



**SOURCE WATER ASSESSMENT REPORT & SUMMARY**

New Jersey Department of Environmental Protection (NJDEP) has completed and issued the Source Water Assessment Report and Summary for this public water system, which is available at [www.state.nj.us/dep/swap](http://www.state.nj.us/dep/swap) or by contacting NJDEP's Bureau of Safe Drinking Water at (609) 292-5550. You may also contact your public water system to obtain information regarding your water system's Source Water Assessment.

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# 2016 WATER QUALITY REPORT

**OUR MISSION CONTINUES**

We are pleased to present to you this year's Annual Drinking Water Quality Report. This report is designed to inform you about the quality water and services we deliver to you every day.

Our constant goal is to provide you with a safe and dependable supply of drinking water. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources. We are committed to ensuring the quality of your water.



Water Main Work at Cross Street & Cottage Place

**SUBSTANCES THAT COULD BE IN WATER**

In order to ensure that tap water is safe to drink, the Environmental Protection Agency (EPA) prescribes 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.

The sources of drinking water (both tap water 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, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity. Contaminants that may be present in include:

- Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- Inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas projection, 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 can also come from gas stations, urban storm water runoff, and septic systems.
- Radioactive contaminants which can be naturally occurring or be the result of oil and gas production and mining activities.

**WHAT'S THE SOURCE OF MADISON'S DRINKING WATER?**

Our water source is wells, which draw groundwater from the Buried Valley Aquifer System. The capacity of the wells ranges from 1.1 million gallons per day (MGD) to 1.9 MGD. The wells discharge into a system of underground piping which also involve two water tanks. The Madison Avenue tank holds 500,000 gallons and the Midwood Terrace tank holds 750,000 gallons.

**SOURCE WATER ASSESSMENT REPORTS**

The New Jersey Department of Environmental Protection (NJDEP) prepares Source Water Assessment Reports and Summaries for all public water systems. Further information on the Source Water Assessment Program can be obtained by logging onto NJDEP's source water assessment web site at [www.state.nj.us/dep/swap](http://www.state.nj.us/dep/swap) or by contacting NJDEP's Bureau of Safe Drinking Water at (609) 292-5550. You may also contact your public water system at 973-593-3092.

**QUESTIONS?**

If you have any questions about this report or concerning your water utility, please contact Tom DeBiase at 973-593-3092. We want our valued customers to be informed about their water utility. If you want to learn more, please attend any of our regularly scheduled Borough Council meetings at Borough Hall. Meetings are held on the 2nd and 4th Mondays of each month.

## CONCERNS ABOUT 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.

The Borough of Madison is responsible for providing high quality drinking water, but cannot control the variety of materials used in private plumbing components. The Borough tests for lead on a regular basis and has confirmed that Madison does not have elevated lead readings in its public water supply. 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 is available from the Safe Drinking Water Hotline or at <http://www.epa.gov/safewater/lead>.

## EPA REGULATIONS

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 regulations, contaminants, and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline at 1-800-426-4791.

## CONTAMINATION RISKS

**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 from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbiological contaminants are available from the Safe Drinking Water Hotline (800-426-4791).**

The Madison treatment facility removes Volatile Organic Compounds. Volatile results are pre-treatment; no chemicals have been added.																								
TABLE A	Pathogens			Nutrients			Pesticides			Volatile Organic Compounds			Inorganics			Radionuclides			Radon			Disinfection Byproduct Precursors		
	Sources	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L	H	M	L		
Wells – 5		2	3	5					5	4		1	2	3		3	2		5			2	3	
GUDI – 0																								
Surface water Intakes – 0																								

### 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, that are both naturally occurring and man-made. Examples include nitrogen and phosphorus.
- 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.
- Volatile Organic Compounds:** Man-made chemicals used as solvents, degreasers, and gasoline components. Examples include benzene, methyl tertiary butyl ether (MTBE), and vinyl chloride.
- 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 Byproduct Precursors:** A common source is naturally occurring organic matter in surface water. Disinfection byproducts are formed when the disinfectants (usually chlorine) used to kill pathogens react with dissolved organic material (for example, leaves) present in surface water.

## THE SAFE WATER DRINKING ACT

We constantly monitor the water supply for various contaminants. We have detected radon in the finished water supply in 5 out of 5 samples tested. Range = 2.2 - 3.0 pCi/L. There is no federal regulation for radon levels in drinking water. Exposure to air transmitted radon over a long period of time may cause adverse health effects.

**We at the Borough of Madison work hard to provide top quality water to every tap. We ask that all our customers help us protect our water sources, which are the heart of our community, our way of life and our children's future. Please call our office if you have questions.**

### TABLE A SUSCEPTIBILITY RATINGS: MADISON WATER DEPARTMENT SOURCES

The following table (A) 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.

The seven contaminant categories are defined following the table. 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.

### TABLE B TEST RESULTS

The Madison Borough Water Department routinely monitors for contaminants in your drinking water according to Federal and State laws. The following table shows the results of our monitoring for the period of January 1st to December 31st, 2015. 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.

### MADISON WATER DEPT. PWSID #1417001

Madison Water Department is a public community water system consisting of 5 wells, 0 wells under the influence of surface water, and 0 surface water intake (s).

Also, if applicable, 4 purchased surface and ground water sources, 2 ground water sources, and 2 surface/ground water mix. This system's source water comes from the following aquifer(s) and/or surface water body(s) (if applicable): Chatham Valley water aquifer system.

This system purchases water from the following water system(s) (if applicable): Florham Park Water Dept., Morris County MUA, Chatham Water Dept., NJ American Water Company Short Hills.

### TABLE B Definitions

- AL (Action Level):** The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.
- 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.
- 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.
- Maximum Residual Disinfectant Level (MRDL):** 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.
- Maximum Residual Disinfectant Goal (MRDLG):** The level of a drinking water disinfectant below which there is no or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contamination.

### TABLE B

Test Results					
CONTAMINANT	VIOLATION (Y/N)	LEVEL DETECTED	MCLG	MCL	LIKELY SOURCE OF CONTAMINANT
<b>Coliform</b> Test Results Yr. 2015	N	0	0		Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, bacteria may be present.
Radioactive Contaminants					
<b>Alpha Emitters</b> Test Results Yr. 2014					
Well A	N	1.65 pCi/L	0	15	Erosion of Natural Deposits
Well E	N	1.37 pCi/L	0	15	Erosion of Natural Deposits
<b>Radium 228</b> Test Results Yr. 2014					
Well A	N	0.87 pCi/L	0	5	Erosion of Natural Deposits
Well E	N	0.55 pCi/L	0	5	Erosion of Natural Deposits
Inorganic Contaminants					
<b>Arsenic</b> Test Results Yr. 2014	N	Range: 1.08-1.60 ppb Highest level: 1.60 ppb	n/a	50	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
<b>Iron</b> Test Results Yr. 2015	N	<0.1 ppm	0.05	0.3	Natural Deposits
<b>Manganese</b> Test Results Yr. 2015	N	<0.0005 ppm	0.01	0.05	Erosion of Natural Deposits
<b>Barium</b> Test Results Yr. 2014	N	Range: 0.022-0.036 ppm Highest level: 0.036 ppm	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
<b>Fluoride</b> Test Results Yr. 2014	N	Range: 0.07-0.08 ppm Highest level: 0.08 ppm	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
<b>Copper</b> Test Results Yr. 2015	N	0.09 ppm No samples exceeded the action level	1.3	AL: 1.3	Corrosion of household plumbing systems
<b>Lead</b> Test Results Yr. 2015	N	7.0 ppb No samples exceeded the action level	0	AL: 15	Corrosion of household plumbing systems; erosion of natural deposits
<b>Nitrate</b> (as Nitrogen) Test Results Yr. 2015	N	Range: 1.55-1.95 ppm Highest level: 1.95 ppm	10	10	Runoff from fertilizer use; leaching from septic tanks; sewage; erosion or natural deposits
Volatile Organic Compounds					
<b>TTHM</b> (total trihalomethanes) Test Results Yr. 2015	N	Range: ND-12.4 ppb Highest Avg.: 8.0 ppb	n/a	80	By-product of drinking water disinfection
<b>HAA5</b> (haloacetic acids) Test Results Yr. 2015	N	Range: ND-11.48 ppb Highest Avg.: 5.0 ppb	n/a	60	By-product of drinking water disinfection
Unregulated Contaminants					
UCMR3, Test Results Yr. 2013		HIGHEST LEVEL DETECTED			
<b>Chlorate</b>	N	44 ppb	n/a	n/a	Unregulated contaminant monitoring
<b>Chromium</b>	N	2.1 ppb	n/a	n/a	Unregulated contaminant monitoring
<b>Hexavalent Chromium</b> (Dissolved)	N	2.3 ppb	n/a	n/a	Unregulated contaminant monitoring
<b>Strontium</b>	N	260 ppb	n/a	n/a	Unregulated contaminant monitoring
<b>Vanadium</b>	N	3.8 ppb	n/a	n/a	Unregulated contaminant monitoring
<b>1,4-Dioxane</b>	N	0.319 ppb	n/a	n/a	Unregulated contaminant monitoring

Regulated Disinfectants	Level Detected (Average & Highest Detect)	MRDL	MRDLG
Chlorine	0.15 Average 0.5 High	4.0 ppm	4.0 ppm

- Radioactive Contaminants:** can be naturally occurring or may be the result of oil and gas production and mining activities.
- 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.
- Volatile Organic Compounds:** Man-made chemicals used as solvents, degreasers, and gasoline components.
- Unregulated Contaminants:** are those for which the EPA has not established drinking water standards.
- Non-Detects (ND):** laboratory analysis indicates that the constituent is not present.
- Parts per million (ppm)** or Milligrams per liter (mg/l) - one part per million corresponds to one minute in two years or a single penny in \$10,000.
- Parts per billion (ppb):** or Micrograms per liter - one part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.
- Picocuries per liter (pCi/L):** picocuries per liter is a measure of the radioactivity in water.
- Treatment Technique (TT):** A treatment technique is a required process intended to reduce the level of a contaminant in drinking water.