

BEFORE THE METRO COUNCIL

FOR THE PURPOSE OF MAKING) RESOLUTION NO. 04-3475
RECOMMENDATIONS TO THE)
ENVIRONMENTAL QUALITY COMMISSION) Introduced by Councilor Monroe
OF THE STATE OF OREGON CONCERNING)
OXYGENATED FUELS AND METHYL)
TERTIARY BUTYL ETHER)

WHEREAS, in 1996, the Oregon Environmental Quality Commission completed a Portland Area Carbon Monoxide Maintenance Plan (Plan) and in 1997 the United States Environmental Protection Agency (EPA) approved the Plan; and,

WHEREAS, the Plan included a requirement for oxygenated gasoline in the winter to reduce Carbon Monoxide emissions from transportation sources in the region and to avoid exceeding Federal and state Carbon Monoxide standards; and,

WHEREAS, methyl tertiary butyl ether (MTBE) has been used in some portions of the United States to oxygenate fuels; and,

WHEREAS, MTBE readily dissolves in water, can give water an unpleasant taste and odor, can move rapidly through soils and aquifers, is resistant to microbial decomposition, is difficult to remove in water treatment and the EPA has classified MTBE as a potential human carcinogen; and,

WHEREAS, potential and documented contamination of water resources by MTBE has become a cause for major public concern that drinking water supplies and human health may be at risk to the extent that the states of California and Washington have banned the use of MTBE as a fuel additive; and,

WHEREAS, the Department of Environmental Quality is producing a draft Second Portland Area Carbon Monoxide Maintenance Plan which may or may not require the continued use of oxygenated fuels; now therefore;

BE IT RESOLVED,

1. The Metro Council recommends to the Environmental Quality Commission of the State of Oregon that should oxygenated fuels be included in the Second Portland Area Carbon Monoxide Maintenance Plan, methyl tertiary butyl ether (MTBE) should not be allowed as a oxygenate or fuel additive.

2. The Metro Council directs its Chief Operating Officer to coordinate with the Environmental Quality Commission and Department of Environmental Quality to encourage the Oregon State Legislature to prohibit the use of MTBE in the state of Oregon as a fuel additive to oxygenate fuel.

ADOPTED by the Metro Council this ____ day of July 2004.

WITHDRAWN

David Bragdon, Council President

Approved as to Form:

Daniel B. Cooper, Metro Attorney

STAFF REPORT

IN CONSIDERATION OF RESOLUTION NO. 04-3475, FOR THE PURPOSE OF MAKING RECOMMENDATIONS TO THE ENVIRONMENTAL QUALITY COMMISSION OF THE STATE OF OREGON CONCERNING OXYGENATED FUELS AND METHYL TERTIARY BUTYL ETHER

Date: June 28, 2004

Prepared by: Mark Turpel

BACKGROUND

Consistent with Federal Clean Air Act, and an agreement with the US Environmental Protection Agency (EPA), the Environmental Quality Commission of the State of Oregon (EQC) has directed that a draft Second Portland Area Carbon Monoxide Maintenance Plan (CO Plan) be prepared. This CO Plan will be completed in draft form and provided to the public for review in Fall 2004 with an anticipated final decision by the EQC late 2004 or early 2005. The EQC's CO Plan will then be submitted to the US Environmental Protection Agency for approval.

The previous CO Plan completed in 1996, and approved by the EPA in 1997, included a requirement that oxygenated fuels be provided for transportation vehicles in the metropolitan area in the winter when CO problems are more pronounced. Oxygenated fuels reduce Carbon Monoxide emissions compared to fuels without such compounds. Several compounds may be used to oxygenate fuel, including ethanol, produced from agricultural products and methyl tertiary butyl ether (MTBE), derived from petroleum. In the past, ethanol has been the primary additive used to oxygenate fuels in the Metro area. However, improvements to motor vehicle engines has resulted in substantial reductions to carbon monoxide emissions from transportation sources, such that current carbon monoxide emissions are well below maximum permitted rates and these decreases are greater than those attributable to oxygenated fuels. In addition, Carbon Monoxide emissions are forecast to decrease even more in the future to the year 2025 without considering the effects of oxygenated fuel.

In June 2004 when the Joint Policy Advisory Committee (JPACT) discussed recommendations for the Environmental Quality Commission concerning the new CO Plan, members were asked whether they wished to make recommendations about oxygenated fuel. Though JPACT declined to make a recommendation at that time, it did ask that the matter be brought back at a later date for further discussion. In addition, the Metro Council, in considering the new CO Plan and the question of oxygenated fuels, discussed concerns with the use of MTBE as an additive to oxygenate fuel.

The proposed resolution does not take a position with regard to an EQC requirement for oxygenated fuels. However, it does recommend that should the EQC approve such a requirement for the Metro area, that it work to ensure that MTBE not be the additive used to oxygenate fuel. This approach is proposed in order to protect the health and safety of the residents of the region as well as avoiding the higher than normal expenses of water cleanup characteristic of MTBE should MTBE be inadvertently released into water supplies, particularly those which rely upon groundwater as drinking water sources in the region.

Attached is a fact sheet prepared by the Department of Environmental Quality about oxygenated fuels in the Portland area. Important considerations include the facts that the banning of MTBE in California and Washington could lead to MTBE producers looking for other markets, though most of the gasoline transported to Oregon is via a petroleum pipeline from Washington State from which MTBE is banned. The oxygenate alternative, ethanol, was compared with MTBE in a State of California study. It found that "...the direct effects of ethanol (if any public exposure were to occur) would be substantially less severe than the effects of MTBE."

ANALYSIS/INFORMATION

- 1. Known Opposition** The States of California and Washington have banned the use of MTBE. However, the EPA has not definitively determined the safety of MTBE, and there are trade associations (such as the Oxygenated Fuels Association) that assert that the overall benefits of MTBE outweigh the risks. Accordingly, there could be opposition from trade associations to this resolution that makes recommendations about banning MTBE use.
- 2. Legal Antecedents** Federal law includes the Clean Air Act (42 U.S.C. 7401) as well as transportation legislation (23 U.S.C 109j) concerning transportation plans, programs and projects developed, funded or approved by the US Department of Transportation. State legislation includes OAR Chapter 340, Division 252. Metro legal antecedents include *Resolution No. 96-2260, For the Purpose of Recommending to the Environmental Quality Commission the Transportation Control Measures (TCM's), contingencies, and emission budgets to be included in the Portland Region's Ozone and Carbon Monoxide (CO) Maintenance Plans*, numerous resolutions concerning transportation conformity of the region's transportation plan and metropolitan transportation improvement program and *Resolution No.03-3457, For the Purpose of Making Recommending to the Environmental Quality Commission of the State of Oregon Concerning the Second Portland Area Carbon Monoxide Maintenance Plan*.
- 3. Anticipated Effects** Adoption of this resolution will support the progress of the CO Plan, including support for avoiding the use of MTBE, already banned in the states of California and Washington.
- 4. Budget Impacts** No direct budget impacts to Metro.

RECOMMENDED ACTION

It is recommended that Resolution 04-3475 be approved.



State of Oregon
Department of
Environmental
Quality

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Oxygenated Fuel in Portland

DEQ seeks input on continuing

oxygenated fuel in the Portland area

DEQ is consulting with interested groups to determine if oxygenated fuel should remain in the carbon monoxide (CO) air quality plan for the Portland area. DEQ has determined that oxygenated fuel (oxyfuel) is not needed to meet federal air standards for CO. Oxyfuel provides reductions of carbon monoxide, air toxics and greenhouse gases.

Background

From the 1970s to the early 1990s, the Portland area failed to meet the National Ambient Air Quality Standard for CO. After the 1990 Clean Air Act Amendments, Portland and other carbon monoxide "non-attainment" areas were required to use oxygenated fuels during the coldest months of the year. DEQ implemented these rules in 1992 to reduce carbon monoxide emissions by providing extra oxygen molecules in the area's fuel, allowing vehicles to achieve more complete combustion. The two most common fuel additives that meet the oxygenate requirements are ethanol and methyl tertiary butyl ether (MTBE). Currently, ethanol is the only additive used in Oregon; however, in the past, MTBE was used sporadically across the state.

Current conditions

Carbon monoxide concentrations in the Portland area are now approximately half the level that air quality standards allow and are expected to remain low into the foreseeable future. Cars will continue to be built with more effective catalytic converters and computerized engine controls that optimize combustion without extra oxygen.

Benefits of oxygenated fuel

Oxyfuel continues to lower total CO emissions by about 5%, and also reduces the relative toxicity of motor vehicle emissions by a similar amount. Ethanol in fuel also decreases greenhouse gas emissions, although estimates of that benefit vary widely. In addition, ethanol is a renewable energy source and contributes to the nation's energy independence. Ethanol is produced from corn and other grains, so its use as fuel strengthens agricultural markets.

Disadvantages of oxygenated fuel

U.S. Environmental Protection Agency data show oxygenated fuel lowers vehicle fuel mileage about 2%; however, many drivers claim the decrease in mileage is greater.

Representatives of the petroleum industry indicate the oxygenated fuel requirement increases the consumer cost up to 3¢ per gallon. However, fuel suppliers earn a 52¢ per gallon subsidy (in the form of a federal tax credit) for each gallon of ethanol blended into gasoline. With this subsidy, the ethanol industry claims that oxygenated fuel is about 1.5¢ per gallon cheaper than conventional gasoline. Some fuel suppliers in the Portland area provide oxyfuel throughout the year.

Industry fees support administration of the oxygenated fuel program. Annual permit fees are \$2500 for each of 13 fuel terminals and \$250 for each of 24 fuel distributors.

There is concern that retaining the oxyfuel requirement may increase use of MTBE as a gasoline oxygenate in Oregon, as MTBE has been banned in California and Washington. Ingestion of MTBE-contaminated drinking water or inhalation of combustion by-products of MTBE increases the risk of contracting cancer. However, the oil refineries that produce Portland's fuel no longer make MTBE and the compound is banned from the pipeline that delivers the vast majority of fuel to the area.

Oxyfuel in the future

Given the significant drop in CO concentrations in the Portland area, DEQ has determined that oxyfuel is not needed to meet the CO standards. DEQ is preparing a new plan to show how the Portland area will continue to meet the CO standard through 2017. DEQ is consulting with government agencies and affected stakeholders on the merits of removing oxyfuel requirements. The new Portland Area CO Maintenance Plan will be available for review and public comment from Aug. 16 through Sept. 20, 2004. DEQ will report comments received to the Oregon Environmental Quality Commission along with a recommendation on whether to keep oxyfuel in the CO plan. The Commission is expected to meet in early December 2004 to consider adoption of the plan.

For more information

Contact Dave Nordberg, Air Quality Planning, Portland, (503) 229-5519 (toll-free in Oregon at 1-800-452-4011, ext. 5519).

Alternative formats
Alternative formats of this document (Braille, large type, etc.) can be made available. Contact DEQ's Office of Communications & Outreach, Portland, for more information at (503) 229-5696 (toll-free at 1-800-452-4011, ext. 5696)

Last Updated: 6/22/04
By: D. Nordberg
DEQ 04-AQ-002



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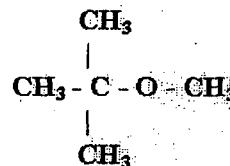
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MTBE Fact Sheet

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What is MTBE?

MTBE is shorthand for methyl tertiary-butyl ether. It was first used in the late 1970's in concentrations as high as 2 to 7 percent (volume/volume) as a replacement for lead to boost octane. More recently, MTBE has been used at concentrations of 11 to 15 percent in "oxygenated" and "reformulated" gasoline. The 1990 Clean Air Act Amendments require areas that violated the national ambient air quality standards for carbon monoxide (typically a winter problem) or ozone (typically a summer problem) to use oxygenated or reformulated gasoline, respectively, during the problem months.

Is MTBE Gasoline Used in Oregon?

The Oregon Department of Environmental Quality (DEQ) does not require that MTBE be used in Oregon. Reformulated gasoline is not needed to maintain compliance with ozone standards in Oregon. Although some areas of the State rely on oxygenated fuels to maintain compliance with carbon monoxide standards during the winter months, ethanol rather than MTBE has been used to meet the requirements of the 1990 Clean Air Act. MTBE has been detected in our State's gasoline supply. Levels measured so far are generally quite low; a couple percent or less. Therefore, it appears that MTBE may be entering Oregon as a residual component of gasoline from states such as California that have used MTBE extensively as a key element of their air quality strategy. Or, the low levels of MTBE may have been added to maintain adequate octane levels.

What Happens to MTBE when it enters the Environment?

MTBE quickly evaporates from open containers and surface water, so it is commonly found as a vapor in the air. MTBE can be broken down quickly in the air by sunlight. MTBE also can return to earth in precipitation as snow or rain. MTBE is very soluble in water. It is also very mobile in soils and, if released to the ground, may get into groundwater. Once in groundwater, MTBE is difficult to remove and may remain there a long time. It also is very mobile in groundwater and has been found at cleanup sites in Oregon as far away as ¾ mile from where it was spilled. MTBE does not appear to build up significantly in plants and animals.

Is MTBE Impacting Oregon's Environment?

DEQ has found soil and groundwater contaminated by MTBE due to gasoline leaks. Although the MTBE contamination is severe enough in a couple locations to be a major concern, it is generally detected at much lower levels than have been found in California or New York.

In a recent study conducted by DEQ and the Oregon Health Division water samples were collected from 45 public drinking water systems that use wells located within ¼ mile of a gasoline underground storage tanks. The study also sampled 5 drinking water systems that derive water from lakes used for motorized watercraft recreation. MTBE was detected in only one sample and at a very low concentration. The public drinking water supplies in two other communities are known to be impacted by MTBE and remedial measures are being taken.

What are the Health Threats from MTBE?

Laboratory studies on rats and mice suggest that drinking MTBE contaminated water at concentrations greater than several thousand parts per billion (ppb) may cause gastrointestinal irritation, liver and kidney damage, and nervous system effects. Breathing MTBE vapors may also cause nose and throat irritation. Exposure to large amounts of MTBE has been shown to cause cancer in laboratory animals, and it is possible MTBE could cause cancer in humans. The U.S. Environmental Protection Agency (EPA) is performing more studies to better understand the potential cancer effects of MTBE. MTBE has a very unpleasant taste and odor, and these properties can make contaminated drinking water unacceptable to the public. To avert these aesthetic effects, EPA has issued a Drinking Water Advisory for MTBE recommending that concentrations in drinking water not exceed 20 to 40 ppb. EPA believes these low levels are protective of human health.

Does DEQ have a Cleanup Level for MTBE?

DEQ's recently completed guidance document, Risk-Based Decision Making for Remediation of Petroleum-Contaminated Sites, specifies a 20 ppb cleanup standard for MTBE in water that is used for drinking. This level is based on taste and odor and was derived from the Environmental Protection Agency's drinking water advisory of 20 to 40 ppb.

What Next?

The DEQ, Oregon Health Division, and Oregon Department of Agriculture are working together to better assess the presence and impact of MTBE in Oregon. To accomplish this we are:

- continuing to monitor for MTBE in groundwater at leaking underground storage tank sites;
- continuing to identify potential sources of MTBE contamination as part of the source water assessments for each public water system; and
- continuing to monitor motor fuel quality and document the occurrence of MTBE in Oregon's fuel supply.

The EPA is assessing the problems relating to the use of MTBE and it is likely that EPA will establish a secondary drinking water standard for MTBE in the near future. EPA also is seeking a ban or phase out of MTBE as a fuel additive. DEQ will continue to watch developments carefully and incorporate new information into our efforts as it becomes available.

Where do I get More Information on MTBE?

If you have specific questions about your drinking water, you should contact the agency or organization that provides your drinking water. They are required by Federal and State law to monitor the quality of their drinking water and provide this information to their customers.

For general information about MTBE, you can contact Merlyn Hough with DEQ Tanks Program at 1-800-844-8467 or Kevin Parrett with DEQ Cleanup Program at 1-800-452-

4011. You may also get information at our internet site at www.deq.state.or.us

For general information about drinking water, contact the Oregon Health Division at 503-731-4010 or go to their internet site at: <http://www.ohd.hr.state.or.us>

For general information about motor fuel testing, you can contact the Oregon Department of Agriculture, Measurement Standards Division, at 503-986-4670 or go to their internet site at: www.oda.state.or.us

The following internet sites also have excellent information on MTBE:

- www.epa.gov
- www.atsdr.cdc.gov/tfacts91.html

This page updated October 2000

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If you have questions or comments about the web site contact DEQ's [webmaster](#).