—what you can expect in the long-range? Are you going to have to have this filtering system on your home forever?

Mr. KAHLENBERG. That is my understanding. At this point in time, we are going to keep maintaining our system, our input, still at the levels that we saw originally.

Mr. GREENWOOD. And who covers the cost of that?

Mr. KAHLENBERG. I do at this point.

Mr. GREENWOOD. And can you tell us what those costs are like?

Mr. KAHLENBERG. To have one sample analyzed by the lab costs about \$150.

Mr. GREENWOOD. And how about the maintenance of the filtration system?

Mr. KAHLENBERG. It varies depending on how well my filtration system performs, which to replace one of my tanks would be—I have not had to do that luckily yet, but about \$500.

Mr. GREENWOOD. Ms. Chamberlain, Mr. Dinneen says he has the answer. Let them build some ethanol facilities in Pennsylvania, and replace the MTBE with ethanol. Does that solve the problem for us in Pennsylvania?

Ms. CHAMBERLAIN. Well, I am not sure that we have a plant imminent in Pennsylvania, but I do think that ethanol could be good as an alternative fuel. I think the main thing that we have stressed in our testimony today is we want to make sure that we are not sacrificing air quality and water quality, as well as our supplies. So I think it is important, and I think Congress is well aware that we have to take it all into consideration.

Mr. GREENWOOD. Mr. Murphy, what is wrong with Mr. Dinneen's suggestion? He says just leave the oxygenate requirements and we will build ethanol facilities all over the country, and be able to put our tail into your dog?

Mr. MURPHY. I am sure that if the use of ethanol is mandated that will occur, but we don't need ethanol to meet the performance requirements. We use ethanol, and we will be using more ethanol as Mr. Early correctly stated.

We need flexibility in providing consumers with the most affordable and readily available supplies of gasoline. We can't produce and meet those performance standards without the use of oxygenates, or with the use of ethanol.

Mr. GREENWOOD. Mr. Dinneen, do you have a response to that?

Mr. DINNEEN. Yes, Mr. Chairman. First of all, I want to thank you for being characterized as the tail on the dog. We are usually characterized as the flea on the tail on the dog. So I think there is progress being made here already.

I actually agree with some of what Mr. Murphy has said. I think the refiners can indeed produce a gasoline that meets the performance standards of the Act. But you have got to remember the performance standards alone do not capture all of the environmental benefits that occur as a result of reformulated gasoline with oxygen.

The benefits of oxygen are really in high emitters, off-road vehicles, reducing particulate matter, reducing carbon monoxide, all things for which there are no performance requirements.

Can they meet the strict performance requirements in the Act? Yes, they can. Will it capture all of the environment benefits that this program has seen with oxygen? I think Mr. Holmstead indicated earlier that there is a question as to whether or not that can occur.

Mr. GREENWOOD. My time has expired. The Chair recognizes the ranking member, Mr. Deutsch, for 5 minutes.

Mr. DEUTSCH. Thank you, Mr. Chairman. I have two statements that I would like to submit for the record, one from the chairman, or the ranking democrat of the full committee, and so without objection, we can submit that.

Thank you. Mr. Dinneen, in EPA's boutique fuels report, the EPA analyzed a number of different fuel scenarios. These included requiring a single clean burning gasoline nationally, and allowing States to choose from a menu of 2 or 3 types of fuels. In the options analyzed by the EPA, are there any that your organization favors?

Mr. DINNEEN. Congressman, I apologize, but I am not all that familiar with the EPA report. It was just released last week. I will tell you, however, that we do support the legislation that Congressman Rush has introduced with Congressman Blunt as a means of making the gasoline distribution system more fungible, while ensuring that the air quality benefits of oxygenates are maintained.

Mr. DEUTSCH. Would anyone else—Mr. Adams, or Mr. Murphy, would you like to respond to that?

Mr. MURPHY. Again, that report just came out, and the report made some objections which there is some suggestions on, in terms of tank turnovers, and things which would be helpful, but frankly they avoided the basic problem and the basic cause of the boutique fuels problem, which as I stated in the oxygenate mandate in the Clean Air Act.

Mr. DEUTSCH. Mr. Adams.

Mr. ADAMS. Basically, the report itself is as Jeff Holmstead said is a staff paper, and it is in the preliminary stages, and here is much more work to be done on it. We find that there are some parts that are missing, and some parts that are not complete, but he said there would be more work done on it. So we have problems with it.

Mr. DEUTSCH. Ms. Chamberlain, you stated that you support phasing out MTBE and allowing States to waive the oxygenate requirement. Won't these actions tend to increase, rather than decrease, the number of boutique fuels?

You have stated regional performance standards can help to minimize the number of fuels. Is there any assurance that under such a system that we would actually end up with fewer fuels than today?

Ms. CHAMBERLAIN. It is possible that that would be the case and I think the EPA staff report and its white paper is talking about a number of options out there as far as providing a number of fuels and different options so that it could be possible.

Mr. DEUTSCH. Did anyone else want to respond? Yes, Mr. Early.

Mr. EARLY. Well, I think it is very clear that if you have a good fuel that doesn't have MTBE in it, and doesn't have an ethanol mandate in it, States won't be motivated to come up with their own formula.

If you have a Federal fuel along the lines of what we have endorsed, and then States aren't motivated to come up with their own boutique fuel because they have a fuel that doesn't threaten their water, and it doesn't threaten their air quality because of volatility from mandatory ethanol requirements. So they have no motivation to come up with their own formula.

Mr. DEUTSCH. Mr. Murphy.

Mr. MURPHY. I agree with Mr. Early. If we did not have the oxygenate mandate in the Clean Air Act, it would be relatively easy to reduce the number of fuels from roughly 15 at the moment to about 5 or 6.

And those that mix in those 5 or 6 fuels would be environmentally superior, would have cleaner overall environmental impacts than the existing mix of fuels, and would substantially increase the fungibility of the gasoline system, and increase our capabilities to supply gasoline in a readily affordable and available fashion.

Mr. DEUTSCH. Thank you. I yield back.

Mr. GREENWOOD. The gentleman yields back. The Chair recognizes Mr. Barton for 5 minutes.

Mr. BARTON. Thank you, and I appreciate the courtesy of the subcommittee for allowing me to participate. I am not a member of the subcommittee, although I am a past Chairman of this subcommittee, and a current subcommittee chairman of the authorizing subcommittee that has got jurisdiction over the Clean Air Act.

I assume that we all agree that the oxygenate fuel requirement has cleaned the air. Is there anybody that disagrees with that? I see nobody is doing anything but looking stoic.

Mr. MURPHY. Again, I think as Mr. Holmstead pointed out, I think the RFG program has resulted in a substantial improvement in air quality.

Mr. BARTON. Okay.

Mr. MURPHY. So how much of that is due to the oxygenate requirement I think is questionable historically, and at the moment I think, or according to the blue ribbon panel, is in fact fairly minor.

Mr. BARTON. Well, we have heard no testimony, and I am an engineer by training, and I have seen no data that suggests that it has not been a success, and that the oxygenate requirement has been a large part of that success.

Mr. DINNEEN. Congressman, excuse me if I might. One way to determine the relative merits of the oxygenate content versus low RFG gasolines is to look at air quality data comparing some of the gasoline in Atlanta, or Pittsburgh, where low RFG fuels, but it doesn't have an oxygenate requirement.

And by and large that data suggests unequivocally that you have a much cleaner air quality benefit from the RFG with the oxygen content than simply low RFG gasolines.

Mr. BARTON. Well, I don't want to belabor this because I have a point that I want to make, and I think you all know what my point is. I think MTBE works. I think it is cost effective.

I think there are alternatives to it. Ethanol is an alternative, and the reformulated gasoline is an alternative. But we ought to do what is quaintly called cost benefit analysis, and I have yet to see

a cost benefit analysis that says that the ethanol alternative, or the RFG alternative, is as cost effective.

You are going to pay more to get the same air quality, and I have also yet to see any analysis that shows that you can get as much air quality improvement that you get with MTBE. You can meet the minimum standards under the Act with RFG or ethanol blends, no question.

But if you want to get the maximum air quality benefit, the thing that works right now is MTBE. So where I come down is I think of where Mr. Ports was, is that we ought to enforce the leaking underground storage tank.

We ought to go ahead and put the money in, and make that happen. I think we have got around a billion dollars in the fund. We put out a little paltry amount every year and let the States take it, and do what they want to.

And they don't do it, and they use it for administrative purposes. They don't go out and enforce the law. They just kind of piddle around. So we put in a Capps amendment in the energy bill.

Congresswoman Capps is I would say a moderate progressive democrat from California, and who said that we ought to actually take some of that money and give it to the States, and tell them to enforce the law, and that is now pending before the Senate.

So in the absence of a more cost effective alternative that is where I am; is that I want to spend the money to enforce the LUST tank law, and I will look at alternatives. If we can come up with a cost effective alternative, whether it is ethanol based or some of these other additives that API has been working on, that's fine.

But I am going to insist that as we do that that we get the same air quality benefit, and not just the minimum required by law. But MTBE in some cases is twice as effective, in terms of the cleanup, and that is something that is not mentioned very often. Now, Mr. Early, you have been very patient as I have demigoded this.

Mr. EARLY. I agree with your analysis in part, but the problem is that there is not any question that MTBE is cost effective, but the question is cost effective for whom, because from the Lung Association standpoint, we want more than just the mandatory RFG areas to be using clean fuels.

And if we continue to have MTBE in reformulated gasoline, communities are not going to opt into the program. They are not going to involve the communities that are non-mandatory communities, because of the water contamination problem. That is what is driving our concern.

So you are correct from a purely cost effectiveness standpoint, but we also know that clean fuels are a very cost effective way of combating the ozone, and we want to proliferate those fuels throughout the country where it makes sense.

As you understand probably better than I do, communities have a tool chest of clean air cleanup options that they can choose, and reformulate gasoline has been demonstrated to be one of the most cost effective ones, and we want communities to continue to do that.

Mr. BARTON. My time has expired, and I am not even on the subcommittee, and so I am here at the courtesy of both the minority

and majority. I just want to say that we are very open, at least I am, to a solution.

But I want it to be more than a minimal solution, and I want to look at costs, and I want to look at benefits, and I want to look at long term, and there is just a lot of issues here.

But I understand Mr. Kahlenberg's—if I am saying that correctly—all he knows is that he has got bad water, and his wife doesn't like it, and his neighbors doesn't like it, and the government ought to do something about it. And I agree with that. Thank you, Mr. Chairman, for allowing me to participate.

Mr. BASS [presiding]. Thank you very much, Mr. Barton. I will recognize myself for 5 minutes. Mr. Kahlenberg you do have a problems. There are a lot of constituents in my State of New Hampshire that have the same problem.

Mr. Adams, if I recall, you are a proponent of MTBE. What do you have to say to Mr. Kahlenberg? What are his options and what are the options of the—literally in my district of thousands of individuals without municipal water, and with contaminated wells, looking for a solution to a problem that they had no part in creating.

Mr. ADAMS. I am very sympathetic to his situation. I was in charge of enforcement at one time at EPA, and I am aware that there is not the strong enforcement of the LUST program that there should be at present. That's No. 1.

I am also on the Clean Water Foundation and care very much, Mr. Kahlenberg, about your issue. As to what you can do at present, I do not have any specific ideas of the area or what New Hampshire has with regard to the rules or compensation, or that type activity.

All I can do is just in general hope that we get to the situation where we do have a sound leaking underground storage tank program that will protect you in the future.

Mr. BASS. To continue the line of questioning here. The underground storage tanks are definitely an issue. However, I believe that MTBE is stable enough so that if you just pour it on the ground, or if you spill at the gas stations, and somehow it doesn't flash off, you have the same problem.

And if a gas station isn't located next to a river—and in my home town they are all next to a river—then you can get the MTBE into the water supply that sinks down, and it basically sits there.

And we have an issue of clean air. We have to clean up the air, but we are creating for ourselves a tremendous long term problem with this substance that is seeping into the ground that will contaminate wells essentially indefinitely.

And what is worse in my home State is we are in a non-attainment area, but we can't get into attainment because the source of the pollution doesn't come from New Hampshire, even if we dropped the emissions to zero. It comes from the midwest.

So I was wondering if anybody on that panel can give me some advice as to what I tell my constituents on what are their options. Does anybody want to take a stab at it? Mr. Murphy?

Mr. MURPHY. I think the option—unfortunately, the option that New Hampshire has chosen is going to exacerbate the boutique fuels problems. Of course, as you know, the government has re-

quested to waive out of the RFG program because of the MTBE contamination.

And then to create a boutique fuel, which of course would be unique to New Hampshire. And we are concerned about that, because that leaves open the possibility of supply interruptions, and price volatility, and adverse consumer impacts.

But the answer quite honestly as I said in my testimony is amazingly simple, and that is to repeal the oxygenate mandate in the Clean Air Act so that we can supply the clean gasoline that the New Hampshire consumers have a right to use, and a right to have access to, without MTBE in it.

Mr. BASS. Well, set me straight here. If you repeal the oxygenate mandate, you said that it would reduce the number of boutique fuels, and you would still meet the Clean Air requirements. And how do you meet those requirements?

Mr. MURPHY. You meet the requirements by producing the fuel that in fact meets the standards for RFG without the use of oxygenates. That can be and that is done, and that is something that we can do.

We will have to make up the volumes as I said over roughly a 4-year period, but we can provide gasoline which meets the environmental demands of the New Hampshire consumers. We can do that without the use of MTBE.

Mr. BASS. Do you agree with that, Mr. Adams? Do you agree with Mr. Murphy on that point? It seems to be a reasonable solution.

Mr. ADAMS. Certainly not, Mr. Chairman, at the moment. Basically, I think that there has been a report that has been put out—and which I will get for you—with regard to the fact that if something is spilled literally on the ground that you end up with a hundred percent of evaporation rate, and most gasoline stations themselves say if it is on the ground, or concrete, as required by law in most instances. But there is a full report on spills which I will get to you, and submit to the committee.

Mr. BASS. Thank you.

Mr. MURPHY. If I can interrupt.

Mr. BASS. Yes, go ahead.

Mr. MURPHY. As you know, when the State of Maine, when this problem first came to the surface as a result of an automobile accident, where the tank on the automobile was pierced and roughly 10 gallons, I think, spilled as a result, and contaminated water supplies for quite a few in the area.

So unfortunately even with the—and we certainly as I said strongly support enforcement of the underground storage tank laws, but even if that takes places, we are still going to have a problem with obtaining gasoline. So we do need to have MTBE taken out.

Mr. BASS. Okay. Thank you. And one last thing. Mr. Dinneen, can you—as I recall it, Mr. Early is no fan of ethanol, right, the use of ethanol. I am just trying to remember which one of you said what.

Mr. DINNEEN. I am shocked.

Mr. BASS. Can you rebut the points briefly that Mr. Early brought up with respect to the use of ethanol as a motor fuel, versus other uses?

Mr. DINNEEN. Well, not briefly, Congressman. In my written testimony, a lot of it gets to some of the issues that Mr. Early was raising. I will take one just for example. It mentioned co-mingling.

The State of California looked at the co-mingling of ethanol blends with conventional gasoline extensively in its review of ethanol as an alternative to MTBE in anticipation of the MTBE phase-out that will take place next year, and it concluded that co-mingling was simply just not much of a problem.

The co-mingling issue arises because if you blend ethanol gasoline with non-ethanol blended gasoline in a vehicle tank, it will increase the evaporative emissions from the co-mingled blend.

But it involves a lot of assumptions about when you refuel, what your buying habits are, and for most people that I think are like me, you get to that gas station when you are on E and you are running on fumes, and you roll on in.

And in those situations, there simply is not a co-mingling problem. And it assumes that you are going to have half the tank filled with MTBE gasoline, and then drive into a containment area where you will have ethanol blended gasoline and fill it with a half-tank, and those situations are just going to be extremely rare.

But there are a number of other issues that were raised, like permeation and stuff like that, and I would be glad to provide the committee with a great deal of information on, because the permeation issue quite frankly is more of an issue of aromatics and not ethanol.

And ethanol is going to reduce aromatic content. It is one of the significant environmental benefits that we have. I think Mr. Early has pointed out some issues, and he has not necessarily looked at all of the issues with regard to high emitters, off-road engines, carbon monoxide a particular matter, and aromatic content.

And I think if you were to do a comprehensive review of all of these that you get a much better sense. But Mr. Early and I can probably debate this for quite some time over drinks, and I would be glad to buy and do that, and we can even do it with the committee, and have a good old time.

Mr. BASS. Mr. Early. Well, a brief rebuttal, Mr. Early, and then Mr. Adams.

Mr. EARLY. I am just really surprised that Mr. Dinneen brings up California, because the EPA did not agree with California's analysis, and turned down California's waiver request because they felt that the co-mingling was a problem, and the only way to solve the problem in California was to require ethanol in a hundred percent of the fuel.

And which perfectly illustrates my point that this co-mingling issue, even the EPA agrees is a real issue.

Mr. BASS. Mr. Adams.

Mr. ADAMS. I want to reemphasize that reading from the testimony of Linda Fisher on the Senate side, she said that under the new scenarios analyzed earlier this year by EPA, co-mingling would result increased in VOC emissions.

And depending upon the level of the increase associated with comingling, the total emissions of VOC associated may increase or decrease, resulting in an uncertain impact on the ozone. That was the definitive statement from EPA at the time.

Mr. BASS. I am going to use the chairman's prerogative to ask one more question. Ms. Chamberlain, can you give us some idea as to how a typical MTBE contaminated well is remediated? How long does it take and what is the process?

Ms. CHAMBERLAIN. I think that really does just depend upon the leak itself. It depends upon whether it is a small one and you are dealing with an individual tank, or whether it happens to be a larger release that affected Bucks County.

As I mentioned in my testimony, we have had a number of spills, even though they have been ones that have affected a number of wells themselves. And in some of the cleanups, we have been spending, oh, \$5 to \$6 million to clean up a spill from a particular facility.

So it does depend upon its size. For an average tank, we just recently had our underground storage tank indemnification fund meet, and with the actuarial analysis, and the average cost for the typical spill of one tank at a gas station runs about \$125,000 and it can be readily addressed.

Mr. BASS. Is Mr. Kahlenberg's tank going to be—well, is his well going to be fixed or not?

Ms. CHAMBERLAIN. Well, as I was saying, that happens to relate to an area where just one spill affected quite a large area, and we do have a multi-million dollar cleanup under way in order to address the situation.

Mr. BASS. Okay. Thank you very much, Mr. Chairman.

Mr. GREENWOOD. Okay. I have one final question, and I will address it to Mr. Dinneen. Your statement notes that the EPA white paper concluded that there would be no additional costs in imposing a renewable fuels requirement in lieu of an oxygenate mandate.

I would note that the level of this requirement contained in the white paper was 2.4 percent of gasoline consumption. Do you agree that this is the proper level for any renewable fuels requirement, and if not, why not?

Mr. DINNEEN. I believe that the domestic ethanol industry could support a much higher renewable content requirement than that given the dramatic growth that you have seen in this industry over the past couple of years.

As the industry develops, you are going to see new feed stocks, new technologies, and we will expand into cellulose, and I think the potential for ethanol production is—I won't say limitless, but certainly far greater than that. I think that is a very reasonable and conservative estimate on EPA's part.

Mr. GREENWOOD. Okay. I would like to thank each of the panelists for your testimony and for your forbearance with our schedule today. You have been here for most of the day and I appreciate it. The hearing is now adjourned.

[Whereupon, at 4:55 p.m., the subcommittee was adjourned.]

[Additional material submitted for the record follows:]

SUPPLEMENTAL DATA FROM THE GENERAL ACCOUNTING OFFICE REVIEW OF THE
UNDERGROUND STORAGE TANK PROGRAM

In response to a congressional request, GAO reviewed the Environmental Protection Agency's (EPA) program to regulate underground tanks used to store fuel and other substances. The program was designed to help ensure that the tanks remain safe and do not leak their contents, which contain hazardous substances that can contaminate soil and groundwater and pose health risks. One of these substances—methyl tertiary butyl ether (MTBE), a fuel additive and potential carcinogen—is particularly troublesome in that it migrates quickly through soil into the groundwater and even small amounts can render the groundwater undrinkable.

Because the states primarily implement the provisions of the underground storage tank program, GAO conducted a survey of all 50 states and the District of Columbia to determine whether tanks comply with program requirements, how EPA and the states are inspecting and enforcing the requirements, and whether upgraded tanks still leak. GAO issued a report on the results of this work on May 4, 2001 entitled, *Environmental Protection: Improved Inspections and Enforcement Would Better Ensure the Safety of Underground Storage Tanks* (GAO-01-464) as well as testified before the Subcommittee on Oversight and Investigations, Committee on Energy and Commerce on November 1, 2001. During that hearing, Congressman Gene Green (D-TX) asked GAO to provide some additional information for the hearing record. The following table summarizes this additional information, namely survey data for the 13 states that, as of November 14, 2001, have partially or totally banned the use of MTBE in motor fuels sold in their jurisdictions. The table shows the rate at which tanks in each state comply with the equipment, as well as operation and maintenance, requirements of the program, and the frequency at which each state inspects its tanks for compliance.

Table 1
States Enacting Complete or Partial Bans of MTBE

State	Number of Tanks	Reported Level of Compliance With		Reported Frequency of Inspections
		Equipment Requirements	Operation and Maintenance Requirements	
Arizona	8,191	91% to 100%	21% to 70%	4 years or longer
California	50,000	81% to 90%	21% to 70%	1 year
Colorado	7,990	91% to 100%	91% to 100%	1 year
Connecticut	13,831	91% to 100%	21% to 70%	4 years or longer
Illinois	27,317	91% to 100%	71% to 90%	2 to 3 years
Iowa	8,499	91% to 100%	71% to 90%	No regular basis
Kansas	7,830	91% to 100%	71% to 90%	No regular basis
Michigan	23,500	91% to 100%	71% to 90%	2 to 3 years
Minnesota	14,000	91% to 100%	21% to 70%	No regular basis
Nebraska	7,133	61% to 80%	21% to 70%	2 to 3 years
New York	32,928	61% to 80%	21% to 70%	No regular basis
South Dakota	3,089	91% to 100%	91% to 100%	2 to 3 years
Washington	11,450	91% to 100%	21% to 70%	No regular basis

Source: State responses to GAO's survey of tank program managers.