Middlesex Water Company - Bayview System

ANNUAL WATER QUALITY REPORT 2020

Get To Know Your Drinking Water
This document is an annual report on the quality of water delivered by the Bayview Water System in 2020. 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.

### Our Source of Water Supply

We continued to work hard in 2020 to provide high quality drinking water to our customers in the Fortescue Beach section of Downe Township. The Middlesex Water Company-Bayview System produced 6.9 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.

### Special Notes Regarding COVID-19

While this report addresses water quality during 2020, we wanted to include information related to the current 2021 COVID-19 pandemic. Throughout the public health crisis, our dedicated team of essential employees continued to work to provide reliable water service critically important for washing hands and maintaining overall appropriate personal hygiene. According to the World Health Organization and the American Water Works Association, treatment methods like those used by our companies are sufficient to disinfect water for numerous contaminants, including COVID-19. Our crews continued to maintain treatment plants and water quality, repair main breaks and respond to customer calls all while maintaining appropriate safety measures and precautions. We also moved forward with important construction projects designed to enhance the reliability and resiliency of our water treatment and distribution systems.

When buildings and facilities are left vacant for an extended period of time, as during the pandemic, we recommend that building owners and managers seek guidance on how to prepare their facility plumbing for reoccupation. Water that has been sitting idle within plumbing systems of unoccupied or partially occupied buildings and facilities could harbor microbial and other inorganic matter which, over time of non-use, can become a health issue. MWC recommends reviewing the following resources:

Protecting the Source of Your Drinking Water

(SWAP) Source Water Assessment Program

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 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.

Susceptibility Ratings for the Middlesex Water Company - Bayview System

The table below illustrates the susceptibility ratings for each contaminant category for each source in the system. For susceptibility ratings of purchased water, refer to the specific water system’s source water assessment report.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>2 Wells</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pathogens</td>
<td>Low</td>
</tr>
<tr>
<td>Nutrients</td>
<td>Medium</td>
</tr>
<tr>
<td>Pesticides</td>
<td>Low</td>
</tr>
<tr>
<td>VOCs</td>
<td>Low</td>
</tr>
<tr>
<td>Inorganics</td>
<td>Low</td>
</tr>
<tr>
<td>Radionuclides</td>
<td>High</td>
</tr>
<tr>
<td>Radon</td>
<td>Medium</td>
</tr>
<tr>
<td>Disinfection Byproduct Precursors</td>
<td>Medium</td>
</tr>
</tbody>
</table>

Susceptibility Chart Definitions

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:

1. How sensitive the water supply is to potential contamination.
2. 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 the Source Water Assessment Program, radionuclides are more of a concern for groundwater 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, the DEP may customize (change existing) monitoring schedules based on the susceptibility ratings.

Source Water Assessment Reports and Summaries are available for public water systems at www.state.nj.us/dep/swap or by contacting the NJDEP’s Bureau of Safe Drinking Water at (609) 292-5550.

**Making Water Safe to Drink**

*About 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 passes through layers of soil and gravel prior to our wells, 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.

### What Substances May be Found in the Source Water Before it is Treated?

The sources of drinking water (both tap water and bottled water) generally include rivers, lakes, streams, ponds, reservoirs, springs and wells. As water moves over land or through the ground, it dissolves naturally occurring minerals and organics and can pick up substances resulting from the presence of animal or human activity. Substances that may be present in source waters prior to the treatment process 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**
  - 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. Can also come from gas stations, storm water runoff and septic systems.

- **Radioactive Contaminants**
  - Can be naturally occurring or may be the result of oil and gas production and mining activities.

For more information about contaminants and potential health effects, call the EPA’s Safe Drinking Water Hotline at 1-800-426-4791.
What You Should Know About Lead in Drinking Water

Recently, water quality issues related to lead in drinking water have dominated national headlines. Perhaps you are concerned if similar circumstances could be present in your own water systems?

We want you to know that water delivered by Middlesex Water Company-Bayview System is in compliance with the U.S. Environmental Protection Agency’s Lead and Cooper Rule, which sets standards for sampling for lead in drinking water.

Middlesex Water Company-Bayview System is responsible for providing high quality drinking water, but cannot control the variety of materials used in household plumbing components. If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead typically enters drinking water as a result of corrosion, or wearing away, of materials in household plumbing containing lead. While our operation monitors water quality regularly, lead plumbing fixtures still present in your home are a cause for concern. These materials include lead-based solder that in the past had been used to join copper pipe, brass and chrome-plated brass faucets, and in some cases, the service line that connects your house to the water main, if the pipe is made of lead.

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 water for drinking or cooking. If you are concerned about lead in your internal plumbing, 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 or at https://www.epa.gov/your-drinking-water/basic-information-about-lead-drinking-water.

Do I Need to Take Special Precautions?

To ensure that tap water is safe to drink, the EPA and the DEP Bureau of Safe Drinking Water prescribe regulations which limit the amount of certain contaminants in water provided by public water systems. The U.S. Food and Drug Administration regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

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 Safe Drinking Water Hotline at (800) 426-4791.

General Safety Suggestions Regarding Water Main Breaks

During main breaks or other system disruptions, the Middlesex Water Company – Bayview System may encourage customers to boil their water used for drinking. Customers should bring tap water to a rolling boil, boil for one minute, and cool before using. Boiled or bottled water should be used for drinking, making ice, washing dishes, brushing teeth, and preparing food until further notice. 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.
For Your Safety
A Message for People with Compromised Immune Systems

Although our drinking water meets all state and federal regulations, some people may be more vulnerable to contaminants in drinking water than the general population. 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 individuals 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 pathogens are available from the EPA Safe Drinking Water Hotline at (1-800 426-4791).

64,240 gallons
The amount of water used by the average American in one year. Source: Water.org

HEALTH INFORMATION
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 a 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.

A Word of Caution

Our treatment systems are designed and operated to produce water that meets all state and federal 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 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.
## ANNUAL WATER QUALITY RESULTS - 2020

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Units</th>
<th>MCL (State/Federal Standard)</th>
<th>MCLG (Ideal Goal)</th>
<th>Results</th>
<th>MCL Violation</th>
<th>Major Sources in Drinking Water</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Maximum Contaminant Level Goal. The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs are set as close to the MCLs as feasible using the best available treatment technology. MRLG: Maximum Residual Disinfectant Level Goal. The level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants. MRLGs do not reflect the benefits of the use of disinfectants to control microbial contamination. Waiver: State permission to reduce monitoring frequency because previous results have consistently been below the MCL. pCi/l: Picocuries per Liter. A measure of the radioactivity in water.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INORGANIC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fluoride (1)</td>
<td>ppm</td>
<td>4</td>
<td>4</td>
<td>0.03</td>
<td>ND - 0.13</td>
<td>No Erosion of natural deposits</td>
</tr>
<tr>
<td>Nickel (1, 2)</td>
<td>ppb</td>
<td>No MCL</td>
<td>N/A</td>
<td>4.7</td>
<td>ND - 4.7</td>
<td>No Discharge from petroleum and metal refineries; Erosion of natural deposits.</td>
</tr>
<tr>
<td>Selenium (1)</td>
<td>ppb</td>
<td>50</td>
<td>50</td>
<td>0.9</td>
<td>ND - 0.9</td>
<td>No Discharge from petroleum and metal refineries; Erosion of natural deposits.</td>
</tr>
<tr>
<td>Lead (3)</td>
<td>ppb</td>
<td>AL = 15</td>
<td>0</td>
<td>0.7</td>
<td>N/A</td>
<td>No Corrosion of household plumbing systems; Erosion of natural deposits.</td>
</tr>
<tr>
<td>Copper (5)</td>
<td>ppm</td>
<td>AL = 1.3</td>
<td>1.3</td>
<td>0.06</td>
<td>N/A</td>
<td>No Corrosion of household plumbing systems; Erosion of natural deposits.</td>
</tr>
<tr>
<td>DISINFECTION BY-PRODUCTS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Trihalomethanes</td>
<td>ppb</td>
<td>80</td>
<td>N/A</td>
<td>13</td>
<td>9 - 13</td>
<td>No By-product of drinking water disinfection</td>
</tr>
<tr>
<td>Total Haloacetic Acids</td>
<td>ppb</td>
<td>60</td>
<td>N/A</td>
<td>ND</td>
<td>N/A</td>
<td>No By-product of drinking water disinfection</td>
</tr>
<tr>
<td>ADDITIONAL TESTING</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disinfectant Residuals (Chlorine)</td>
<td>ppm</td>
<td>&gt;4 (MRDL)</td>
<td>&gt;4 (MRDLG)</td>
<td>1.0</td>
<td>0.2 - 1.0</td>
<td>No Water additive used to control microbes</td>
</tr>
</tbody>
</table>

### Definitions & 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 are set as close to the MCLs as feasible using the best available treatment technology. MRLG: Maximum Residual Disinfectant Level Goal. The level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants. MRLGs do not reflect the benefits of the use of disinfectants to control microbial contamination. Waiver: State permission to reduce monitoring frequency because previous results have consistently been below the MCL. pCi/l: Picocuries per Liter. A measure of the radioactivity in water.

**Secondary Standards (Non-Health Related):** Standards which do not relate to public health. RUL*: Recommended Upper Limit. Results are Average and Range. **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. Middlesex Water Company-Bayview System received waivers for the following contaminants: Synthetic Organic Chemicals, Asbestos and Nitrites/Statewide Waiver.

**Waivers:** State permission to reduce monitoring frequency because previous results have consistently been below the MCL. Middlesex Water Company-Bayview System received waivers for the following contaminants: Synthetic Organic Chemicals, Asbestos and Nitrites/Statewide Waiver.

**What the Numbers Mean to You:** The table shows the results of our monitoring during 2020. The EPA requires monitoring of over 100 drinking water contaminants. Those listed are the only contaminants detected. For a complete list of monitored contaminants, contact Middlesex Water Company-Bayview System at 800-549-3802. As you can see, the Middlesex Water Company-Bayview System had no MCL violations.

1: Bayview Water System is on reduced monitoring, once per three-year cycle. The listed contaminant concentrations are from 2018.
2: There is no MCL for Nickel but it must be monitored.
3: Bayview Water System is on reduced monitoring, once per three-year cycle. The listed Lead and Copper concentrations are the 90th Percentile. Results are from 2020. The next sampling will be conducted in 2023.

*RUL*: Recommended Upper Limit

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2: There is no MCL for Nickel but it must be monitored.
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*RUL*: Recommended Upper Limit
You can help

**protect drinking water!**

- Never flush unwanted or expired medicine down the toilet or drain.
- Avoid using pesticides and fertilizers.
- Pick up after your pets.
- Use and dispose of chemicals properly.

**ANNUAL WATER QUALITY REPORT**

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:

Dave Brogle
Middlesex Water Company-Bayview System
85 C Route 1 South, Suite 400
Iselin, NJ 08830
(732) 638-7657

PLEASE SHARE THIS REPORT WITH OTHERS.
Landlords, businesses, schools, hospitals, and other groups are encouraged to share this Water Quality Report with all water users at their locations.