

**CLEAR WATER COUNCIL**  
**Meeting Highlights**  
**February 10, 2004**

**Location:**

NJ Environmental Infrastructure Trust, 3131 Princeton Pike, Building 6, Suite 201, Lawrenceville, NJ.

**Attendees:**

Pat Matarazzo, Kerry Kirk Pflugh, Lou Mason Neely, Pat Pittore, Diane Alexander, Carmen Valentin, Ferdows Ali, Russ Furnari, May Goldsmith, Rick Kropp, Art Baerh, Shari Blecher and Ursula Montis.

**MTBE**

Kerry Kirk Pflugh (DEP) arranged to have two speakers come and speak to the CWC on MTBE. The first speaker was Shari Blecher, an attorney from the Princeton environmental law firm Lieberman & Blecher. The second speaker was Arthur Baehr, a top researcher of MTBE in the US and works with USGS.

**Shari Blecher** - is involved in a suit against Chevron, Gulf, Sunoco and Cumberland Farms on behalf of private well owners over MTBE contamination. She said experts estimate more than 500 such public wells and 45,000 private wells nationwide are contaminated with MTBE. MTBE is the acronym for methyl tertiary butyl ether. It is a compound mixed in with gasoline since the early 1990's to oxygenate it, making it burn cleaner and reduce air pollution. Because oxygenation was federally mandated, refiners and oil companies say they should not be liable for its effects. In April of 2002, the jury in the case of South Tahoe Public Utility District v. Atlantic Richfield Co., determined that MTBE was defectively designed because the risk of harm inherent in its design outweighed the benefits of the design, and was defective because of the oil companies' failure to warn about its characteristics. The "Fuels Safe Harbor" provision in the energy bill would have provided the protection they sought. Under the provision, no motor vehicle fuel containing MTBE can be classified as defective. The energy bill would prohibit you from going after the Oil Companies under the product defects and failure to warn theories. Thankfully the provision was defeated. Ms. Blecher has a feeling they will try to hide it in the Transportation Bill in order to get it through Congress.

MTBE is highly soluble in water, much more than the other gasoline constituents of concern: benzene, toluene, ethyl-benzene and xylene(BTEX) This means that when MTBE comes in contact with water, it will dissolve into the water and flow along with it. In addition, MTBE does not adsorb, or naturally stick to the soil, as well as BTEX. So, if there is a release of gasoline containing MTBE into the soil, MTBE will flow through the soil to the water. As a result of MTBE's high solubility even relatively small spills of gasoline blended with MTBE, can adversely affect a nearby well. MTBE generally does not biodegrade in the natural environment. While the BTEX components generally biodegrade in the environment, in the event of contamination of soil and/or water by MTBE, it will not naturally resolve itself over time. In fact, the MTBE plume will continue to spread and affect large volumes of water. MTBE has a very low taste and odor threshold. Even more significant, because of its high solubility, once MTBE has affected soil or groundwater, it is much more difficult and expensive to remediate than the other constituents of gasoline. Internally, the oil companies estimate that the addition of MTBE to gasoline increases the cost of remediation at clean-up sites by at least a factor of five, therefore clean up would be extremely expensive. It is our position that these costs should not be borne by the ratepayers, but should instead be borne by the manufacturers of MTBE and the refiners that blend it into their gasoline.

Ms. Blecher stated that recently the EPA had concluded that MTBE was an "animal carcinogen, and poses a carcinogenic potential to humans". It is believed to be linked to kidney diseases, bladder diseases, and in addition, it is said to cause respiratory problems. Concerning a case we were involved with, and from a medical monitoring perspective, we determined from our expert's findings, that people exposed to even low levels of MTBE over the course of a long period of time, should require medically monitoring.

As a result of investigation, it has been established that many of the oil companies that have added MTBE to their gasoline knew full well by the early 1980's that MTBE had characteristics that made it more harmful to the environment than the other constituents of gasoline. The oil companies also knew that as a result of MTBE's characteristics and the leaking UST (underground storage tanks) that they knew existed, the addition of MTBE to their gasoline would significantly affect drinking water in the vicinity of those stations. They were warned by their environmental departments not to add MTBE to their gasoline, but these warnings went unheeded. Oil companies argue that they were forced to add MTBE to their gasoline because the government made them do it. However, the Clean Air Act Amendments simply do not require MTBE. There are other alternatives available, including ethanol. The use of MTBE skyrocketed after 1990 amendments to the Clean Air Act required the use of oxygenates in regions not in compliance with federal air quality standards. Oil companies picked MTBE over ethanol, because it is less expensive.

New Jersey has one of the highest action levels for MTBE. Twenty-three states have, in some form, banned the use of MTBE in gasoline. New Jersey, who has the biggest problems and most of the litigation on MTBE, is continuing to let it be used.

Pat Matarrazzo - With these actions ongoing, has there been any reaction from DEP?

Ms. Blecher - There has been absolutely no reaction.

Lou Neely - The Energy Bill failed by two votes.

Ms. Blecher - Yes, it has failed. The Senators have now become aware of the situation and will try to keep the provision out of the Energy Bill. However, if it does not come back, new rumors are that they will hide that liability waiver in the Transportation Bill and if it goes into that Bill, it will not become an issue and it will pass. This is a very strong possibility. The one thing that the Governor should do is get involved with any lawsuits concerning any municipality that is in any way affected by MTBE. Otherwise, they could be giving up their rights if they do not do that. It's free money, good public policy and a way to get your clean up paid for without going to the taxpayer. In addition, there are two different ways that the State can get involved. First through their Natural Resource Damages litigation. This is a way to go after the oil companies to get money for clean up in general, to help with the clean up of the aquifers in NJ and also help municipalities impacted by MTBE in the future. Secondly, the State can use the Spill Fund to clean up abandoned gas stations, private well owners who might have MTBE in their water. Third, the State needs to ban MTBE in gasoline. They need to be at the forefront. Finally, in regard to the Energy Bill, perhaps a joint resolution can be written opposing the Energy Bill with the state Senators and NJ taking a harder stand against the opposition.

Lou Neely - As a result of our meeting with Clean Air Council (CAC), it seemed that CAC did not find MTBE to be a problem because of the efficient burning of MTBE in gasoline. I would invite you to write an article on what you spoke about today, to be published in the League of Municipality Magazine.

Ms. Blecher - I would be happy to write an article for the Magazine.

Lou Neely - Will there be anything different said at the seminar on February 18<sup>th</sup>, in New Brunswick at the NJ Law Center (MTBE Drinking Water Contamination: Update 2004), than what you spoke of today?

Ms. Blecher - It will be a little different in there will be more speakers with different information on MTBE. Also, Diane Pupa, from DEP will be there to speak on the update of an MTBE study done through the Private Well Testing Act about a year and a half ago, and if there has been a problem in private wells to date. They will also be talking about the Energy Bill.

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**Arthur Baehr, USGS** - We are a federal government agency under the Department of Interior. We do research and other projects in water resources in New Jersey. We do collaborative studies with DEP and other government agencies, as well as federally funded projects. Today I will be talking about some of the projects we have worked on that have documented the presence of MTBE. In the state of NJ the volume of MTBE used in gasoline has been as much as 11-15 % by volume, which is a lot of volume. There are a number of ways gasoline can get into the environment. One of these is through gas spills from leaking tanks or other accidents involving gasoline. Gasoline is not the only source of entry of MTBE. Through studies, we found that used motor oil has significant amounts of MTBE. Clean motor oil does not, but as it runs through the engine and weathers, it gets contaminated and that is when the MTBE shows up, through the combustion process. Gas spills usually occur by accident, but used motor oil contamination is another story. People are always changing oil and storing it in drums. We don't always know how this oil is disposed. An example of a motor oil spill was a study we did on Cranberry Lake in Sussex Co. There were eight homes that had MTBE contamination in their wells. The highest concentration was around 900 micrograms/liter. There were no spills from gasoline in the area. We attributed the contamination to be due to used motor oil disposal.

The big difference between the work that we do at USGS and the work by a hydrologic or geologic consulting firm, is that our main activities involve sampling the ambient environment. That is, the regional scale of sampling of water where we purposely stay away from the contamination sites because we want see how wide-spread the chemical is. When we sample, we sample for many compounds (80) MTBE being one of those compounds. So we always have information about other compounds in coexistence with the particular compound of interest. We did a study of shallow ground water, (installed a well and did a study of the first water encountered). The results of our studies showed that MTBE was the second most frequently detected organic compound next to chloroform. We sampled different types of wells in Gloucester Co. We sampled shallow monitoring wells (10 ft. below water table), deep monitoring wells (50 ft. below water table), and municipal wells (public-supply wells). The results for MTBE was a higher detection frequency for shallow water (40-50 %) and in the deep wells there was a lower detection frequency of MTBE. The municipal wells, however, showed again a higher frequency of MTBE. Monitoring wells take in a smaller amount of water, whereas, municipal wells take in a larger amount, the water running over acres of land mixing young water with old water and getting a mixture of water. Any spillage of MTBE entering the land area could potentially end up in the municipal wells.

When we were sampling wells in northern New Jersey and finding low levels of MTBE, we decided to do samples of the lake waters as well. Water samples were collected from four lakes in Byram Twp, Sussex Co., NJ, in the summer of 1998, as part of an investigation of the occurrence of volatile organic compounds in domestic wells of lakeside communities. Cranberry Lake and Lake Lackawanna are surrounded by densely populated communities, where the use of gasoline-powered watercraft is prevalent and water is supplied by lakeside wells. Samples were collected from Cranberry Lake in early summer and again in late summer of 1998. Concentrations of the gasoline oxygenate MTBE ranged from 1.6 to 15.0 micrograms per liter on June 24 and decreased with depth. The depth-related concentration gradient is attributed to density stratification caused by the temperature gradient that is present in the lake during the early summer. MTBE concentrations ranged from 7.4 to 29.0 mg/L on Sept. 8<sup>th</sup> and were uniform with depth, as was water temperature, indicating that the lake was vertically mixed. On the basis of these concentration profiles, the mass of MTBE in Cranberry Lake was estimated to be 15 kilograms on June 24 and 27 kilograms on Sept. 8<sup>th</sup>. These mass estimates are equal to the amount of MTBE in 52 and 95 gallons, respectively, of gasoline that contains 10 percent MTBE by volume. These are the highest levels of concentrations of MTBE in the country that are not associated with gasoline spills. Concentrations of other oxygenates TAME and BTEX, in the lake, were very low. Samples were also collected from Lake Lackawanna on Sept 9<sup>th</sup>. Concentrations of MTBE and TAME ranged from 3.7 to 14mg/L and from 0.17 to 0.38 mg/L, respectively. Like those in Cranberry Lake the previous day, BTEX concentrations were less than 0.2mg/L and volatile organic compound concentrations and water temperatures were nearly uniform with depth. The mass of MTBE in Lake Lackawanna on Sept. 9<sup>th</sup> was estimated to be 6 kilograms, which is equal to the amount of MTBE in 21 gallons of gasoline that contains 10 percent MTBE by volume.

Oxygenated gasoline is used in watercraft on lakes across northern NJ. Many of these lakes are surrounded by communities similar to those at Cranberry Lake and at Lake Lackawanna, which depend largely on wells for water supply. Therefore, a regional assessment of the occurrence of these compounds in lakes and ground water is needed to determine the effect of the use of oxygenate gasoline on water quality in lakeside environments throughout northern New Jersey.

Ground water is the major source of water supply for the residents of Cranberry Lake and Lake Lackawanna. These lakes are man-made (formed with dams), and the combination of maintained water levels and clustered well withdrawal makes lake/well interaction likely. Moreover, some residents withdraw water directly from the lakes and treat it before consumption, but the treatment may not be effective for MTBE. Because MTBE is a possible human carcinogen (US EPA, 1997), the presence of MTBE in the lakes could threaten the quality of the local water supply. The MTBE concentrations in Cranberry Lake and Lake Lackawanna are of immediate concern.

The major benefit derived from oxygenated gasoline is in its use in automobiles; however, because gasoline formulation is not specific to use, oxygenated gasoline is used in watercraft across northern New Jersey. Fuel is routinely introduced to water simply by operating gasoline-powered watercraft, which have been associated with MTBE occurrence in lakes in Nevada and California. Spills associated with the handling of gasoline for refueling watercraft can increase the possibility that the underlying aquifer will be contaminated. Many lakes in northern New Jersey are surrounded by communities similar to Cranberry Lake and Lake Lackawanna, which depend largely on wells for water supply. Therefore, a regional assessment of the occurrence of these compounds in lakes and ground water is needed to determine the effect of the use of oxygenated gasoline on water quality in lakeside environments throughout northern New Jersey.

We did a study of 19 domestic wells in the lake area and found that all but one well had MTBE in them. We think that the wells lakeside draw in water from the lake, and of course, some degree of contamination.

There has also been documentation on seasonal occurrence of MTBE on the Delaware River because of recreational activities.

Pat Matarazzo - Has this information been presented to DEP?

Rick Kropp - We share the information regularly. Michelle Putnam will be meeting with us for a briefing on all of our water quality studies related to drinking water. Also, as the reports are issued, they are sent out to a mailing list that includes 20-30 people in the DEP.

Pat Matarazzo - Is there an MTBE component added to aviation fuel?

Art Baehr - I don't think MTBE is added to aviation fuel.

Lou Neely - How did you come to suspect used oil as a contaminant? Did you find dumping?

Art Baehr - In the area where we did the study, there was a handyman workshop and we noticed oil stains in his driveway. It was a small contamination incident.

Pat Pittore - How long would it take for the MTBE to disappear from the lake if stopped.

Art Baehr - It would disappear almost immediately from lakes and streams because it volatilizes off the water

Amy Goldsmith - In the summer water consumption would be higher, lowering the water level, and then pulling in water to the wells from the lakes. Would that mean that in the winter the MTBE levels would be lower?

Art Baehr - Yes, but not low enough, because the water usage in the summer would be much higher and pull in more contaminated water.

Pat Matarazzo - The Council had addressed the issue of MTBE back in 2000, but never heard anything back from the Commissioner's office. We will have to submit another letter to the Commissioner and with your report (addressed Rick Kropp) we may see an impact.

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**DEP Update:**

Kerry Kirk Pflugh - As far as the Council appointment status, Gary Sondermeyer informed me that it is still being reviewed by the Governor's office, so there is no update at present time.

There have been a few changes at DEP. Parks and Forestry has undergone a reorganization. The new Assistant Commissioner of Natural Resources is Jay Watson from the Green Acres Program. The new Director of Green Acres is John Flynn. The new Director of Parks and Forestry is Jose Fernandez, who was the Assistant Director

of Fish and Wildlife. The real impact to the Watershed Program is with Dave Rosenblatt, who was the Chief for the Southern Planning Bureau in Watershed Management. He will be leaving the Division and taking on the role of Administrator for Coastal Engineering and Dam Safety Program. At this point we do not know what that will mean for the Division. At this time, the two section chiefs, Bob Mancini and Steve Jacobus, of the Southern Bureau will report to Larry until our Assistant Commissioner makes a decision about what they want to do with the Division.

Lou Neely - I would like to move that we reissue the Council's letter on MTBE (in 2000) and send it to Commissioner Campbell along with a cover letter mentioning the presentations heard today; the many MTBE litigations, and the issues with the Clean Water Act and the Energy Bill. Also, to ask for a response since we did not receive one in 2000. Pat, could you do that?

Pat Matarazzo - Sure.

The motion was seconded by Pat Pittore. Motion was voted on and passed.

Pat Matarazzo - Have you had any reaction to the Rules now that they are out?

Kerry - We are inundated with questions and requests for presentations. We have to decide how we are going to respond and how staff time will be focused. As of March 3<sup>rd</sup>, the municipalities have to sign agreement indicating that they will comply and acknowledge the time frame. At that point, five case managers will call all the municipalities to find out whether or not they have received the permit package and to answer any preliminary questions. These case managers will be assigned the responsibility of working with and helping those municipalities over the next year. Starting in April, there will be three regional meetings targeted primarily to municipal engineers and planners, to do presentations and work specifically with them on how to comply with the requirements of the Rule. Then there will be sub-regional meetings. The five case managers will conduct meetings to work directly with the municipalities that need help. The Watershed and NJPDES Programs are in the process of coordinating our roles to provide support to the state, the municipalities and others, on what to do to develop Stormwater Management Plans and Ordinance Development. There is a Guidance Manual being developed that will provide them with language and include model ordinances. That will go online in the beginning of March. The Watershed Program is conducting presentations to several professional organizations. We have to decide whether Larry does the presentations or whether we pass this on to the planning bureau to be handled at that level. On stormwater.org there is a list of frequently asked questions where the public can go to get answers.

Meeting was adjourned.

