SR

2

Alaska State Legislature

SENATE

Senator Dave Donley

Official Business

P.O. Box V
State Capitol
Juneau, Alaska 99811

SPONSOR STATEMENT

Senate Resolution 2

Urging the Environmental Protection Agency to Suspend the Oxygenated Fuels Program in Anchorage

The purpose of this resolution is to ask the Environmental Protection Agency (EPA) to suspend the Anchorage oxygenated fuels program for 1993-94 unless it is proven completely safe and effective.

EPA began its oxy-fuel program November 1, and suspended the program on March 1. Many Anchorage residents complained of health problems related to oxy-fuels and nearly 18,000 residents signed a petition urging Governor Wally Hickel to end the program.

This resolution discusses alternatives to the oxygenated fuels program and allows for the continuance of the program if it works.

STATE OF ALASKA

WALTER J. HICKEL, GOVERNOR

DEPT. OF HEALTH AND SOCIAL SERVICES

DIVISION OF PUBLIC HEALTH
SECTION OF EPIDEMIOLOGY

3601 "C" STREET, SUITE 576
P.O. BOX 240249
ANCHORAGE, ALASKA 99524-0249

INFECTIOUS DISEASES
AIDS/STD
TUBERCULOSIS
IMMUNIZATION 561-4406
CHRONIC DISEASES
DIABETES
INJURY CONTROL

Preliminary Evaluation of Potential Illness Due to Exposure to Oxygenated Fuels Anchorage, Alaska

Bruce Chandler, M.D., M.P.H.
John Middaugh, M.D.
Section of Epidemiology
December 23, 1992

Background

The Section of Epidemiology collaborated with the National Center for Environmental Health (NCEH), Centers for Disease Control and Prevention (CDC) in an investigation of potential illness due to exposure of oxygenated fuels in Fairbanks, Alaska. Our findings were reported on December 11, 1992. On December 11, 1992 the oxygenated fuel program was suspended in Fairbanks but continued in Anchorage.

Because our initial health investigation was limited to Fairbanks, during the week of December 14-18, the Section of Epidemiology conducted a similar study in Anchorage.

Methods

We selected three groups for study: taxi cab drivers at the Anchorage International Airport, employees at the Anchorage Neighborhood Health Center, and employees at Providence Hospital. All persons were asked to complete a questionnaire similar to the one used in Fairbanks. All persons were asked if they experienced an increase in any of the following health complaints after November 1, 1992: red, watery, irritated or itchy eyes; nausea or vomiting; burning sensation in the nose or mouth; cough; headache; dizziness; and spaciness or disorientation. We also asked the amount of time spent traveling by motor vehicle in Anchorage, whether there was an increase in several symptoms of acute viral infection (diarrhea or loose stools; fever; sweats or chills; and muscle aches), and age and sex.

Taxi cab drivers were interviewed on December 18 at the Anchorage International Airport as they waited for fares. Employees of the Anchorage Neighborhood Health Center were interviewed on December 16 at the clinic. Employees of Providence Hospital completed questionnaires during their lunch break on December 17, and an epidemiologist reviewed questionnaires to ensure that all fields were completed.

We defined a possible oxyfuel-related case as a person who reported that after November 1, 1992 (the date that all gas stations in Anchorage were required to use oxyfuel) they experienced:

1. An increase in headaches; or
2. An increase in two or more of the following complaints:
    - nausea or vomiting
    - burning sensation in the nose or mouth
    - cough
    - dizziness
    - spaciness or disorientation
    - eye irritation

An individual who had any one (or more) of the following symptoms at any time was considered to possibly have an acute infection and therefore was not counted as a case:

- diarrhea or loose stools
- fever
- sweats or chills
- muscle aches

If an individual could not recall when their symptoms began, we included them as a case. If they mentioned onset as possibly at any time in October or earlier, they were excluded as a case.

Results

The number of persons interviewed is shown in Table 1. Only one person refused to participate. The proportion of persons interviewed who met the case definition was highest in taxi cab drivers (48%) compared to health care employees (25%, 27%). The proportions of health care employees who met the case definition in Anchorage (26%) was almost identical to the proportion in Fairbanks (29%), while the proportion of taxi cab drivers in Anchorage (48%) was higher than taxi cab drivers in Fairbanks (33%).

Table 1. Persons interviewed and number of cases - Anchorage

	Number interviewed	Number of cases (%)
Taxi drivers	25	12 (46)
Anchorage Neighborhood Health Center employees	29	7 (25)
Providence Hospital employees	108	29 (27)

The symptoms of persons meeting the case definition are shown in Table 2. Headache was the most common complaint and was generally of short duration (less than 1 hour, or between 1 and 24 hours).

Table 2. Symptoms of cases of possible oxyfuel-associated illness - Anchorage

	Taxi drivers (n=12)	Anchorage Neighborhood Health Center employees (n=7)	Providence Hospital employees (n=29)
Headache	11	6	25
Cough	4	2	11
Nose or throat burning	5	2	11
Eye irritation	8	2	11
Nausea or vomiting	5	1	8
Dizziness	4	2	5
Spaciness	4	0	3

A higher proportion of cases in Anchorage reported headache, nose or throat burning, eye irritation, and nausea or vomiting. (Table 3)

Table 3. Comparison of Symptoms in Cases

Symptoms	Fairbanks (N=45) N	%	Anchorage (N=48) N	%
Headache	34	(76)	42	(88)
Cough	18	(40)	17	(35)
Nose or throat burning	13	(29)	18	(38)
Eye irritation	13	(29)	21	(44)
Nausea or vomiting	5	(11)	14	(29)
Spaciness	6	(13)	7	(15)

We examined the proportion of people who met the case definition who reported having symptoms while traveling in a motor vehicle or adding gasoline to a motor vehicle (Table 4)). Anchorage cases reported more symptoms while traveling than while fueling, a finding similar to cases in Fairbanks.

Table 4. Number of cases who reported symptoms while traveling in or adding fuel to a motor vehicle - Anchorage

	Number of cases	Symptoms while traveling	Symptoms while fueling
Taxi drivers	12	12	9
Anchorage Neighborhood Health Center employees	7	5	3
Providence Hospital employees	29	22	16

Discussion

The results of this study in Anchorage are very similar to the results of our earlier study in Fairbanks. The proportion of health care workers in Anchorage who met our case definition

was almost identical to the proportion in Fairbanks. A higher proportion of taxi cab drivers in Anchorage met the case definition than in Fairbanks. In both cities, taxi cab drivers had a higher proportion of cases than health care employees.

Because the University of Alaska Anchorage does not have students living in dormitories on a campus as isolated as in Fairbanks, we did not attempt to interview University students in Anchorage. We could not identify a readily accessible group in Anchorage to use as controls.

The epidemiologists who administered the questionnaires judged that most persons who participated were sincere, concerned, and appeared to be providing honest information about their symptoms. Several Anchorage taxi cab drivers mentioned several peripheral issues that might have biased their reporting of symptoms including:

- "oxyfuels cost more"
- "my car is not running good"
- "my gas mileage is down"
- "the airport is charging us more so my profits are down"

As in Fairbanks, symptoms of illness were acute, mild, of short duration, and consisted primarily of headache, eye and throat irritation, and cough. Many persons related their symptoms to exposure either in or while fueling a motor vehicle. No persons were identified who had experienced severe symptoms.

There are many limitations to this investigation. The investigation was initiated with only modest goals--to try to determine if symptoms were occurring, if symptoms occurred in a consistent pattern, and if symptoms could be related to exposure to oxyfuel. No definitive result could be expected from our study.

We were especially interested to compare results in Anchorage with results from our earlier survey in Fairbanks. Compared to the widespread media coverage and public opposition to the oxyfuel program in Fairbanks, little organized protest or publicity occurred in Anchorage. Until this survey, we had only anecdotal information that Anchorage individuals were experiencing illness possibly due to exposure to oxyfuels.

Complaints of illness in Fairbanks occurred before typically arctic temperatures descended. The occurrence of symptoms in Anchorage is consistent with those in Fairbanks and is not able to be ascribed solely to the formidable arctic climatologic winter conditions usually seen in Fairbanks.

By necessity, our findings must be considered preliminary, requiring substantial additional investigation. Our limited study does not provide definitive evidence that symptoms are due to the oxyfuel program. Nevertheless, we believe that the findings of our investigation lend support to reports that both Anchorage and Fairbanks residents are experiencing illness associated with exposure to oxygenated fuel or motor vehicle exhaust. If we extrapolate from

the observed attack rate to the general population of Anchorage, then as many as 24,897 Anchorage residents may be experiencing symptoms due to exposure to oxyfuels.

Symptoms appear to be consistent with those reported elsewhere and are more prevalent among those more heavily exposed compared to a control group. Symptoms are mostly acute, mild, and of short duration. No serious illness is known to have occurred due to exposure.

Definitive studies to strengthen the evidence of the relationship between the oxyfuel program and illness will require substantial effort and time.

Recommendations

We believe that the balance between expected health benefits from continuation of the current oxyfuel program compared to the very real possibility that illness is being caused by the program needs careful consideration.

No illness can be anticipated to occur from exposure to carbon monoxide in ambient air at the levels and frequency that have occurred in the past or could be expected to occur in Anchorage and Fairbanks, if the program were to be suspended.

We recommend that the oxyfuel program in Anchorage be suspended. Additional studies should be undertaken to provide definitive scientific information upon which to base decisions about use of oxyfuels in the future.

Acknowledgement

Our thanks to Janet Cismoski, R.N., C.D.E.; Mike Beller, M.D., M.P.H.; Brad Gessner, M.D.; Mindy Schloss, R.N., M.P.H.; and Diane Ingle, B.A. for their assistance in conducting this investigation.

N E W S R E L E A S E

Alaska Department of Environmental Conservation
410 Willoughby Ave. Juneau, Alaska 99801-1795
Phone: (907) 465-5060 Fax: 465-5097

February 8, 1993 Contact: Joe Ferguson

MTBE USE TO BE CONCLUDED MARCH 1 ON SCHEDULE

Juneau... Scientists and officials from State, federal, and Anchorage agencies conferred today to review scientific studies regarding possible negative health effects from the use of MTBE in Alaska. Officials agreed to conclude MTBE use in Anchorage on March 1 as scheduled. A decision whether to resume its use next fall will be made after studies are completed.

MTBE is a "fuel oxygenate" mixed with gasoline to help reduce carbon monoxide in car exhausts.

MTBE was earlier removed from the gasoline supplies in Fairbanks after State and federal officials concluded that further cold climate studies should be conducted before use in Fairbanks unique climate. The group of officials and scientists meeting today agreed that MTBE should be resumed in Anchorage or Fairbanks only after further studies show that continuing to require the MTBE will have a net positive health effect.

Studies including blood sampling and measurements of ambient indoor and outdoor air have been done in Fairbanks in a joint project by the Centers for Disease Control and Prevention, the Alaska Department of Health and Social Services, the Alaska Department of Labor and the Alaska Department of Environmental Conservation. These studies are continuing, and full and complete data and correlation results of original measurements are not yet finished.

At this point, results are not sufficient to conclude that there are ill health effects from the use of MTBE, but the substance was traceable in blood samples taken during the recent studies. Further work is needed to determine whether any negative health effects result from chronic exposure to MTBE. Scientists said that finding the substance in blood samples does not necessarily mean that it causes health problems. Trace amounts of chemicals from the environment are commonly found in blood and tissue samples.

For further information, contact: Len Verrelli, DEC Juneau, 907-465-5128.

# # #

United States
Environmental Protection
Agency

Region 10
1200 Sixth Avenue
Seattle WA 98101

Alaska
Idaho
Oregon
Washington

EPA News Release

92-105

Contact: Bob Jacobson
EPA/Seattle
(800) 424-4372...toll-free
from within Alaska
or
(206) 553-1203..direct line
(206) 285-3916..home phone

December 11, 1992

FOR IMMEDIATE RELEASE

The Environmental Protection Agency has received notification or Governor Hickel's intention to suspend temporarily the requirement for the use of oxygenated fuels in Fairbanks. EPA understands the reasons that caused the Governor to take such action. EPA remains convinced that the oxygenated fuels program is an effective way to reduce carbon monoxide and has the added advantage of reducing other gasoline additives that are potentially harmful.

However, the concerns of the citizens of Fairbanks have been and must continue to be taken seriously. EPA will conduct additional studies of oxygenated fuels in arctic conditions. In the meantime, EPA and the Alaska Department of Environmental Conservation will work together to continue the progress toward attainment of the carbon monoxide standard.

EPA supports the Governor's decision to retain the oxygenated fuels program in Anchorage, since geography and climate are more like other successful programs in the lower 48 states.

#

3/7/93

Researcher to speak on oxyfuel issue

The nationally acclaimed university researcher who invented an instrument to measure carbon monoxide emissions from moving vehicles will speak about the pros and cons of oxyfuel during a free public lecture at 7 p.m. Tuesday in the borough's Noel Wien Library.

The talk is sponsored by the Geophysical Institute of the University of Alaska Fairbanks.

University of Denver Professor Donald Stedman gained national attention when he proved that a one-second test conducted with a simple infrared beam could identify cars that produce too much carbon monoxide, the suffocating gas that reaches peak levels during cold weather.

Stedman's remote automobile measuring device was set up and tested in a busy intersection in Provo, Utah. The device shot an infrared beam at about 10,000 moving vehicles to find out which were emitting gross amounts of carbon monoxide. Those emitting high amounts of carbon monoxide were brought into service stations for tune-ups. Initial research indicates air in Provo was cleaner a month later.

Researchers have shown that only about 10 percent of the cars in a given area put out more than 50 percent of the pollution. If the major polluters are forced to clean up, blanket requirements that affect all drivers in an area may not be necessary, some researchers say.

Last November, the Environmental Protection Agency required gas stations in Fairbanks and 39 other metropolitan areas nationwide to sell gasoline with added oxygen. The Fairbanks oxygenated fuel program lasted less than two months. Opponents argued the fuel, which added 14 cents to a gallon of gas, made them physically ill, caused mechanical problems, and drastically reduced gas mileage.

No research was available to show how oxyfuel performed at temperatures below 20 degrees, according to Geophysical Institute Assistant Professor Richard Benner. Benner and research assistant Dave Veasey are currently conducting a variety of tests to find out the best means of reducing carbon monoxide emissions in the Fairbanks North Star Borough.

Carbon monoxide emissions in the borough have exceeded air quality standards this winter and indications are EPA will probably require oxyfuel to be sold in Fairbanks again next winter unless suitable alternatives to reducing carbon monoxide emissions are found, Benner said.

The EPA tested Stedman's device in Fairbanks earlier this winter. No results have been released yet.

NEWS CLIPPINGS IN
Anchorage Daily News

Date: 2-18 1993

Oxy-fuel, cold weather

By MICHAEL O'CALLAGHAN

There are three strong reasons most Alaskans oppose the use of fuel oxygenated with MTBE.

1) It causes health problems with a substantial portion of people who breathe its fumes — 30 percent of those in Anchorage, according to the state epidemiologist, Dr. John Middaugh. In his recent study. 2) Oxy-fuel causes mechanical problems in many Alaska vehicles and reduces miles per gallon for drivers. 3) MTBE costs four times as much here as in the Lower 48.

What would any country think if an enemy placed a poison in the air that caused 30 percent of its population to become ill and somehow was able to take money from the people while doing it? At a minimum, the country would consider it an act of war.

HEALTH

A person's health is one of his most precious assets. There is no doubt oxy-fuels diminish Alaskans' health.

COMPASS

Dr. Middaugh also coordinated with the federal Centers for Disease Control and National Center for Environmental Health to study health effects of oxy-fuel in Fairbanks. They found 30 percent of those with moderate to heavy exposure to MTBE automobile exhaust suffered health problems. Oxy-fuel is a sick idea, and it causes illness.

The additive MTBE causes nausea, vomiting and shortness of breath. When emitted from an internal combustion engine it forms many by-products. Few have been identified — of the ones that have, little is known about their toxic or carcinogenic (cancer-causing) abilities. The most is known about aldehydes, the most common known as formaldehyde. There are many types of formaldehyde. They cause cancer, coughs, phlegm, asthma, chronic bronchitis and chest colds.

Another known by-product is acetaldehyde. It is also a poison, suspected cancer causer and known irritant to humans. We are guinea pigs.

Scientists have found that acetaldehyde lasts for about 12 hours, formaldehyde, four hours at 74 degrees Fahrenheit. They deteriorate because of sunlight and above-freezing temperatures. It is known that their lifetime is extended with cold and darkness, maybe causing them to last two or three times longer.

When Denver introduced 8 percent oxy-fuel (ours is 15 percent) their aldehydes jumped 26 percent, and they exceeded National Institute of Safety and Health safety levels several times. Anchorage doesn't test for aldehydes. Feel safe?

The cold-start phenomenon accounts for the bulk of Anchorage's air pollution (CO) problem. Oxy-fuel is supposed to reduce CO emissions. In a Denver cold-start study comparing oxy- ad non-oxy-fuels there was a one-third increase in CO.

Meanwhile, Anchorage and Mat-Su people suffer diminished health because of MTBE gasoline.

Study finds gas additive in blood

Stevens seeks fuel exemption

3/11/93

By DAVID WHITNEY
Daily News reporter

WASHINGTON — U.S. Sen. Ted Stevens said he would seek legislation exempting the state from having to use oxygenated gasoline after the Centers for Disease Control told Congress Wednesday that a study found the pollution-control additive MTBE in the blood of Fairbanks drivers.

The additive methyl tertiary butyl ether is intended to cut carbon monoxide emissions from cars in cities where pollution levels during the winter exceed federal standards.

Although pollution levels are excessive in Fairbanks and Anchorage only a few days a year, the two cities were among 39 urban areas nationally that were required to use oxygenated gasoline under 1990 amendments to the Clean Air Act.

The program took effect in mid-October, and within two weeks several hundred Fairbanks residents had complained of health problems including vomiting, dizziness, headaches and eye irritation.

Based on those complaints, Gov. Wally Hickel suspended the program in Fairbanks, but gasoline con-

Please see Page B-3, GAS

■ **A WINTER HEADACHE**
Consumers in Montana, Colorado and New Jersey are also complaining about oxy-fuel. B-3

GAS: Senator wants additive out of Alaska

Continued from Page B-1

taining MTBE continued to be sold in the Anchorage area until March 1.

CDC Director William L. Roper told a Senate Appropriations Committee panel Wednesday that its tests on 18 Fairbanks drivers and automotive workers found minute amounts of the chemical present in their blood.

Roper said the study results "suggest a possible relationship" between the additive and the health complaints but "we strongly recommend further investigation."

Stevens, R-Alaska, said he doesn't want to wait that long.

"I intend to introduce a bill that prohibits use of all oxygenated fuels in Alaska until they are proven safe," Stevens said.

MTBE has been used for years as a substitute for lead to improve gasoline octane levels. As a pollution-control additive, however, it represents 15 percent of each gallon of gasoline, many times higher than its concentrations when used as an octane booster.

After Wednesday's hearing, the nation's leading manufacturer of MTBE, Arco Chemical Americas Co., said it believes the additive is safe but that the industry is working with the CDC and the Environmental Protection Agency on additional studies that it hopes can be completed this summer.

The MTBE industry also released a report dated Tuesday by the Colorado Department of Health saying that use of MTBE gasoline there in the 1991-92 winter season had reduced pollution by 23 percent.

The state began using the oxygenated gasoline in 1987 and reported receiving "only a handful" of health-related complaints.

2/11/93 Fairbanks News Miner

Oxyfuel leaves trace here

By STACEY JOYCE
States News Service

WASHINGTON — Government scientists have found traces of a controversial chemical in the blood of Fairbanks residents, but aren't sure if it caused a rash of minor health problems this winter.

Dr. William Roper, retiring director of the Centers for Disease Control and Prevention, told federal lawmakers Tuesday that there could be a "possible relationship" between exposure to a gasoline additive known as MTBE and complaints about headaches and nausea.

There is insufficient evidence however, to characterize MTBE as a health risk, Roper told the Labor, Health and Human Services Subcommittee of the Senate Appropriations Committee. He recommended further study of the issue.

Last December, Gov. Walter Hickel halted the use of MTBE-enhanced gasoline in Fairbanks after more than 200 residents complained of various symptoms, including headaches, dizziness and nausea. MTBE, which stands for methyl tertiary butyl ether, increases the oxygen content of gasoline. This "oxygenated fuel" helps to reduce automotive pollution.

Thirty-nine American cities must use oxygenated fuels during the winter months to reduce carbon monoxide emissions.

Republican Sen. Ted Stevens contends that Alaska should not have to use oxygenated fuels, because the state only violates national air quality standards a few days each year. Stevens pledged to introduce legislation that would prohibit the use of oxygenated fuels in Alaska until they are proven to be safe.

The fuel program also provoked public outcry in Fairbanks because it boosted the cost of gasoline 14 cents.

The use of MTBE-enhanced gasoline "was such a political issue (in Fairbanks). It was hard to separate out people's emotional and health reactions," said Richard Wilson, director of the Environ-

See OXYFUEL on Back Page

OXYFUEL

Continued from Page A-1

mental Protection Agency's (EPA) mobile source air pollution division in Washington, D.C.

Leonard Varrelli, chief of air quality management for the Alaska Department of Environmental Conservation, said residents picketed buildings and draped blankets across their cars in protest.

The complaints stopped, Wilson said, when Hickel banned MTBE, even though the chemical remained in the gasoline for some time thereafter.

Since November 1992, the CDC and the EPA have been trying to determine if there is a link between the health complaints Alaska's extremely cold weather and the use of MTBE.

Roper told the panel that "preliminary findings show measurable levels of MTBE in the blood of Fairbanks workers and commuters exposed to auto exhaust fumes from gasoline made with MTBE."

Scientists will conduct another battery of tests around the country to determine if MTBE is harmful to humans. While researchers collect more data and crunch numbers, CDC's preliminary results remain open to interpretation.

ARCO Chemical, which produces about 2 million gallons of MTBE a day, was not surprised to find traces of MTBE in blood.

That would occur with exposure to any chemical, said Bill Whitney, business manager for ARCO Chemical.

The level of MTBE found in Fairbanks residents was "30,000 times below the level needed to cause any adverse health effects," Whitney said.

Complaints spur oxy-fuel study

Research under way, though EPA says additive doesn't affect health

By MICHAEL PARRISH
Los Angeles Times

An additive mixed into gasoline this past winter is giving consumers headaches and making them nauseous, some public-interest groups and environmentalists say.

So far there is no scientific basis for the fear, says the Environmental Protection Agency and Arco Chemical Co., the world's largest maker of the substance. The EPA had required the additive.

Even so, in response to consumer complaints, producers of the additive and the American Petroleum Association joined the EPA last month to finance a study by Rutgers University of commuter exposure.

Consumer complaints of nausea and headaches from gasoline containing 15 percent methyl tertiary butyl ether began last fall in Fairbanks and Anchorage and have surfaced more recently in Missoula, Mont., and parts of Colorado and New Jersey.

"I have seen customers gagging and turning away" at gasoline stations in Southern California, commuter Paul Christensen said Friday.

The EPA and producers of MTBE say a decade's experience with the additive has shown no such harmful effects. And the new research should answer any remaining questions before the additive is required again.

"This (Rutgers) test program is well under way," said William S. Whitney, business manager for oxygenated fuels at Philadelphia-based Arco Chemical. The study will be finished by August, Whitney said. "So this should be understood before the program begins next fall. The only reason we haven't addressed this health issue before is because we haven't observed it."

The 1990 federal Clean Air Act required additives such as MTBE in gasolines distributed in 39 urban areas of the United States beginning Nov. 1, 1992.

Such additives, known as oxygenates, alter the combustion of gasoline to reduce an automobile's emission of carbon monoxide. Winter weather, with its temperature inversions and slower auto-engine warmup, increases the output of carbon monoxide, which can harm people, particularly those with existing respiratory ailments.

The two additives available — MTBE and ethanol, a grain alcohol usually made from corn — could have their own adverse health effects, some environmentalists and consumers worry. During combustion, both create formaldehyde.

Some concern also has been raised that MTBE could be a low-level cancer-causing agent over long exposure. Though studies so far show little likelihood of this, according to the EPA, the agency still is studying the matter. An EPA spokesman said the Clean Air Act does not specify which oxygenate should be added to winter gasoline.

Concern over consumer complaints of nausea and headaches also has caught the attention of the federal Centers for Disease Control and Prevention. An early CDC report found traces of MTBE in the blood of several Fairbanks residents.

Richard D. Wilson, director of the EPA's office of mobile air-pollution sources, sees the issue muddled by factors beyond science.

"People will blame anything new for anything that happens to their cars."