

2011 Annual Water Quality Report



**Hunterdon
County
Mercer
County
Middlesex
County
Morris
County
Somerset
County
Union
County
Raritan System
PWS ID: NJ2004002**

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

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

本报告与您的饮用水有关。
如果您不了解其内容，应请别人为您翻译解说。

이 보고서에는 귀하께서 사용하고 계시는 식수에 관한 정보가 들어있습니다.
민약에 이해를 못하시면 누군가에게 번역을 의뢰하십시오.

આ અહેવાલ મને તમારા પીવાના પાણી વિષે
જાણવા ની જાગૃત્તી આપવા માં આવી છે.
અનેકો અનુવાદ કરી આપવા જેને સમજાવી પડશે
તેમ તેની સાથે આત કરી



A Message from the New Jersey American Water President

To Our Valued Customer:

New Jersey American Water is proud to be your local water service provider, and I am pleased to share with you good news about the quality of your drinking water. Each year, we provide you with our Annual Water Quality Report – and like so many years prior – you’ll find that we continue to supply water that meets or surpasses all state and federal water quality regulations.

This doesn’t happen by chance. It requires having the right team of experts and technologies in place. Delivering high-quality, reliable water service to your tap around the clock also requires significant investment in our water infrastructure. In 2011 alone, we invested more than \$182 million in water system improvements statewide. From upgrading our treatment facilities to replacing aging water pipelines, we invest prudently and with purpose. And, because we invest our dollars responsibly, we provide our water for less than a penny per gallon—an exceptional value for a service that is so essential to our daily lives.

We hope you agree; it’s worth every penny and worth learning more about. Please, take the time to review this report. It provides details about the source and quality of your drinking water using the data from water quality testing conducted for your local water system from January through December 2011. For an electronic copy of this report, visit us online at www.newjerseyamwater.com.

At New Jersey American Water, our customers are our top priority, and we are committed to providing you with the highest quality drinking water and service possible now and in the years to come.

Sincerely,

David Baker
President, New Jersey American Water

About New Jersey American Water

New Jersey American Water, a wholly owned subsidiary of American Water (NYSE: AWK), is the largest investor-owned water utility in the state, providing high-quality and reliable water and/or wastewater services to approximately 2.5 million people.

About American Water

Founded in 1886, American Water is the largest investor-owned U.S. water and wastewater utility company. With headquarters in Voorhees, N.J., the company employs approximately 7,000 dedicated professionals who provide drinking water, wastewater and other related services to approximately 15 million people in more than 30 states, as well as parts of Canada. More information can be found by visiting www.amwater.com.

Partnership for Safe Water

In 2010, our surface water plant in Bridgewater (Somerset County) was awarded the prestigious "Ten-Year Director's Award" under the Partnership for Safe Water program administered by the U.S. EPA, New Jersey Department of Environmental Protection, and other water related organizations. The award honors water utilities for achieving operational excellence, by voluntarily optimizing their treatment facility operations and adopting more stringent performance goals than those required by federal and state drinking water standards.



Where Your Water Comes From

Your water comes from a public community water system consisting of 98 wells, 7 surface water intakes, 1 purchased ground water source, and 1 purchased surface water source. Water is purchased from East Windsor MUA and Newark Water Co.

Source water comes from Millstone River, Raritan River, Delaware & Raritan Canal and the following aquifers: Brunswick, Stockton, Basalt, Passaic and Glacial Drift.

Our Commitment to Quality

Once again we proudly present our annual water quality report which details the results of water quality testing completed from January to December, 2011. The purpose of this report is to raise your understanding of drinking water and awareness of the need to protect our drinking water sources. Included in this report are details about where your water comes from, what it contains, and how our water quality results compare to federal and state standards.

We are committed to delivering the best quality drinking water. To that end, we remain vigilant in meeting the challenges of source water protection, water conservation, and community education while continuing to serve the needs of all our water users.

We want you to be informed about your drinking water. For more information about this report, or for any questions relating to your drinking water, please contact our Customer Call Center toll-free at 1-800-272-1325.

Protecting Your Water Source

What is S.W.A.P.?

SWAP (Source Water Assessment Program) is a program of the New Jersey Department of Environmental Protection (NJDEP) to study existing and potential threats to the quality of public drinking water sources throughout the state.

Susceptibility Ratings for New Jersey American Water

The table below illustrates the susceptibility ratings for the seven contaminant categories (and radon) for each source in the system. The table provides the number of wells and intakes that rated high (H), medium (M), or low (L) for each contaminant category. For susceptibility ratings of purchased water, refer to the specific water system's source water assessment report.

Contaminant Categories

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 based on the susceptibility ratings.

Source water protection is a long-term dedication to clean and safe drinking water. It is more cost effective to prevent contamination than to address contamination after the fact. Every member of the community has an important role in source water protection. NJDEP recommends controlling activities and development around drinking water sources whether it is through land acquisition, conservation easements or hazardous waste collection programs. We will continue to keep you informed of SWAP's progress and developments.

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.

Susceptibility Chart Definitions

- **Pathogens:** Disease-causing organisms such as bacteria and viruses. Common sources are animal and human fecal wastes.
- **Nutrients:** Compounds, minerals and elements that aid growth, those that are both naturally occurring and man-made. Examples include nitrogen and phosphorus.
- **Volatile Organic Compounds:** Man-made chemicals used as solvents, degreasers, and gasoline components. Examples include benzene, methyl tertiary butyl ether (MTBE), and vinyl chloride.
- **Pesticides:** Man-made chemicals used to control pests, weeds and fungus. Common sources include land application and manufacturing centers of pesticides. Examples include herbicides such as atrazine, and insecticides such as chlordane.
- **Inorganics:** Mineral-based compounds that are both naturally occurring and man-made. Examples include arsenic, asbestos, copper, lead, and nitrate.
- **Radionuclides:** Radioactive substances that are both naturally occurring and man-made. Examples include radium and uranium.
- **Radon:** Colorless, odorless, cancer-causing gas that occurs naturally in the environment. For more information go to <http://www.nj.gov/dep/rpp/radon/index.htm> or call (800) 648-0394.
- **Disinfection By-product Precursors:** A common source is naturally occurring organic matter in surface water. Disinfection by-products are formed when the disinfectants (usually chlorine) used to kill pathogens react with dissolved organic material (for example leaves) present in surface water.

Sources	Pathogens			Nutrients			Pesticides			Volatile Organic Compounds			Inorganics			Radionuclides			Radon			Disinfection By-product Precursors		
	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L
Wells - 98	4	65	29	42	56			24	74	88		10	16	66	16	39	59		92	6		25	73	
GUDI - 0																								
Surface water intakes - 7	7			7			7				7		7				7			7	7			

Share This Report:

Landlords, businesses, schools, hospitals and other groups are encouraged to share this important water quality information with water users at their location who are not customers. Additional copies of this report are available by contacting customer service at 1-800-272-1325.

What is Radon?

Radon is a radioactive gas that occurs naturally in some groundwater. It may pose a health risk when the gas is released from water into air, as occurs while showering, washing dishes and performing other household activities. Radon can move up through the ground and into a home through cracks in the foundation. Compared to radon entering the home through soil, radon entering through tap water is, in most cases, a small source of radon in indoor air. Inhalation of radon gas has been linked to lung cancer; however the effects of radon ingested in drinking water are not yet clear. If you are concerned about radon in your home, tests are available to determine the total exposure level.

During testing, Radon was detected less than 100 pCi/L in our surface water supply, which makes up 90 percent of our capacity and less than 100 pCi/L to **1818 pCi/L** in our wells, which make up the other 10 percent. The EPA is developing regulations to reduce radon in drinking water. Radon in the air is inexpensive to test and easy to correct. For additional information, call the EPA's Radon Hotline at 1-800-SOS-RADON.

What's in the Source Water Before We Treat It?

In general, the sources of drinking water (both tap and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and can pick up substances resulting from the presence of animals or from human activities.

Substances that may be present in source water include:

Microbiological Contaminants: such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations or wildlife.

Inorganic Contaminants: such as salts and metals which can be naturally occurring or may result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining or farming.

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

Organic Chemical Contaminants: including synthetic and volatile organic chemicals which are by-products of industrial processes and petroleum production, and may also come from gas stations, urban 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.

For more information about contaminants and potential health effects, call the EPA's Safe Drinking Water Hotline at 1-800-426-4791.

Special Informational Statement for Lead

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. New Jersey American 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>.

Do I Need to Take Special Precautions?

To ensure that tap water is safe to drink, the U.S. EPA prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. 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 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 1-800-426-4791.

The EPA and the Center for Disease Control guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium*, *Giardia* and other microbial pathogens are available from the Safe Drinking Water Hotline (1-800-426-4791).

Cryptosporidium

Cryptosporidium is a microbial pathogen found in surface water throughout the US. Although *Cryptosporidium* can be removed through commonly-used filtration methods, US EPA issued a new rule in January 2006 that requires systems with higher *Cryptosporidium* levels in their source water to provide additional treatment. New Jersey American Water monitored for *Cryptosporidium* in its raw and delivered water in 2006. Sample results do not show a need to provide additional treatment.

LESS THAN A PENNY

Did you know that you pay less than a penny for a gallon of tap water?

We invest millions of dollars each year in our treatment and distribution facilities to ensure that you receive quality, reliable water service around the clock. At the same time, you pay less than a penny per gallon. For most customers, the water bill is the lowest utility bill they pay each month.

That's an exceptional value.

WE CARE ABOUT WATER. IT'S WHAT WE DO.

How to Contact Us

Thank you... for allowing us to continue to provide your family with quality drinking water this year. We ask that all our customers protect our water sources. Please call our Customer Call Center toll-free at 1-800-272-1325 if you have questions.

New Jersey American Water
1025 Laurel Oak Road
Voorhees, NJ 08043
www.amwater.com

Water Information Sources

**New Jersey Department of Environmental Protection,
Bureau of Safe Drinking Water:**
(609) 292-5550 · www.state.nj.us/dep

New Jersey Board of Public Utilities:
(973) 648-2350 · Two Gateway Center, Newark, NJ 07102

Division of Customer Relations:
1-800-624-0241 · www.state.nj.us/bpu

US Environmental Protection Agency
www.epa.gov/safewater
Safe Drinking Water Hotline:
1-800-426-4791

American Water Works Association
www.awwa.org

Centers for Disease Control and Prevention
www.cdc.gov

How Do I Read the Table of Detected Contaminants?

Starting with the **Contaminant**, read across from left to right. A "Yes" under **Compliance Achieved** means the amount of the substance met government requirements. The column marked **MCLG, Maximum Contaminant Level Goal**, is 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. The shaded column marked **MCL, Maximum Contaminant Level**, is 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. The shaded column marked **Range** shows the highest and lowest test results for the year. The column marked **Highest Level Detected** shows the highest test results during the year. **Major Sources in Drinking Water** shows where this substance usually originates. Compare the Range values with the MCL column. To be in compliance, the Maximum Detected Level must be lower than the MCL standard.

Footnotes and the definitions below will help you interpret the data presented in the Table of Detected Contaminants.

90th Percentile Value: Of the samples taken, 90 percent of the values of the results were below the level indicated in the table.

Action Level: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

MRDL (Maximum Residual Disinfectant Level): The highest level of 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 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.

NA: not applicable

Nephelometric Turbidity Units (NTU): Measurement of the clarity, or turbidity, of the water.

None Detected (ND): Laboratory analysis indicates that the constituent is not present.

Parts per Billion (ppb): Corresponds to one part substance in one billion parts of water.

Parts per Million (ppm): Corresponds to one part substance in one million parts of water.

Picocuries per Liter (pCi/L): A measure of the radioactivity in water.

RUL: Recommended Upper Limit.

Treatment Technique (TT): A required process intended to reduce the level of a contaminant in drinking water.

Water Quality Facts

The data presented in the Table of Detected Contaminants is the same data collected to comply with U.S. Environmental Protection Agency and New Jersey state monitoring and testing requirements.

To assure high quality water, individual water samples are taken each year for chemical, physical and microbiological tests. Tests are completed on water taken at the source, from the distribution system after treatment and, for lead and copper monitoring from the customer's tap. Testing can pinpoint a potential problem so that preventive action may be taken.

The Safe Drinking Water Act regulations allow monitoring waivers to reduce or eliminate the monitoring requirements for asbestos, volatile organic chemicals, and synthetic organic chemicals. Our system has received monitoring waivers for asbestos and synthetic organic chemicals.

Vulnerable Populations Statement

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons 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 pathogens are available from the Safe Drinking Water Hotline (1-800-426-4791).

Water Quality Results

Table of Detected Contaminants – 2011

Regulated Substances								
Contaminant	Unit	MCL	MCLG	Highest Level Detected	Range	Compliance Achieved	Major Sources in Drinking Water	
Microbiological Contaminants								
Total Coliform Bacteria	positive monthly samples	5%	0	1.4% ¹	NA	Yes	Naturally present in the environment	
Turbidity								
Turbidity ²	NTU	TT = 1 NTU	NA	0.3		Yes	Soil runoff	
		TT = percent of samples < 0.3 NTU	NA	99%		Yes		
Treatment By-products Precursor Removal								
Total Organic Carbon	ppm	TT	NA	3	1 - 3	Yes	Naturally present in the environment	
Disinfectants								
Chloramines ³	ppm	MRDL = 4 ppm	MRDLG = 4	1.1	0.6 - 1.6	Yes	Water additive used to control microbes	
Disinfectant By-products								
Total Trihalomethanes (TTHM)	ppb	80	NA	36 ⁴	3 - 99	Yes	By-product of drinking water disinfection	
Five Haloacetic Acids (HAA5)	ppb	60	NA	16 ⁴	0 - 74	Yes	By-product of drinking water disinfection	
Organic Contaminants								
Dichloromethane	ppb	1	0	1.5 ⁵	ND - 1.5	Yes	Discharge from pharmaceutical and chemical factories	
Trichloroethylene	ppb	1	0	1.1 ⁵	ND - 1.1	Yes	Discharge from metal degreasing sites and other factories	
Inorganic Contaminants								
Antimony	ppb	6	0	0.8	ND - 0.8	Yes	Discharge from petroleum refineries; Fire retardants; Ceramics; Electronics; Solder	
Arsenic	ppb	5	0	2	ND - 2	Yes	Erosion of natural deposits	
Barium	ppm	2	2	0.3	ND - 0.3	Yes	Erosion of natural deposits	
Beryllium	ppb	4	4	0.8	ND - 0.8	Yes	Discharge from metal refineries and coal-burning factories; Discharge from other industries	
Fluoride ⁶	ppm	4	4	1.2	ND - 1.2	Yes	Erosion of natural deposits; Water additive that promotes strong teeth	
Nickel	ppb	NA	NA	7	ND - 7	Yes	Erosion of natural deposits	
Nitrate ⁷	ppm	10	10	5	ND - 5	Yes	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits	
Thallium	ppb	2	1	0.8	ND - 0.8	Yes	Leaching from ore-processing sites; Discharge from electronics, glass and drug factories	
Radiological Contaminants								
Alpha emitters ^{8,9}	pCi/L	15	0	14.5	ND - 21	Yes	Erosion of natural deposits	
Combined Radium 226 and 228	pCi/L	5 ⁸	0	1.1	ND - 1.1	Yes	Erosion of natural deposits	
Tap water samples were collected for lead and copper analysis from homes in the service area.								
Lead and Copper ¹⁰	Unit	Action Level ¹¹	MCLG	Number of Samples	90th Percentile ¹²	Number of Samples Above Action Level	Compliance Achieved	Major Sources in Drinking Water
Lead (2010)	ppb	15	0	51	5	3	Yes	Corrosion of household plumbing systems
Copper (2010)	ppm	1.3	1.3	51	0.5	0	Yes	Corrosion of household plumbing systems; Erosion of natural deposits

¹ Maximum percentage of positive samples collected in any one month.

² 99% of the turbidity readings were below the treatment technique requirement of 0.3 NTU. Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of water quality. High turbidity can hinder the effectiveness of disinfectants.

³ Highest level detected is the maximum quarterly average. Range indicates the monthly averages detected.

⁴ Highest level detected is the running annual average. Compliance is based on running annual average and range indicates the values detected of all sampling points.

⁵ Some people who drink water containing this compound in excess of MCL over many years could have problems with their liver, and may have an increased risk of getting cancer. Compliance is determined on annual average.

⁶ Fluoride is added to the water at therapeutic levels (0.6 - 0.8 ppm) in certain areas. Please call us for more information about fluoride levels in your area.

⁷ Nitrate in drinking water at levels above 10 ppm is a health risk for infants of less than six months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant, you should ask for advice from your health care provider.

⁸ Some people who drink water containing alpha emitters or radium 226 or 228 in excess of the MCL over many years may have an increased risk of getting cancer. Radium 226 and Radium 228 have a combined MCL of 5 pCi/L.

⁹ Highest level detected is the highest quarterly average. Range indicates the values detected of all sampling points.

¹⁰ The state allows us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of our data, though representative, are more than one year old.

¹¹ Action Level: The concentration of a contaminant which, if exceeded, triggers a treatment technique or other requirement, which a water system must follow.

¹² Ninety percent of the samples tested below the indicated value.

Secondary Contaminants

Contaminant	Unit	Recommended Upper Limit	Range	Maximum Level Detected	Typical Source
Manganese ¹	ppm	0.05	ND - 0.1	0.1	Erosion of natural deposits
Sodium ²	ppm	50	10 - 62	62	Erosion of natural deposits

¹ The recommended upper limit for manganese is based on staining of the laundry. Manganese is an essential nutrient, and toxicity is not expected from levels which would be encountered in drinking water.

² 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.

Unregulated Contaminant Monitoring Rule

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 substances were found.

Contaminant	Units	NJDEP Guidance Level	Highest Level Detected	Range Detected	Use or Environmental Source
Perfluorooctanoic Acid (PFOA)	ppb	0.04	0.049	ND to 0.049	PFOA is a man-made chemical used in the manufacture of fluoropolymers. With non-stick and stain-resistant properties, fluoropolymers have wide application in common household products such as cookware, carpet and all-weather clothing. There is currently no regulatory limit established for PFOA in drinking water. However, in February 2007 the NJ Dept. of Environmental Protection (NJDEP) issued a preliminary guidance level of 0.04 ppb. In order to assist the NJDEP in assessing the occurrence of this substance in NJ, New Jersey American Water began to monitor for PFOA in some of its systems. We are sharing the results in this report because we want to educate our customers about the quality of their drinking water. This proactive approach reinforces our continuing commitment to protect public health and provide quality drinking water and reliable service. For more information on PFOA, contact NJDEP Bureau of Safe Drinking Water at (609) 292-5550.
Hexavalent Chromium	ppb	NA	0.99	0.08 to 0.99	Major sources of hexavalent chromium (chromium-6) in drinking water are discharges from steel and pulp mills, and erosion of natural deposits of chromium-3. Hexavalent Chromium is not currently regulated as an individual substance. NJ American Water voluntarily performed this monitoring based on recommendations from USEPA. For more information on Hexavalent Chromium (Chromium 6), please visit our web site.
N-nitrosopyrrolidine (NPYR)	ppb	NA	0.0033	ND to 0.0033	Nitrosamines can form as intermediates and by-products in chemical synthesis and manufacture of rubber, leather, and plastics; can form spontaneously by reaction of precursor amines with nitrosating 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.