

# Greenwich Township Water Department

PWS ID# 0807001

## Annual Drinking Water Quality Report

For the Year 2016

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.

The New Jersey Department of Environmental Protection (NJDEP) has completed and issued the Source Water Assessment Report and Summary for this public water system. 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.

The Source Water Assessment performed on our four sources determined the following:

### Greenwich Township Water Department – PWSID # 0807001

The Greenwich Township Water Department is a public community water system consisting of 3 wells. This system source water comes from the middle Potomac-Raritan-Magothy aquifer.

#### Susceptibility Ratings for Greenwich Township Water Department Sources

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. The seven-contaminant categories are defined following the susceptibility table.

**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.

Sources	Pathogens			Nutrients			Pesticides			Volatile Organic			Inorganics			Radio-nuclides			Radon			Disinfection Byproduct			
	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 - 3			3	3				2	1	3			2	1		3				3			1	2	
GUDI - 0																									
Surface water intakes - 0																									

**Pathogens:** Disease-causing organisms such as bacteria and viruses. Common sources are animal and human wastes.

**Nutrients:** Compounds, minerals and elements that aid growth, 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 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.

**If you have any questions about this report or concerning your water utility, please contact The Department of Public Works at (856) 224-0373. 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 Township Council meetings. Meetings are held in the Municipal Court Room on the third Monday of each month at 7:00 p.m.**

The Township of Greenwich Water Department routinely monitors for contaminants in your drinking water according to federal and state laws. This table shows the results of our monitoring for the period of January 1 to December 31, 2015. The state allows us to monitor for some contaminants less often than once per year because the concentrations do not change frequently. Consequently some of our data, though representative, is more than one year old. EPA requires monitoring for over 80 drinking water contaminants. Those contaminants listed in the table are the only contaminants that have been detected. Please note that in 2015 the Water Department was out of compliance for Volatile Organics Monitoring and Sodium Monitoring for one of our treatment plants (TP004014). To be in compliance there should have been quarterly monitoring in 2015 but instead samples were taken in the 1<sup>st</sup>, 2<sup>nd</sup> & 4<sup>th</sup> quarters but none were taken in the 3<sup>rd</sup> quarter.

#### **DEFINITIONS**

**On the enclosed tables you will find many terms and abbreviations you might not be familiar with. To help you better understand these terms, we've provided the following definitions:**

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 (ug/l) - one part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.

Pico curies per liter (pCi/L) - Pico curies per liter is a measure of the radioactivity in water.

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

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

Maximum Contaminant Level (MCL) - The "Maximum Allowed" (MCL) 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.

Maximum Contaminant Level Goal (MCLG) -The "Goal"(MCLG) 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.

Secondary Maximum Contaminant Level (SMCL) - Substances that do not have an impact on health. Secondary Contaminants affect aesthetic qualities such as odor, taste or appearance. Secondary standards are recommendations, not mandates.

Recommended Upper Limit (RUL) – Recommended maximum concentration of secondary contaminants. These reflect aesthetic qualities such as odor, taste, or appearance. RULs are recommendations, not mandates

<b>Detect Table</b>						
<b>Contaminant</b>	<b>Violation Y/N</b>	<b>Level Detected</b>	<b>Units of Measurement</b>	<b>MCLG</b>	<b>MCL</b>	<b>Likely Source of Contamination</b>
<b>Inorganic Contaminants: 2015</b>						
Arsenic	NO	Range= 0.26 to 0.4 Avg. = 0.33	ppb	0	5	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
Barium	NO	Range= 0.0032 to 0.0586 Avg. = 0.0309	ppm	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Cadmium	NO	Range= < 0.02 to 0.18 Avg. = < 0.1	ppb	5	5	Corrosion of galvanized pipes; erosion of natural deposits; discharge from metal refineries; runoff from waste batteries and paints
Nitrate (as Nitrogen)	NO	Range= 1.4 to 3.45 Avg. = 2.43	ppm	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
<b>Lead &amp; Copper: 2015</b>						
Copper	NO	Range= 0.0087 to 0.127 90 <sup>th</sup> percentile = 0.0666	ppm	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits
Lead	NO	Range= 0.00004 to 0.0028 90 <sup>th</sup> percentile = 0.00068	ppm	0	AL=0.015	Corrosion of household plumbing systems, erosion of natural deposits
<b>Disinfection Byproducts: 2015</b>						
Total Trihalomethanes (TTHMs)	NO	Range = 22.6 to 27.5 Avg. = 25.05	ppb	0	80	By-product of drinking water chlorination
Five halo acetic acids(HAA5)	NO	Range = ND to 7.48 Avg. = 3.74	ppb	0	60	By-product of drinking water chlorination
<b>Radioactive Contaminants: 2015</b>						
Alpha emitters	NO	Range = < 3 to < 3 Avg. = < 3	pCi/l	0	15	Erosion of natural deposits
Combined radium 226 & 228	NO	Range = 1.5 to 1.5 Avg. = 1.5	pCi/l	0	5	Erosion of natural deposits
<b>Secondary Contaminants: Not enforceable. May adversely affect the aesthetic quality of water, such as taste, odor, color, appearance etc.</b>					<b>SMCL</b>	<b>Likely Source of Contamination</b>
Alkalinity	NO	Range = 24.8 to 92.7 Avg. = 58.75	ppm	---	---	Erosion of natural deposits
Fluoride	NO	Range = <0.035 - 0.283 Avg. = <0.159	ppm	---	4	Erosion of natural deposits
Chloride	NO	Range = 51 to 69.4 Avg. = 59.84	ppm	---	250	Erosion of natural deposits
Sodium	NO	Range = 40.9 to 137 Avg. = 103.9	ppm	---	50	Erosion of natural deposits
Hardness	NO	Range = 48.5 – 52.3 Avg. = 50.4	ppm	---	50 – 250	Erosion of natural deposits
Iron	NO	Range = 0.0026 to 0.158 Avg. = 0.059	ppm	---	0.3	Erosion of natural deposits
Nickel	NO	Range = 0.00048 to 0.0056 Avg. = 0.00304	ppm	---	0.3	Erosion of natural deposits
Sulfate	NO	Range = 24.2 to 273 Avg. = 148.6	ppm	---	250	Erosion of natural deposits
Total Dissolved Solids	NO	Range = 254 – 477 Avg. = 365.5	ppm	---	500	Erosion of natural deposits

**As you can see by the table, our system had no violations. We're proud that your drinking water meets or exceeds all Federal and State requirements. We have learned through our monitoring and testing that some constituents have been detected. The EPA has determined that your water IS SAFE at these levels.**

## **ADDITIONAL INFORMATION**

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 received monitoring waivers for asbestos and synthetic organic chemicals.

### **Health Effects of Detected Contaminants:**

- (1) 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.
- (2) Barium. Some people who drink water containing barium in excess of the MCL over many years could experience an increase in their blood pressure.
- (3) Cadmium. Some people who drink water containing cadmium in excess of the MCL over many years could experience kidney damage.
- (4) 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.
- (5) 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.
- (6) 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.
- (7) TTHMs [Total Trihalomethanes]. Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer.
- (8) 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.
- (9) Combined 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.
- (10) 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 a concern to individuals on a sodium restricted diet.

### **Vulnerable Populations**

**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 microbiological contaminants are available from the Safe Drinking Water Hotline (800-426-4791).**

**MCLs' are set at very stringent levels. To understand the possible health effects described for many regulated contaminants, a person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect.**

### **Special Considerations Regarding Children, Pregnant Woman, 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 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, thus 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 health endpoints upon which the standards are based.

**Nitrate:** 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.

**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 Paulsboro Water Department 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 is available from the Safe Drinking Water Hotline (1-800-426-4791) or <http://www.epa.gov/safewater/lead>.

**All sources of drinking water are subject to potential contamination** by substances that are naturally occurring or man-made. These substances can be microbes, inorganic or organic chemicals and radioactive substances. All 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 Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791.

**Source contaminants:**

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 source water 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 discharge, 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 byproducts 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.

In order to ensure that the tap water is safe to drink, 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.

**We 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.**