

2009 Water Quality Report



PWSID #1225001

Your Drinking Water Meets or is Better Than State and Federal Primary Standards for Drinking Water Quality

Dear Customer,

Water is vital to life! It delivers public health protection, fire protection, quality of life and the framework for a vibrant economy. We take our role as water providers seriously and are committed to delivering a safe and reliable drinking water supply. We continue to invest in our drinking water infrastructure and provide the training our employees need to ensure quality water service 24 hours a day, 365 days a year.

The enclosed report contains information on the quality of water delivered to you in 2009. We are pleased to tell you we had no Safe Drinking Water Act violations in 2009. In addition, we completed the Unregulated Contaminant Monitoring Rule (UCMR2), which samples for contaminants that are not currently regulated. Middlesex Water samples were analyzed for 25 compounds and no detections were found. We encourage you to learn more about the quality of your drinking water by reviewing this report or viewing it online at www.middlesexwater.com. You may obtain additional information about drinking water regulatory programs by contacting the Environmental Protection Agency (EPA) Safe Drinking Water Hotline at (800) 426-4791. If you have any questions or would like to learn about opportunities for public participation in decisions about our drinking water, please call Frank Falco, Director of Production at (732) 638-7657.

Thank you for being a customer of Middlesex Water Company. We invite you to join with us in ensuring a plentiful water supply for future generations by using water wisely.

Dennis W. Doll, President and Chief Executive Officer



Water...When You Need It!

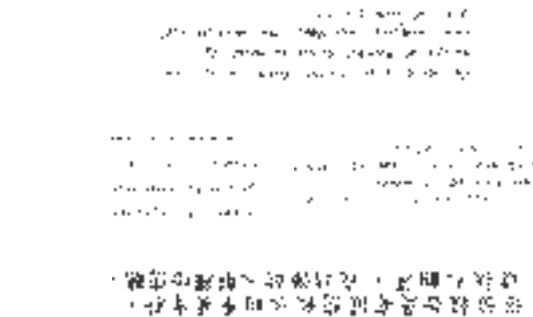
The Middlesex system produced 16.6 billion gallons of water in 2009. We utilize both surface and groundwater supplies during various times of the year and customers may receive either or a blend of both sources depending upon location and demands. Middlesex Water Company's water supplies are not fluoridated. Surface water is obtained from the Delaware and Raritan Canal (D&R Canal), which is owned by the State of New Jersey and operated by the New Jersey Water Supply Authority. This source is supplemented by supplies from the Round Valley and Spruce Run Reservoir Systems. Surface water sources provide 71 percent of the water distributed by the system. The remainder comes from our wells (23 percent) and purchased water (6 percent) from New Jersey American Water - Raritan System.

The Company obtains groundwater from its Park Avenue, Maple Avenue and Spring Lake Wellfields in South Plainfield and from its Tingley Lane Wellfields in North Edison. The Middlesex System has 31 wells, which, in 2009, produced over 3.4 billion gallons of water. Groundwater comes from an underground source of water known as the Brunswick Aquifer. Water quality is monitored at the Plant, at each wellfield, and throughout the distribution system to determine that water delivered to our consumers meets federal and state drinking water quality standards. During water emergencies, Middlesex Water Company can suspend, increase or decrease supplies from any of its sources.

Middlesex Water is in the process of modifying its treatment process from the use of chlorine gas to on-site generated liquid sodium hydrochloride. This change is being implemented as a safer alternative to existing processes.

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.

Este informe contiene información muy importante sobre su agua beber. Tradúzcalo o hable con alguien que lo entienda bien.



This report contains important information about your drinking water. If you do not understand it, please have someone translate it for you.



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Visit our website at www.middlesexwater.com

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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).

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

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.

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.

A Word of Caution

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.

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

Required Additional Health Information

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.

Susceptibility Ratings for the Middlesex Water Company 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.

Parameter	31 Wells	1 Surface Water Intake
Pathogens	Medium - 29 Low - 2	High
Nutrients	High - 10 Medium - 21	High
Pesticides	Medium - 4 Low - 27	Medium
VOCs	High - 31	Medium
Inorganics	High - 14 Medium - 17	High
Radionuclides	High - 3 Medium - 28	Low
Radon	High - 31	Low
Disinfection	High - 14	High
Byproduct Precursors	Medium - 17	

Source Water Assessment

The New Jersey Department of Environmental Protection (NJDEP) has implemented the Source Water Assessment Program, 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 to study existing and potential threats to the quality of public drinking water sources in the state is found below.

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:

- 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 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.

What the Numbers Mean to You: The table shows the results of our monitoring during 2009. We have learned through our testing that some contaminants have been detected, however, these contaminants were detected well below the levels set by the EPA to protect public health.

For a complete list of monitored contaminants, contact Middlesex Water Company at (732) 634-1500. As you can see, the Middlesex Water system had no MCL violations. The EPA has determined that your water is safe at these levels. The State requires water systems to monitor for certain contaminants less than once a year because the concentration of these contaminants is not expected to vary significantly from year to year. Therefore, some of these data may represent prior period testing that is considered representative of water quality. 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 received waivers for the following contaminants in both its surface and groundwater supplies: Synthetic Organic Chemicals and Nitrites.

ANNUAL WATER QUALITY RESULTS - 2009										
Parameter	Units	MCL (State/Federal Standard)	MCLG (Ideal Goal)	Surface Water	Groundwater North Tingley Lane/ NJ American Water	Groundwater South Tingley Lane	Groundwater Park Ave./Maple Ave./ Spring Lake	Major Sources in Drinking Water		MCL Violation Yes/No
Inorganic										
Arsenic (Note 1 & 3)	ppb	5	N/A	ND	ND	3	ND	Erosion of natural deposits		No
Barium (Note 1)	ppm	2	2	0.022	ND	0.03	0.07	Discharge from metal refineries		No
Lead (Note 2)	ppb	AL=15	0	1.0 No Samples over AL	1.0	1.0	1.0	Corrosion of household plumbing		No
Copper (Note 2)	ppm	AL=1.3	1.3	0.323 No Samples over AL	0.323	0.323	0.323	Corrosion of household plumbing		No
Nitrate	ppm	10	10	0.6	1.5	1.3	3.7	Erosion of natural deposits		No
Microbiological										
Total Coliform Bacteria	MCL: Found in >5% of samples		0	1.0%	1.0%	1.0%	1.0%	Naturally present in the environment		No
Fecal Coliform	N/A	N/A	0	ND	ND	ND	ND	Human and animal fecal waste		No
Parameter	Units	MCL (State/Federal Standard)	MCLG (Ideal Goal)	Highest Level Used For Compliance	Highest Level Used For Range	Highest Level Used For Compliance	Highest Level Used For Range	Highest Level Used For Compliance	Highest Level Used For Range	MCL Violation Yes/No
Volatile Organic Chemicals										
Trichloroethylene (Notes 3 & 4)	ppb	1	0	ND	0.1	ND-0.27	0.44	0.27-0.57	ND	No
Turbidity										
NTU's	TT (Note 5)	N/A		100%	0.03-0.28	0.004-0.30	N/A		N/A	N/A
Radiological (Note 6)										
Radium 226 & 228	pCi/l	5	0	ND	ND	ND	ND	Erosion of natural deposits		No
Beta & Photon emitters (Note 7)	pCi/l	50	0	4.9	4.9-8	8.4	7.6	Decay of natural and man-made deposits		No
Gross Alpha emitters (Note 8)	pCi/l	15	0	ND	5.7	4.5-6.9	9.3	Erosion of natural deposits		No
Uranium	ppb	30	0	ND	8.5	7-10	15.5	Erosion of natural deposits		No
Disinfection By-Products										
<i>Total Trihalomethanes</i> (Note 4)	ppb	80	N/A	35.0	10.3-106.9	35.0	ND-3.3	35.0	1.2-6.7	No
Chloroform	ppb	N/A	N/A		4.2-97.4	ND	ND		ND	No
Bromodichloromethane	ppb	N/A	0		2.9-14.9	ND	0.0-0.3		ND-0.8	No
Dibromochloromethane	ppb	N/A	60		0.5-4.5	ND-1.1	0.3-1.3		ND-2.6	No
Bromoform	ppb	N/A	0		ND-1.2	ND-2.2	0.9-2.6		0.7-5.1	No
<i>Total Haloacetic Acids</i> (Note 4)										
Monochloroacetic Acid	ppb	N/A	N/A	24.0	4.9-84.5	24.0	ND	24.0	ND	No
Dichloroacetic Acid	ppb	N/A	0		ND	ND	ND		ND	No
Trichloroacetic Acid	ppb	N/A	300		2.9-48.2	ND	ND		ND	No
Bromoacetic Acid	ppb	N/A	N/A		ND	ND	ND		ND	No
Dibromoacetic Acid	ppb	N/A	N/A		ND	ND	ND		ND	No
Additional Monitoring										
Disinfectant Residuals (Note 9)	ppm	4ppm MRDL	4ppm MRDLG	0.63	0.1-1.8	0.63	ND-1.7	0.63	ND-1.7	No
Additional contaminants for which we monitor that are currently not regulated by the EPA										
Perchlorate (Note 10)	ppb	CNR	N/A	–		3.1-4.7	ND		1.50	N/A
PFOA (Note 11)	ppb	CNR	N/A	–		0.038	0.019		–	N/A
PFOS (Note 11)	ppb	CNR	N/A	–		0.036	ND		–	N/A
PFBA (Note 11)	ppb	CNR	N/A	–		0.018	ND		–	N/A

NJ AMERICAN - Raritan System PWSID NJ2004002 - 2009

Unregulated Contaminant Monitoring Rule (UCMR-2)			
During 2009 , New Jersey American Water participated in the Unregulated Contaminant Monitoring Rule. Unregulated contaminants are those for which the EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist the EPA in determining the occurrence of unregulated contaminants in drinking water and whether regulation is warranted. For testing conducted in the Raritan System, the following substance was found.			
Contaminant	Units	Range Detected	Use or Environmental Source
N-nirtosopyrrolidine (NPYR)	ppb	ND to 0.0033	Nirtosamines can form as intermediates and byproducts in chemical synthesis and manufacture of rubber, leather, and plastics; can form spontaneously by reaction of precursor amines with nitrosamine agents (nitrate and related compounds), or by action of nitrate-reducing bacteria. Foods such as bacon and malt beverages can contain nitrosamines; there is also evidence that they form in the upper GI tract.

HEALTH INFORMATION – Health Effects of Detected Contaminants (Required Language)

Arsenic - Some people who drink water containing arsenic in excess of the MCL over many years could experience skin damage or problems with their circulatory system, and may have an increased risk of getting cancer.

Barium – Some people who drink water containing barium in excess of the MCL over many years could experience an increase in their blood pressure.

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 slicht 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.

Nitrate - Infants below the age of six months who drink water containing nitrate in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome.

Trichloroethylene - Some people who drink water containing trichloroethylene in excess of the MCL over many years could experience problems with their liver and may have an increased risk of getting cancer.

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 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.
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.

Waiver: State permission to reduce monitoring frequency because previous results have consistently been below the MCL.
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.
mrem/year: Millirems per year. A measure of radiation absorbed by the body.
N/A: Not Applicable.
ND: None Detectable at testing limit.
NR: Not Reported.
<: Less Than.
AL: Action Level. The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
CNR: Currently Not Regulated.
NTU: Nephelometric Turbidity Unit. Used to measure cloudiness in drinking water. We monitor turbidity because it is a good indicator that our filtration system is functioning properly. High turbidity can hinder the effectiveness of disinfectants.
pCi/l: Picocuries per Liter. A measure of the radioactivity in water.

Note 1: Middlesex Water Company is on reduced monitoring, once per three-year cycle. The listed Arsenic concentrations are from 2008 for all groundwater Points of Entry.

Note 2: Middlesex Water Company is on reduced monitoring, once per three-year cycle. The listed Lead and Copper concentrations are the 90th Percentile Value from 2007. The highest level detected was 6 ppb for Lead and 0.491 ppm for Copper.

Note 3: MCLs for these chemicals were set by the NJDEP below those set by the EPA.

Note 4: Compliance is based on running annual average of quarterly sampling.

Note 5: TT (Treatment Technique) - A required process intended to reduce the level of a contaminant in drinking water. The TT does not apply to groundwater.

Turbidity MCL - The Turbidity Level must be less than or equal to 0.3 ntu's in 95% of the samples taken every month and at no time exceed 1 ntu.

Note 6: North Tingley Lane/NJ American Water data is from 2005. The data for all other sites is from 2008.

Note 7: EPA considers 50 pCi/l to be the level of concern for Beta Particles.

Note 8: The Gross Alpha compliance is determined minus the Radon and Uranium contribution.

Note 9: MRDL and MRDLG are Maximum Disinfectant (Chlorine Residual) levels.

Note 10: North Tingley Lane/NJ American Water and Park Avenue were sampled in 2009, South Tingley Lane was sampled in 2008.

Note 11: PFOA (Perfluorooctanoic Acid), PFOS (Perfluorooctanesulfonic) and PFBA (Perfluorobutanoate) are a group of Perfluorinated compounds widely found in the environment. The health risk has not been determined but NJDEP has identified a guidance level of 0.040 ppb for PFOA ONLY.

What Substances May Be Found in the Source Water Before It Is Treated?

The sources of drinking water (both tap water and bottled water) 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: 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 or may be the result of oil and gas production and mining activities.

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. Middlesex Water 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 water 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 or at http://www.epa.gov/safewater/lead.

Ensuring Water Quality

To ensure that tap water is safe to drink, the EPA and the DEP Bureau of Safe Drinking Water prescribe regulations that 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**.