

**Blue Ribbon Panel to Review the Use of Oxygenates in Gasoline**  
**June 24 – 25, 1999**  
**Hilton Crystal City**  
**Arlington, VA**

**Introduction**

The Panel Chairman, Dan Greenbaum (Health Effects Institute), opened the sixth and final meeting of the Blue Ribbon Panel to Review the Use of Oxygenates in Gasoline. Mr. Greenbaum noted that several members of the Panel would be joining the meeting late, and that Mark Meteyer would be sitting in for Carol Henry as the American Petroleum Institute (API) representative. Introductions were given by those in attendance. Mr. Greenbaum then distributed the materials for the meeting, which included the issue summaries, and the draft set of recommendations. Mr. Greenbaum noted that a draft framework of recommendations has been completed; however, the draft does not represent the recommendations of the Panel, but rather represents Mr. Greenbaum's attempt to synthesize the various pieces that have been discussed and to describe areas of agreement and areas where questions still remain.

Before proceeding into a discussion on the draft recommendations, Mr. Greenbaum suggested that the Panel review two issues that were remaining from the previous meeting. The issues include: the exact role of oxygenates effecting the air toxics performance of reformulated gasoline (RFG), the discernable difference in the detection of MTBE in RFG versus non-RFG areas - can we determine what the use of methyl tertiary butyl ether (MTBE) was in those areas in order to better understand the relationship between the use of MTBE, and the likely detection of MTBE.

Mr. Greenbaum stated that the goal is to have a broad based group of people come to some agreement on what to do to resolve the issues relating to water quality, air quality, RFG, and oxygenates. It is intended to have a report with recommendations by the end of July in order to present the report to the parent Clean Air Act Advisory Committee at their July 27 meeting. It was noted that there may be dissenting opinions either on specific parts of the report or the report in its entirety. Mr. Greenbaum reminded the Panel that although the Federal government representatives have provided important information to the Panel, the actual Panel members are the people tasked with coming to agreement. Mr. Greenbaum expressed hope that the Panel members would be close to coming to final agreement by the end of tomorrow, but not produce a completed recommendations section.

Mr. Greenbaum opened the floor for questions or comments.

- Todd Sneller, Nebraska Ethanol Board (NEB), wanted to discuss the issue summary changes and the ability to respond to them. Mr. Greenbaum noted that the next item on the agenda will be to discuss the issue summaries.
- Jason Grumet, NESCAUM, requested a discussion on the scope of what should be accomplished in this final meeting. Specifically noting that there are a number of topics closely related to this issue that have been discussed in the issue summaries, but that are not in the scope of the Panel's charge to address. It should be noted that there are relevant issues that were discussed; however, the Panel did not have the opportunity to adequately address them. An example would include air toxics, and extending certain aspects of the RFG program across the entire pool (i.e. benzene cap). Silence on an issue should not be interpreted as a position of the Panel.
- Ron White, American Lung Association (ALA), stated that there are some items that will be affirmative recommendations, and other items that will be issues of concern. For the latter items, it should be noted that there is no formal recommendation, but the Panel believes further

attention is needed.

Mr. Greenbaum asked for comments on the issue summaries, noting that the issue summaries were an attempt to summarize the issues, and to identify areas with adequate data, and areas lacking data.

### **Comments on Water Contamination**

- Mr. Sneller requested clarifications be made regarding ethanol and its role in groundwater. Specifically, what is known and not known about ethanol in groundwater and its effects on BTEX compounds.
- Debbie Starnes, Lyondell, suggested strengthening the data on MTBE and BTEX detections. Specifically, the time frame for the data was during the period before the underground storage tank (UST) upgrades were completed. Therefore, it should be more clear in the issue summary that the data indicate only past information - prior to the UST upgrades.
- Anne Happel, Lawrence Livermore National Laboratory (LLNL), noted that water occurrence data for sources should be included in order for readers to understand the potential for contamination. This information is known for a number of States.

### **Comments on Air Quality Benefits**

- Mr. Sneller noted that a specific area of concern (especially in California) is the topic of combustion by-products. There has been some confusion regarding the undesirable effects of PAN. Mr. Sneller offered to provide additional clarity, and suggested there be a specific reference for that information. There may be additional data regarding the issue of commingling. Mr. Sneller committed to working with Karen Smith (EPA) to further address this issue.
- Mr. White noted concern about incorporating new data at this point in the process, which has not been verified or shared with the Panel.
- Linda Greer, Natural Resources Defense Council (NRDC), noted that if there is more information in existence, we should look at it, but if it is not completed, we should move forward.
- Mr. Grumet noted that the Panel should acknowledge that there is some debate regarding this issue, and that if data is to be reviewed by the Panel they should be scientific documents.
- Roger Conway, United States Department of Agriculture (USDA), suggested reviewing the peer review comments on the EPA paper on commingling. Mr. Conway also questioned why the Chicago/Milwaukee data discussion regarding high sulfur data is included in the air quality discussion section.
- Mr. White flagged a statement on page 10 relating to fuel quality in conventional gasoline, and anti-dumping provisions.
- Mr. Grumet agreed with Ron White noting that the anti-dumping provision does not provide meaningful protection to ensure that today's gasoline remains as clean if changes to the fuel supply occur. This statement should be changed (page 10).
- Mr. Greenbaum noted that further description about the anti-dumping program would be appropriate.
- Barry McNutt, United States Department of Energy (DOE), noted that the issue of anti-dumping could be easily resolved by comparing 1996 or 1997 conventional gasoline performance to baseline performance data.
- Mr. Conway noted the statement on Page 5, which indicates that oxygenates are not required to maintain air quality benefits. This seems to ignore CO and air toxic benefits.

- Mr. White questioned whether New York is going to use winter oxyfuel as a maintenance strategy. If it is not known, then the statement should be changed.
- On a different note, Mr. Grumet revisited the issue discussed in past meetings regarding whether or not the Panel would make a statement about health effects and MTBE.
- Dr. Greer noted the difference between air and water health concerns, and raised the issue of toxicity versus exposure problem.
- Mr. Greenbaum noted that there are areas within the report (Comparing the Fuel Additives and the Recommendation) that address the health effects issue, but can be expanded. Mr. Greenbaum suggested the Panel members review what has been stated in the recommendations and provide suggestions on the best way to characterize the information related to MTBE and health effects (water resource or health concern).

### **Comments on Fuel Supply and Cost**

- Mr. Sneller expressed concern regarding the ethanol tax incentive in the context of supply and cost on page 8. No off-sets are mentioned in this section, and there are many studies available. This section should include off-sets if the cost is going to be mentioned, because the implication is that there is only a cost (no benefits) of the ethanol tax credit.
- Mr. Grumet would rather see this issue be expanded than removed from the issue summary. The Union of Concerned Scientists completed a study and the section should indicate the use of subsidies in order to make this section more balanced.
- Mr. Conway stated that a GAO study indicates that \$420 billion was spent to protect oil lanes between 1980 and 1990, which should be taken into consideration.
- Mr. Greenbaum noted that the topic of fuel subsidies should be addressed, but not debated in this issue summary. He suggested incorporating a value neutral version in the document reflective of existing information and data. Panel suggestions were encouraged.
- Mr. McNutt stated that the subsidy should not be considered as a cost to the Federal government, and should be considered in context of other off-setting revenue increases, which could be cited.
- Mark Meteyer, API, questioned the number of rail cars that could be built per year, which could in fact double the number given in the issue summary. He requested clarifying whether the number used is on the low end or an average.
- Mr. Sneller noted that barge traffic should be considered as well.
- Mr. McNutt addressed that there is a difference between what can be done in refineries and what is economical to do in refineries. Just because it is possible to implement an option, that does not mean it is a realistic option. Ethanol solutions should not be considered on a consistent-use basis - often used in summer fuel only.
- Mr. Grumet suggested using a key for determining X/gallon of fuel so readers can determine cost.
- Mr. White questioned the statement on page 8 regarding the adequacy of current and future ethanol production to supply the volume of oxygenates required nationally. He expressed concern that the sentence refers to the current situation and does not discuss the future ability of ethanol production. It was suggested that a reference of time be included, and it be made clear that this refers to current replacement options.

### **Comments on Comparing the Fuel Additives**

- Dr. Greer noted that on page 6, more discussion is needed regarding other alternatives and air quality in fuel blending. Also, she noted that when the paper discusses trying to meet air quality performance without oxygenates, it is important to note whether it is referring to premium or

- regular gasoline.
- Mr. Greenbaum responded that he had noted the lack of discussion on alkylates and aromatics, and noted that there needs to be further discussion on aromatics. Also, he noted that there is limited experience making RFG without oxygenates.
  - Mr. McNutt clarified that gasoline is blended as a pool, and that there are many trade offs.
  - Bob Campbell, Sunoco, noted that premium and regular gasoline should only be discussed if and when the oxygenate mandate is changed, and the amount of MTBE is changed. The lowering of octane is a result of the entire gasoline pool changing.
  - Mr. Greenbaum noted that the discussion on fuel type should be included in the fuel supply section.
  - Dr. Happel encouraged including additional information about aromatics (at least benzene, if not all BTEX compounds, to give a perspective).
  - Mr. White provided insight on a comment on page 2 regarding EPA not having data on MTBE sensitive populations. He noted that a study will be released in a few weeks with that information.
  - Mr. Greenbaum asked for clarification regarding the chart depicting the biodegradation of ethers.
  - Dr. Happel noted that additional work needs to be conducted between the way ethers behave in water and air. Further, comparing the alkyl ethers with benzene gives perspective.
  - John Zogorski, USGS, stated that the alkyl ethers as a group degrade slower than BTEX compounds.
  - Dr. Greer noted that biological half-life or a range is not included in the chart.
  - Mr. Sneller suggested noting the technical distinction between MTBE, BTEX, ethanol, etc.
  - Mr. Conway suggested noting on page 4 that the study was funded by the American Methanol Institute.
  - Mr. Greenbaum responded to Mr. Conway's comment that it would be best to state the full name of the study, and not who the work was funded by.
  - Mr. Campbell suggested that performance requirements are the best way to meet standards, allowing industry and economics to create the formula to meet those standards. The Panel was not charged to determine what would replace MTBE.
  - Mr. Grumet agreed with Mr. Campbell regarding fuel performance; however, in practice the performance specifications should be more stringent.
  - Mr. Greenbaum gathered from the discussions that there is not one option that makes more sense than the others, and the Panel needs to try to understand the implications given a certain scenario.
  - Mr. McNutt suggested talking about the performance of the compounds rather than recipes of the fuel.
  - Dr. Happel suggested inserting a discussion regarding how solubility, biodegradation, and source volume effect the persistence and travel time of a pollutant in the subsurface.

### **Air Toxics and Oxygenate Data**

The next discussion was based on additional data analyses conducted by EPA on the relationship of oxygenate levels in fuels and air toxic performance of those fuels. Stu Romanow and Dave Kortum, EPA, presented information that has been summarized in the air toxics issue summary. (The presentation is available on the Blue Ribbon Panel web site). A large source of data was produced from the RFG Fuel Quality Surveys, which are conducted under a regulatory requirement as a result of the averaging provisions producers of RFG have to provide the information to EPA. There are data on a large number of RFG formulations that are found at the retail level. Because of the flexibility/variability in the amount of oxygen that is used, these data provide insight into the decision making process of the

RFG producers. This analysis was restricted to samples containing MTBE and MTBE and other ethers (not ethanol). There were many questions by the Panel members requesting clarification on this presentation.

- Mr. Greenbaum questioned if there is the possibility that if oxygen were removed, a reduction in air toxic benefits would be seen.
- Dr. Happel asked if the correlation coefficient is a measure of uncertainty.
- Dr. Greer requested clarification on certain aspects of the presentation.
- Mr. Greenbaum clarified that the scatter plot attempts to answer the question that on average there is a relationship with toxics performance as more oxygen is added.
- Dr. Happel noted that the correlation coefficients are weak because there is a lot of scatter in the data. The trend is fairly flat, and the range would be small.
- Mr. Greenbaum clarified that over the range of 1 percent oxygen weight you would see a 4 ½ percent increase for the summer in toxics performance.
- Mr. McNutt noted that the slope is on gasoline, which is toxic controlled.
- Mr. Greenbaum noted that there is a very limited data set available to do analysis on the relationship between oxygenates and air toxics. He asked EPA if they could make a set of non-oxygenated fuels and run these analyses. The alternative is to look back and see if there is a relationship between air toxics and oxygen. He stated that since we can imagine fuels in the future without oxygen, it is important to ask if there is any benefit of oxygen in gasoline.
- Mr. Greenbaum stated that this analysis was done in order to understand whether there is a possibility or probability that if oxygen was removed from fuel, a reduction in air toxic benefits would be seen.
- Dr. Happel noted that we are looking at MTBE containing fuels in an RFG world with a mandate and, therefore, is not predictive if the mandate is removed.
- Mr. McNutt stated that the analysis created by EPA is what the National Academy of Sciences (NAS) study missed; the real relationship between economic blended fuels and the level of oxygenate. The analysis studies the role of MTBE explaining why toxics go down when higher levels of MTBE are blended into fuels. Also, this analysis is consistent with the August 1998 NESCAUM report.
- Mr. Grumet stated that EPA's analysis shows the intricacy and complexity of the fuel supply system without oxygen, which was lacking in the NAS study.

### **Presentation on MTBE Use in RFG vs. Non-RFG Areas**

Dr. Zogorski presented information on the best available data on the distinction in detection levels between RFG use areas and non-RFG use areas, and whether that information can be tied back to amounts of MTBE being used in those areas. He noted that USGS has obtained a second data set on gasoline composition, which should be computerized within the next few weeks. Then the two data sets can be compared.

The handouts are summary information on the Nyper gasoline data sets for approximately 110 cities with MTBE data. The survey is intended to characterize the composition of gasoline sold in larger cities in the United States. This analysis is an attempt to "tease out" the difference between the non-RFG versus the RFG/OXY.

Table 1 represents a summary of MTBE and ethanol content in gasoline in RFG/OXY areas within the United States. Dr. Zogorski's observations include a significant percentage of analysis completed where MTBE was either not detected or detected at a less than one percent by volume ranging from 45 percent

for regular gasoline up to 30 percent for premium gasoline. The second observation is that for gasoline with a composition greater than four percent by volume ranging from 43 percent for regular gasoline to 55 percent for premium. These data provide some insight into historical use of the six year period (1993-1998).

Table 2 summarizes non-RFG/OXY areas in the United States. About 74 percent of the samples fall into the category of less than one percent MTBE, which decreases to 50 percent for premium gasoline. The second observation is in terms of the gasoline with more than 4 percent by volume ranging from 5 percent for regular gasoline increasing to about 18 percent of the samples for premium gasoline.

Tables 3-5 are less summarized, but give you an idea of MTBE trends in regular, intermediate and premium gasolines. The tables were provided in order to give some background on the information available regarding how extensively MTBE has been used outside the RFG/OXY areas.

Comments:

- Mr. Campbell questioned whether these data would be used to correlate water contamination. Dr. Zogorski noted that this information would be used to determine MTBE use in gasoline within certain cities to create a good record to be compared with water quality data that have been reported previously in an aggregate basis.
- Dr. Happel questioned if LUFT sites would be looked at to determine frequency of MTBE detection in non-RFG area LUFT sites, and to determine if the maximum concentration is different from RFG areas. Dr. Zogorski said that is not the intent, but could be done with cooperation from EPA's Sammy Ng, Office of Underground Storage Tanks.
- Mr. Greenbaum noted that this information does not have information on the volume of gasoline. The question originated from a previous presentation by Dr. Zogorski where he stated that there was a 4-6 times higher chance of detection in RFG/OXY areas versus non-RFG areas. The question was raised, "If there was some amount of MTBE in the general supply for 15 years (not upgraded tanks) would you have expected this same response, or something less?" Two additional questions included: would a different level of concentrations in those releases be obtained, and is there a reason to expect lower levels of transport to drinking water?
- Mr. Campbell stated that if you deal with MTBE in RFG, then you will need to deal with MTBE in non-RFG.
- Dr. Happel noted that Chevron has collected data from sites that have had gasoline releases and should be asked if there are frequency and detections of MTBE in those areas. Also, fate and transport calculations can be investigated.
- Dr. Zogorski noted that this effort can be expanded in the next few years.
- Mr. Greenbaum stated that part of the recommendation is to gain better understanding and note future data needs.
- Mr. McNutt noted that this information is very important if the Panel is to determine the difference in using MTBE at the current level or deciding to use zero MTBE.

### **Discussion on the Draft Recommendations (dated June 22)**

Mr. Greenbaum asked for the Panel's reactions on the draft recommendations, and clarified that the order of the recommendations may change. Mr. Greenbaum suggested attempting to come to agreement by addressing a group of recommendations, discussing them, and then asking members of the Panel if anyone has continuing disagreements with that particular set of recommendations. Further, Mr. Greenbaum discussed the level of detail that would be provided in the recommendations, specifically

noting that he would like to lean toward broad directional recommendations that are very clear about where the Panel believes things should move and who is responsible for implementation. Mr. Greenbaum requested that editorial comments be submitted off-line.

### Comments on the Introduction

The Panel discussed the following phraseology regarding the introduction of the recommendations; comments included:

- Clarification was requested regarding the following sentences: "The precise role of oxygenates in attaining air quality benefits is uncertain..." and "...there is evidence from the existing program that increased use of oxygenates results on average, in greater air toxics and carbon monoxide benefits."
- It was suggested inserting a note in the introduction that the vast majority of tanks are unregulated.
- It was noted that air deposition is not a major source of MTBE contamination.
- It was questioned whether the detections of MTBE in drinking water is overstated in the sentence "between 10 and 15 percent..."
- Add the word design to the sentence related to upgraded systems.
- It should be clarified that not all upgraded systems are still leaking.
- It should be noted that there are data gaps in available information.
- It was debated how best to characterize health effects, and whether to address this issue in the introduction to the recommendations. A group was formed to draft a paragraph to address the findings of health effects.
- It was questioned whether the words "rapid implementation" were appropriate.
- Further discussion was requested regarding the Panel's presentation of a "single package of actions..."

### Comments on Enhancing Water Protection

The Panel then discussed the leaking underground storage tank (LUST) program, and submitted relevant comments, as follows.

- It was suggested that the statement, "Accelerate enforcement for the replacement of existing tank systems..." be specified by including the term "nationwide."
- It was suggested that the expansion of inventory monitoring systems should be included in this section for unregulated tanks.
- It was suggested that the LUST system be evaluated and improved, and move quickly to ensure the implementation of the improvements.
- It was suggested that the regulated and unregulated universe of above ground storage (AST) tanks be clarified, and areas to expand should be identified. Carol Henry and Sammy Ng will work on appropriate language.
- It was suggested that EPA consider encouraging States to adopt licensing requirements for LUST sites, and, requiring that the proximity and the potential to impact a public drinking well be considered in land use planning and permitting decisions for siting new UST facilities and petroleum pipelines.
- It was suggested to add the terms "clean up" as well as "detected" when referring to leak detection requirements. It was noted that according to the regulations, once a leak is detected, it must be cleaned up, or acted upon.

- It was suggested that current language should be expanded to say that along with BTEX compounds, oxygenates should also be monitored; however, ethanol will not be included due to the different testing methods required.
- It was requested that Section 1453 of the 1996 Drinking Water Act Amendments be clarified. It seems to be a good opportunity to link the LUST program with the drinking water program. Further, it would help to enhance State guidance regarding how best to accelerate action in high priority areas (high oxygenate use areas), and help to obtain necessary information in order to get accurate locations of wells.
- It was suggested that a tiered or prioritized system be suggested by the Panel for areas with high RFG use.
- Concern was raised that the language only refers to MTBE and not all water soluble gasoline components, or all oxygenates.
- It was recommended that EPA, as well as State and local governments add MTBE to their routine list of chemical monitoring.
- It was noted that there needs to be a separate sentence on monitoring private well systems.
- It was suggested to include the appropriate jurisdiction for regulating watercraft on reservoirs.
- It was suggested that public/private partnerships be formed to fund the testing of private wells.
- It was suggested that both research of LUFT sites and drinking water wells should be dealt with together.

#### Comments on Water Treatment and Remediation

- There were Panel discussions on whether the Panel should recommend the expansion of State funding for the treatment of contaminated water supplies.
- It was noted that there are restrictions on how you can use trust fund money to clean up contaminated site.
- It was suggested that the Panel recommend funding mechanisms for clean up and remediation.
- It was noted that there should be some enhancement of "triage" procedures for prioritizing remediation efforts at LUST sites based on proximity to water supplies.
- It was suggested that there should be some mention of the fact that tanks will leak to some degree, which may elevate the national priority of remediation.

#### General Discussion

Before proceeding further, Mr. Greenbaum asked the Panel to review the set of water protection actions that have been recommended. He asked the Panel to consider whether these steps would be enough to assure that the kinds of ground water and drinking water questions about oxygenates could be answered to ensure public health and water supplies are protected, given that previous suggestions were implemented. In response to Mr. Greenbaum's question, the Panel members individually replied. The majority answered that although the steps mentioned are necessary, they are not adequate to ensure public health and protection of water supplies. The general consensus was that the oxygenate mandate needs to be adequately addressed.

#### Comments on Blending Fuel for Clean Air and Water

- It was suggested that the following two bullets be removed from the recommendation, "reduce the current high dependence on one oxygenate - MTBE; and increase the use of both ethanol and alkylates or aromatics."
- It was noted that it would be sufficient if the recommendations reflected the goal to maintain air



quality and improve water protection, without providing details of how to make that happen (i.e. reducing dependence on one oxygenate and increasing the use of other compounds).

- It was noted that the issue regarding whether to continue use of MTBE, and if so at what level, needs to be addressed.
- Concern was expressed that the recommendations convey that, in order to meet air quality standards, oxygen must be present. There was debate regarding whether or not oxygenates are necessary to meet air quality standards, and whether California intends to produce gasoline using absolutely no oxygenates.
- It was suggested to separate out California by using the term "national" supply to denote that it can not be done nationally. California is in a different situation from the rest of the country. It was suggested to somehow acknowledge that California is different.
- It was stated that oxygen will be used regardless of the mandate because it is needed for octane.

#### Comments on the Oxygen Mandate, Maintaining Air Benefits, and Reducing the Use of MTBE

Mr. Greenbaum asked the Panel to address the best way for these three issues (oxygen mandate, maintaining air benefits, and reducing the use of MTBE) to fit together.

Prior to receiving comments from the Panel, Carol Henry, API, requested additional information on EPA's proposed air toxics rule. It was clarified that the Panel's recommendation will be taken into consideration when EPA evaluates the benefits of the factored into the RFG program.

- Mr. Grumet stated that according to NESCAUM, there are three steps to include: (1) the mandate must be lifted or waived, (2) States must be given unambiguous authority to regulate MTBE, and (3) the air quality benefits of the RFG program must be maintained.
- Mr. Campbell suggested that the amount of MTBE used should be reduced; however, he noted that with substantial MTBE reductions the oxygenate mandate cannot be maintained. Therefore, waive or eliminate the oxygenate mandate. Backsliding of the current air quality standards must be addressed. The refiners must have some flexibility in order to meet the requirements.
- Ms. Starnes accepts removing the oxygenate mandate, however, she stated that focus should be placed on no backsliding. The biggest concern is regarding the reduction of MTBE because of the lack of detection data since the underground storage tank upgrades have been completed. It is not acceptable that gasoline cannot be reasonably contained.
- Mr. Sneller stated that due to the many reasons (energy security, farming, etc.) for implementing the oxygenate mandate, he would not be willing to eliminate the oxygenate requirement. He stated that reduced use of MTBE is a marketplace function, and that oxygenates provide important air quality and health benefits.
- Mark Beuhler, Southern California Metropolitan Water District, suggested that the first item in this section of the report should be "maintaining the air benefits," because public health is the most important. He stated that the oxygenate mandate should be waived; and, would argue for the elimination (not reduction) of MTBE.
- Dr. Happel stated that her conclusions were based on scientific evidence. The oxygen mandate is not necessary for water or air quality. She stated that air benefits should be maintained, however, measuring those benefits is contentious, and, because there is a water quality problem, a decision is necessary to either drastically improve our practices or phase-out MTBE. The phase-down options are of limited value because of the high concentrations that will result in groundwater from two percent MTBE use in gasoline.

- Mr. White stated that maintaining air quality benefits should be prioritized first in order focusing on the public health concern. MTBE should be reduced and he supports a phase-down of MTBE. The oxygenate mandate should be waived or removed.
- Mr. Kenny stated that in hind-sight, the oxygenate mandate should be removed. MTBE should be phased-out, and, the air quality benefits should be maintained due to performance standards.
- Bob Perciasepe (EPA) stated that reduced use of MTBE is necessary. He believes there are proven air quality benefits from using oxygenates simply by diluting aromatics and reducing air toxics and emissions. State flexibility will be constrained due to the relationship between the automobile performance and the fuel.
- Dr. Greer suggested reducing MTBE beyond 50 percent; eliminating the mandate; and, adding (as part of the Panel's strategy) the necessity of high octane gasoline.
- Dr. Henry stated that water contamination has caused a problem and, therefore, MTBE should be reduced. There is concern with the degree of the air quality benefits that need to be maintained.
- Robert Sawyer, University of California, Berkeley, stated that air quality benefits should be maintained; the oxygenate mandate should be eliminated; and, because MTBE is a water contamination problem it should be removed from gasoline.
- Patricia Ellis, Delaware Department of Natural Resources, stated that the air quality benefits should be maintained, and oxygenates may not be the only way to achieve the benefits; the mandate is not necessary; and, MTBE should be phased-down.

In general, Mr. Greenbaum heard support for flexibility in the mandate (except for one); oxygenates are not necessarily required to maintain air quality benefits, but the Panel wants to maintain air quality. As noted above, there were Panel members who did not agree with these statements. Mr. Greenbaum brought up the issue of flexibility and asked Panel members for their thoughts on mechanisms for reducing or eliminating the use of MTBE. Mr. Greenbaum noted the issue of the legalities of reducing MTBE.

Mr. Sneller suggested the possibility of implementing a credits trading program in order to meet both the air quality and oxygenate requirement. Margo Oge, EPA, noted that there may be some administrative flexibility to utilize an existing credits trading program.

Mr. Grumet stated that removing the oxygenate mandate is necessary. However, as opposed to completely removing the mandate, there is a possible mechanism that would allow EPA to grant States flexibility. If a period of time is given for States to make demonstrations, and EPA is granted time to rule on the demonstrations, there could be some kind of minimum phase-down requirement that would ensure a reasonable degree of consistency in terms of State activity. States who can demonstrate necessity, could be waived from the requirement in their area. Section (211(c)(4)) in the Clean Air Act allows for States to affect the fuel supply in order to have as much national consistency as possible. In order for a State to regulate gasoline quality, two demonstrations are necessary to show that oxygenate requirement is necessary for attainment (this section of the Act would need to be extended beyond air quality attainment). The two demonstrations would show that a problem exists, and prove that no other alternatives (aside from a fuel change) exist to fix the problem.

The following comments were given by Panel members regarding Mr. Grumet's suggested mechanism:

- Mr. Campbell gave his historical perspective describing why the oxygenate mandate favors MTBE over ethanol. Ethanol's strength is octane, and its weakness is RVP. If you maintain the

mandate and force ethanol problems will exist because the mandate and ethanol are not compatible.

- Dr. Ellis questioned if Mr. Grumet's mechanism would cause a "boutique" fuel situation. Mr. Grumet responded that with EPA authority and necessary constrained flexibility, a consistent requirement would be possible.
- Dr. Henry asked if it would be possible to consider fuel supply and distribution in this mechanism. Mr. Grumet responded that EPA has factored cost into section 211(c)(4) of the Clean Air Act.
- Mr. White stated that the concept of flexibility should be considered; however there needs to be a well defined and limited set of options with well defined criteria including a specific time frame.
- Mr. Greenbaum questioned if this would give authority to States to regulate MTBE to zero. Mr. Grumet's reply was yes.
- Mr. Kenny stated that this mechanism could only be accomplished legislatively.
- Mr. Greenbaum stated that EPA's ability to force a reduction of MTBE is limited.

Mr. Greenbaum mentioned another option that has emerged, which is the RFG requirement at a 2 percent mandate and a 1.5 percent minimum. Some discussion exists regarding whether removal of the 1.5 percent minimum can be done without legislative action. Bob Perciasepe expanded on this issue and noted that, within certain parameters, EPA has some flexibility through Federal law to use less MTBE. However, there needs to be some guarantee of the fuel quality. This does not eliminate the mandate nor does it allow the decreased use of MTBE. This would be done through a rulemaking, which could occur within 6 months to one year. Lifting the mandate is preferable, but the administrative approach is a good secondary option. Both of these ideas can be acted on simultaneously. There were many reasons for the original implementation of the 2 percent oxygen mandate, and those issues would need to be revisited.

Bob Perciasepe requested some facts on the Federal LUST Trust Fund, which has a balance of \$1.2 billion. Congress appropriated for the 1999 fiscal year approximately 72.5 million for the Fund. The Fund grows each year, due to receipts from tax and interest, at about \$200 million per year. The extra money does not get appropriated. In response to a question, it was noted that the law does specify what the money can be used for. It can be used for staffing, or site clean up (if owner is unknown or unable to clean up release). However, there must be a leak before the Trust fund can be used.

Mr. Beuhler described a funding mechanism to reduce the use of MTBE. The existing mechanisms do not deal with immediate treatment of MTBE contamination. The creation of a fund would be used to finance impacts of MTBE on drinking water suppliers in order to bypass the normal mechanisms and to get money into the hands of the water suppliers to finance treatment, provisions for alternative supply, and monitoring. Also, a set aside on MTBE manufactured as a gasoline additive would use market forces to hasten the phase-out of MTBE. There are several components to the set-aside mentioned in Mr. Beuhler's handout. Other comments included that the funding be on a national basis, not used for anything other than MTBE, and it could be changed in the future given a clear phase-out of MTBE. There were some assumptions made which include:

1. Six-year MTBE phase-out;
2. Current MTBE production of 270,000 barrels per day or 4.2 billion gallons per year.
3. Declining MTBE production is assumed as economic pressures encourage a phase-out (guesstimate).
4. MTBE cost of about \$0.70 per gallon.
5. Scale-up from 20 percent to 50 percent surcharge for MTBE use in gasoline.

### Panel Comments:

- Mr. White questioned if other ethers would apply, and whether it is reasonable to assume a flat MTBE market price. It would make sense to lump the ethers together. It would also be helpful to have an economist answer the market price questions.
- Mr. McNutt noted that if there were to be a reduction in the use of MTBE, the price would decline to variable production cost prices (possibly half of the 70 cents). The other issue is that one-third of the MTBE is made in refineries so it is not always purchased.
- Mr. Grumet mentioned that the Panel should be careful to categorize all ethers to be similar. Although the idea is helpful; however, he expressed concern about trying to design a fee for the purpose of squeezing the product out of the marketplace.
- Mr. Kenny expressed concern about gas price increases in California.
- Ms. Starnes stated that there needs to be a mechanism to fund clean up; however this mechanism seems to phase-out the product through an artificial market mechanism, and the cost of clean up includes all the other gasoline components in addition to MTBE.
- Mr. Grumet noted that, in the eight Northeastern states, the differential costs of MTBE remediation is about 25 percent of the total cost.
- Dr. Ellis suggested including a cost recovery mechanism.
- Dr. Henry supported public and private water supply clean up. It may be helpful to state that the Panel would endorse solving the problem to help public and private water facilities respond to contamination in a rapid fashion, and that the Panel is uncertain about what existing funding mechanisms could be utilized.
- Bob Perciasepe noted that there are not funds to deal with treatment for each compound. Currently there is a responsible party, and a mechanism to step in if there is no responsible party.
- Ms. Dougherty stated that some communities can not afford treatment. Consumers of the drinking water will have to pay more for their water.
- Mr. Grumet suggested a recommendation that the Panel agrees to explore polluter pay concepts.
- Ms. Starnes noted that if all costs are externalized, then there should be a value put on benefits too.

### Maintaining Air Quality Benefits

Mr. Greenbaum specifically noted two distinctions: maintain benefits of the RFG program (not benefits of oxygenates), and maintenance in the context of other toxics. He asked for clarification on the principle that the Panel is discussion and what are the details to meeting those principles.

- Mr. Grumet suggested possible language to be considered including, "The present performance of RFG appears to be based on a combination of three factors: performance standard, oxygenate mandate, and the compliance margin." Further, "Lifting the oxygenate mandate creates the potential to maximize economic benefits, gasoline may change in a manner that will result in backsliding, and therefore the Panel commits to maintain air quality benefits..."
- Mr. White suggested expanding the concept of maintaining air quality to include improvements in conventional gasoline, and state what it means to maintain air quality so that while trying to solve one problem, another is not created.
- Mr. Grumet noted that Panel should urge the administration to ensure that backsliding in air quality is prevented.

Mr. Greenbaum requested that any language suggestions or comments be submitted. A revised draft of the recommendations was distributed for discussion. Suggested language was included as an attachment, which would involve giving States the authority to regulate or eliminate the use of MTBE. The Panel

will be asked to provide comments on the oxygen mandate, maintaining air benefits, and reducing the use of MTBE. There were discussions among the Panel regarding phraseology and word smithing of the revised version of the draft recommendations.

Mr. Greenbaum addressed the next steps required of the Panel, which include providing comments and edits by the beginning of next week. Mr. Greenbaum will incorporate the comments and send out a new revision of the draft recommendations for final review by the Panel. If further discussion is needed at that point, they will be conducted via conference call or another meeting will be scheduled. The goal is to have the Panel sign-off on the recommendations within the next 10 days. Issues that remain include: addressing "other" ethers in the context of MTBE, and addressing the winter oxyfuel program.

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