

Source Water Assessment

The New Jersey Department of Environmental Protection (NJDEP) has completed and issued the Source Water Assessment Report and Summary for the Middlesex Water Company - Bayview System, which is available at www.state.nj.us/dep/swap or by contacting the NJDEP, Bureau of Safe Drinking Water at (609) 292-5550. A summary of this report is found below.

The goal of the assessment was to measure each system's susceptibility to influences by potential sources of contamination. The NJDEP evaluated the susceptibility of the source water to various categories of contaminants defined below.

Pathogens – Organisms such as bacteria and viruses.

Nutrients – Compounds such as phosphorus and nitrogen that aid in the growth of organisms.

Volatile Organic Compounds (VOCs) – Man-made chemicals used as solvents, degreasers and gasoline components such as MTBE.

Pesticides – Man-made chemicals used to control pests and weeds such as Atrazine.

Inorganics – Mineral-based, man-made and naturally occurring, compounds such as arsenic and nitrates.

Radionuclides – Radioactive, man-made and naturally occurring, substances such as radium and uranium.

Radon – Naturally occurring gas.

Disinfection Byproduct Precursors – Naturally occurring organic matter, mainly in surface waters, that when combined with disinfectants such as chlorine produce unwanted byproducts.

A public water system's susceptibility rating (Low, Medium or High) is a combination of two factors:

- How sensitive the water supply is to potential contamination.
- How often a contaminant is used or exists near the source water.

The ratings are based on the potential for a contaminant to be at or above 50% of the MCL (High), between 10 and 50% of the MCL (Medium) and less than 10% of the MCL (Low)..

DEP considered all surface water highly susceptible to pathogens; therefore, all intakes received a high rating for the pathogen category. For the purpose of Source Water Assessment Program, radionuclides are more of a concern for ground water than surface water. As a result, surface water intakes' susceptibility to radionuclides was not determined and they all received a low rating.

If a system is rated highly susceptible for a contaminant category, it does not mean a customer is or will be consuming contaminated drinking water. The rating reflects the potential for contamination of source water, not the existence of contamination. Public water systems are required to monitor for regulated contaminants and to install treatment if any contaminants are detected at frequencies and concentrations above allowable levels. As a result of the assessments, DEP may customize (change existing) monitoring schedules bases on the susceptibility ratings.

Susceptibility Ratings for the Middlesex Water Company - Bayview System

The following table illustrates the susceptibility ratings for each contaminant category for each source in the system.

Parameter	Two Wells
Pathogens	Low
Nutrients	Medium
Pesticides	Low
VOCs	Low
Inorganics	Low
Radionuclides	High
Radon	Medium
Disinfection Byproduct Precursors	Medium

For more information about our water sources, please contact the Middlesex Water Company - Bayview System at (732) 638-7657. We can all play a role in protecting our water sources by disposing of waste such as motor oil, paint and household cleaners, and limiting the use of fertilizer, pesticides and herbicides. Contact your local Public Works Department for proper household hazardous waste disposal.

Making Water Safe To Drink - The Treatment Process

To provide you with quality drinking water, the Middlesex Water Company - Bayview System uses chlorine as a disinfectant for its groundwater supplies. Water quality is monitored in the distribution system to determine that state and federal water quality standards are met.

Groundwater from our wells passes through layers of soil and gravel, which act as a natural filter. Groundwater comes from an underground source of water known as an aquifer. These groundwater supplies are disinfected with chlorine to destroy bacteria that may be present and protect against microbial contaminants before being pumped into the distribution system. We monitor the level of this additive daily to ensure the proper dosage is being added.

Water Quality Report 2009



PWSID #0604001

Water Quality Report 2009

This document is an annual report on the quality of water delivered by the Bayview Water System in 2009. It meets the Federal Safe Drinking Water Act for "Consumer Confidence Reports" and contains information on the sources of our water, its constituents, and the health risks associated with any contaminants.

We believe high quality drinking water is vital to the well-being of our communities and are committed to delivering a safe and plentiful drinking water supply. We encourage you to read this report to gain a better understanding of all that's involved in bringing clean, clear tap water to your home. You may also view this water quality report at www.middlesexwater.com

Our Source of Water Supply

We continued to work hard in 2009 to provide high quality drinking water to our customers in the Fortescue Beach section of Downe Township. The Middlesex Water Company-Bayview System produced 7.6 million gallons of water last year. This water is supplied from two wells drilled about 400 feet deep in an artesian aquifer known as the Lower Kirkwood Formation. The Bayview System obtains its water solely from two wells, each with their own treatment facilities. Water quality is monitored at each wellfield, and throughout the distribution system, to determine that water delivered to our consumers meets federal and state drinking water quality standards. The Bayview System provides water service to about 300 customers in Fortescue Beach in Cumberland County.

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Iselin, New Jersey 08830
P.O. Box 1500

Middlesex Water Company - Bayview System



Landlords and businesses are encouraged to share this Water Quality Report with all water users at their locations.

- Help Preserve Our Water Resources!**
- Fix leaks immediately.
 - In hot weather, water grass early in the morning.
 - Select the appropriate water level when doing laundry.
 - Check sprinkler heads periodically to ensure they are aimed correctly.
 - Get a cover for your swimming pool so that water does not evaporate.
 - Soak dishes before washing.
 - Run the dishwasher only when full.
- We encourage our customers to use water wisely year-round. The Bayview System has an ample water supply to enable it to consistently meet its customers' demands for water. The following tips will help preserve our water supplies:

Why There May Be Contaminants in the Water

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, and wells. As water moves over land, it dissolves naturally occurring minerals and organics and can pick up substances resulting from the presence of animal or human activity. Contaminants that may be present in source waters include:

Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, livestock and wildlife.

Inorganic contaminants, such as salts and metals, which can be naturally occurring or result from storm water runoff, wastewater discharges, or farming.

Pesticides and herbicides, which may come from a variety of sources such as agriculture, storm water runoff, and residential uses.

Organic chemical contaminants, including natural, synthetic and volatile organic chemicals, which are by-products of nature and industrial processes and petroleum production and can also, come from gas stations, storm water runoff and septic systems..

Radioactive contaminants, which can be naturally occurring.

During main breaks or other system disruptions, the Middlesex Water Company - Bayview System encourages customers to boil their water, used for drinking, for one minute prior to use. This suggestion is offered to provide an extra margin of safety to our customers. This precautionary advisory is typically in effect from the time of the break, until 48 hours after service is restored. These safety suggestions may be of particular interest to people with compromised immune systems, the elderly and infants who may be more vulnerable to possible contaminants in drinking water than the general population and have special needs regarding water quality. The Company suggests that these individuals discuss the boil water safety recommendation with their health care providers, should they experience any water service disruption to their homes in the future. Based on past experience, the Company does not expect any water quality problems to be associated with main repairs. Its recommendation is simply a standard precautionary measure to better ensure the safety of its customers during distribution system and main repair work.

General Safety Suggestions Regarding Water Main Breaks

Ensuring Water Quality

In order to ensure that tap water is safe to drink, the EPA and the DEP prescribe regulations which limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration regulations establish limits for contaminants in bottled water, which must provide the same protection for public health. DEP also provides monitoring schedules and establishes sampling requirements for water utilities in order to maintain compliance with the Safe Drinking Water Act's monitoring requirements.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk.

More information about contaminants and potential health effects can be obtained by calling the **EPA's Safe Drinking Water Hotline at (800) 426-4791.**



- Public Health Protection
- The Framework for a Vibrant Economy
- Quality of Life

About the Data:

The table below shows the results of our monitoring in 2009. The EPA requires monitoring of over 100 drinking water contaminants. Those listed are the only contaminants detected. For a complete list, contact the Middlesex Water Company - Bayview System at (732) 634-1500. The presence of these contaminants in the water does not necessarily indicate that the water poses a health risk. The State requires us to monitor for certain contaminants less than once a year because the concentration of these contaminants are not expected to vary significantly from year to year.

Definitions and Abbreviations used below:

Primary standards: Standards which relate to public health. **MCLG:** Maximum Contaminant Level Goal. The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety. **MCL:** Maximum Contaminant Level. The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology. **Waiver:** State permission to reduce monitoring frequency because previous results have consistently been below the MCL. **MRDL:** Maximum Residual Disinfectant Level. The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

MRDLG: Maximum Residual Disinfectant Level Goal. The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contamination. **ppb:** Parts Per Billion. 1 part per billion corresponds to 1 minute in 2000 years or 1 penny in \$10 million. **ppm:** Parts Per Million. 1 part per million corresponds to 1 minute in 2 years or 1 penny in \$10 thousand. **N/A:** Not Applicable. **AL:** Action Level. The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow. **pCi/l:** picocuries per liter (a measure of radioactivity in water). **ug/l:** micrograms per liter. **ND:** None detectable at testing limit. **RUL:** Recommended Upper Limit.

SUMMARY OF PRIMARY DRINKING WATER STANDARDS – 2009 – BAYVIEW WATER SYSTEM

Parameter	Units	MCL	MCLG	Distribution System	Main Well Well #1	Kelba Well Well #2 (Note 1)	Major Sources in Drinking Water	MCL Violation Yes / No
INORGANIC CHEMICALS								
Sulfate (RMCL 250 ppm) (Note 1)	ppm	-	-	-	9.71	9.32	-	N/A
Lead (Note 2)	ppb	AL = 15	0	ND	-	-	Corrosion of household plumbing	No
Copper (Note 2)	ppb	AL = 1,300	1,300	18.9	-	-	Corrosion of household plumbing	No
Manganese (RMCL 0.05 ppm) (Note 1)	ppm	N/A	N/A	-	0.02	0.02	-	No
Sodium (RMCL 50 ppm) (Note 1)	ppm	N/A	N/A	-	13.0	8.2	Naturally present in the environment	No
TOTAL TRIHALOMETHANES (Note 3)								
Chloroform	ppb	80	N/A	15.22	-	-	-	No
Bromodichloromethane	ppb	-	-	1.67	-	-	By-product of drinking water chlorination	N/A
Dibromochloromethane	ppb	-	0	3.81	-	-	By-product of drinking water chlorination	N/A
Bromoform	ppb	-	60	6.56	-	-	By-product of drinking water chlorination	N/A
TOTAL HALOACETIC ACIDS (Note 3)	ppb	60	N/A	2.02	-	-	-	No
Trichloroacetic Acid	ppb	-	300	0.4	-	-	By-product of drinking water chlorination	N/A
Dibromoacetic Acid	ppb	-	-	1.62	-	-	By-product of drinking water chlorination	N/A
RADIOLOGICAL								
Radium 226 & 228 (Note 4)	pCi/l	5	0	-	ND	*1.8 - *3.2	Erosion of natural deposits	No
Gross Alpha emitters	pCi/l	15	0	-	ND	ND	Erosion of natural deposits	No
Uranium (Note 5)	ug/l	30	0	-	ND - 2**	2**	Erosion of natural deposits	No
ADDITIONAL TESTING								
Disinfectant Residuals (Note 6)	ppm	4 ppm MRDL	4 ppm MRDLG	0.16 - 0.74	0.65	0.80	Result of water disinfection	No

Note 1: Recommended Maximum Contaminant Level (RMCL). There is no MCL or MCLG.

Note 2: The concentrations for Lead and Copper are for the 90th Percentile Value. The highest level detected in 2008 was less than 2 ppb (ND) for Lead and 28.3 ppb for Copper.

Note 3: Sampling conducted in 2007. The next sample round is 2010.

Note 4: Combined MCL for Radium 226 & 228 is 5 ug/L. When the Gross Alpha is < 3 pCi/l a value of 1.5 ug/L can be substituted for Radium 226. *Used substitution method for Radium 226; used value of 1.5 ug/L. Sampling conducted in 2006. The next sampling period will be determined by the state.

Note 5: Uranium value is determined by substitution unless testing is performed, only if Gross Alpha (minus Radon) is >15 pCi/l. **By the substitution method a value of 2 ug/L is used. Sampling conducted in 2006. The next sampling period will be determined by the state.

Note 6: MRDL and MRDLG are Maximum Disinfectant (Chlorine Residual) levels set by the USEPA.

Health Effects of Detected Contaminants (Required Language)

Lead – Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.

Copper – Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's Disease should consult their personal doctor.

Sodium – For healthy individuals, the sodium intake from water is not important, because a much greater intake of sodium takes place from salt in the diet. However, sodium levels above the Recommended Upper Limit may be of concern to individuals on a sodium restricted diet.

Radium 226 & 228 – Some people who drink water containing radium 226 or 228 in excess of the MCL over many years may have an increased risk of getting cancer.

Gross Alpha emitters – Certain minerals are radioactive and may emit a form of radiation known as alpha radiation. Some people who drink water containing alpha emitters in excess of the MCL over many years may have an increased risk of getting cancer.

Monitoring Waivers

The Safe Drinking Water Act regulations allow monitoring waivers to reduce or eliminate the monitoring requirements for some compounds because previous results have consistently been below the MCL. The Middlesex Water Company – Bayview System received waivers for the following contaminants: Asbestos, Nitrites/Statewide waiver and Synthetic Organic Chemicals/Statewide waiver.

If you have any questions about this report or would like more information about your water quality, please call us at (732) 634-1500 or you may contact the Environmental Protection Agency (EPA) Safe Drinking Water Hotline at (800) 426-4791 for additional information about drinking water regulatory programs.

We invite you to become involved in decisions affecting your drinking water by sharing your comments and concerns. Please call or write to: Frank Falco, Middlesex Water Company-Bayview System P.O. Box 1500, Iselin, NJ 08830 – (732) 634-1500, Ext. 1610.

Required Additional Health Information

Special Considerations Regarding Children, Pregnant Women, Nursing Mothers, and Others

Children may receive a slightly higher amount of a contaminant present in the water than do adults, on a body weight basis, because they may drink a greater amount of water per pound of body weight than do adults. For this reason, reproductive or developmental effects are used for calculating drinking water standard if these effects occur at lower levels than other health effects of concern. If there is insufficient toxicity information for a chemical (for example, lack of data on reproductive or developmental effects), an extra uncertainty factor may be incorporated into the calculation of the drinking water standard, this making the standard more stringent, to account for additional uncertainties regarding these effects. In the cases of lead and nitrate, effects on infants and children are the health endpoints upon which the standards are based.

Important Information About Lead

About Lead in Drinking Water If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The Bayview System is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline at (800) 426-4791 or at <http://www.epa.gov/safewater/lead>

For Your Safety – A Message for People with Compromised Immune Systems

Some people may be more vulnerable to contaminants in drinking water than the general population and have special needs regarding water quality. Immuno-compromised individuals such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly and infants can be particularly at risk from infections.

These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the **EPA's Safe Drinking Water Hotline at (800) 426-4791.**

A Word of Caution

Our treatment systems are designed and operated to produce water that is in compliance with all state and federal primary drinking water standards. Many substances and microscopic organisms found in water may be a concern if they occur at high concentrations. For some contaminants, MCL levels have not been set because the EPA has not determined at what level they pose a public health risk. This is often because a reliable detection method is unavailable and/or because the contaminant is rarely found in treated water.

Some naturally occurring microscopic organisms commonly found in the natural water supplies may not be eliminated during the treatment process. This means that even a well-run system may contain low levels of microscopic organisms. The levels, however, are normally of little concern to healthy individuals. It should be noted, however, that under certain circumstances, these organisms might amplify to dangerous levels within a customer's own water supply system.

All customers, including residential, commercial and industrial customers, and other large facilities such as schools, hospitals and hotels/motels, should follow appropriate procedures for maintaining their own internal plumbing systems and appliances. If you have any concerns about these matters, please call the **EPA Safe Drinking Water Hotline at (800) 426-4791.**