

WASHINGTON TOWNSHIP MUNICIPAL UTILITIES AUTHORITY

• WASTEWATER TREATMENT • PUBLIC WATER SUPPLY •

Drinking Water Quality Report 2017 Report for Test Results from 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 of 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. Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

We are pleased to report that our drinking water is safe in accordance with federal & state requirements.

WHERE DOES MY WATER COME FROM?

The Washington Township MUA operates two separate water systems which supply water to portions of the township. The map illustrates the location of the water systems that are operated by the MUA. All of the water supplied to our customers currently comes from a total of thirteen wells.

DEFINITIONS

In this report you will find many terms and abbreviations you might not be familiar with. To help you better understand these terms, we have 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 - 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.

Action Level (AL) - 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 - 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.

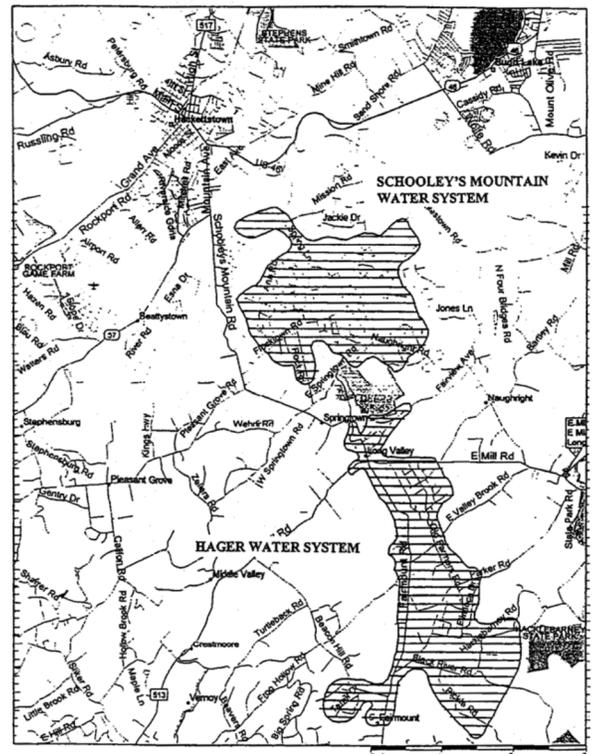
Maximum Contaminant Level Goal -The "Goal" (MCLG) is the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety. **MCL's are set at very stringent levels. To understand the possible health effects described for many regulated constituents, a person would have to drink 2 liters of water every day at the MCL level for seventy years to have a one-in-a-million chance of having the described health effect.**

Recommended Upper Limit - (RUL) Recommended maximum concentration of secondary contaminants. RUL's are recommendations, not mandates.

Secondary Contaminant - 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.

MONITORING OF THE WATER

The Washington Township MUA routinely monitors for constituents in your drinking water according to Federal and State laws. 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 a monitoring waiver for asbestos.



SPECIAL CONSIDERATIONS

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).

SUBSTANCES TO BE EXPECTED IN DRINKING WATER

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. It can also 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 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 byproducts of industrial processes and petroleum production. They 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 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.

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.

ADDITIONAL TREATMENT

To ensure the continued quality of our water, we treat it in several ways. All water sources are treated with chemicals to adjust the natural pH of the water and provide disinfection of the source water. We also treat the water supplied to a portion of the Schooley's Mountain water system with polyphosphate to sequester iron and manganese to prevent dirty water and staining of laundry.

RADON

In addition to monitoring for the constituents required by federal and state regulations, we monitored for radon in our source water supplies during 2006. We detected radon in the finished water supply at all but one of our source water supplies. The results are included in the Table of Non-Regulated Substances. There is no federal regulation for radon levels in drinking water. Of greater concern than the radon in the concentrations detected in the MUA's source water supplies is the radon detected in indoor air. Radon entering the home through tap water will in most cases be a small source of radon in indoor air. Exposure to air transmitted radon over a long period of time may cause adverse health effects. If you are concerned about radon in your home, test the air in your home. Testing is inexpensive and easy. The Washington Township Health Department has radon test kits for purchase. You can contact them at 908-876-3650. For additional information, call the EPA's Radon Hotline (800-SOS-RADON) or NJDEP Radon Section (800-648-0394).

WHAT'S IN MY WATER

The tables below show the results of our monitoring. 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, is more than one year old. 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.

QUESTIONS?

If you have any questions about this Report or concerning your water utility, please contact the WTMUA at 908-876-3145. If you want to learn more, please visit our web site at www.wtmua.org or attend any of our regularly scheduled WTMUA meetings at 46 East Mill Road, Long Valley. Meetings are mostly held on the first Wednesday of each month at 7:30 p.m. A complete meeting schedule is posted on our website and the bulletin board outside the offices at 46 East Mill Rd.

SCHOOLEY'S MOUNTAIN TEST RESULTS (PWS ID #NJ1438004)

Contaminant	Violation Y/N	Level Detected	Units of Measurement	MCLG	MCL	Likely Source of Contamination
Radioactive Contaminants						
Combined Radium 228 & 226 Test results Yr. 2012	N	Range = ND – 1.1 Highest detect = 1.1	pCi/l	0	5	Erosion of natural deposits
Inorganic Contaminants						
Arsenic Test results Yr. 2015	N	Range = ND – 0.8 Highest detect = 0.8	ppb	N/A	5	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
Barium Test results Yr. 2015	N	Range = 0.01 – 0.05 Highest detect = 0.05	ppm	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Beryllium Test results Yr. 2015	N	Range = ND – 0.05 Highest detect = 0.05	ppb	4	4	Discharge from metal refineries and coal-burning factories; discharge from electrical, aerospace, and defense industries
Cadmium Test results Yr. 2015	N	Range = ND – 0.2 Highest detect = 0.2	ppb	5	5	Corrosion of galvanized pipes; erosion of natural deposits; discharge from metal refineries; runoff from waste batteries & paints
Chromium Test results Yr. 2015	N	Range = ND – 2.6 Highest detect = 2.6	ppb	100	100	Discharge from steel and pulp mills; erosion of natural deposits
Copper Result at 90 th Percentile Test results Yr. 2015	N	0.46 No samples exceeded the action level	ppm	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits
Fluoride Test results Yr. 2015	N	Range = ND – 0.2 Highest detect = 0.2	ppm	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Lead Result at 90 th Percentile Test results Yr. 2015	N	2.8 No samples exceeded the action level	ppb	0	AL=15	Corrosion of household plumbing systems, erosion of natural deposits
Mercury (inorganic) Test results Yr. 2015	N	Range = ND – 0.1 Highest detect = 0.1	ppb	2	2	Erosion of natural deposits; discharge from refineries and factories; runoff from landfills; runoff from cropland
Nickel Test results Yr. 2015	N	Range = 0.5 – 2.0 Highest detect = 2.0	ppb	N/A	N/A	Erosion of natural deposits
Nitrate (as Nitrogen) Test results Yr. 2016	N	Range = 0.3 – 4.95 Highest detect = 4.95	ppm	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Selenium Test results Yr. 2015	N	Range = ND – 2.8 Highest detect = 2.8	ppb	50	50	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines
Volatile Organic Contaminants / Disinfection Byproducts:						
TTHM Total Trihalomethanes Test results Yr. 2016	N	Range = 1 Highest detect = 1	ppb	N/A	80	By-product of drinking water disinfection
Total Xylenes Total results Yrs. 2015 & 2016	N	Range = ND – 0.6 Highest detect = 0.6	ppb	1000	1000	Discharge from petroleum factories; discharge from chemical factories
Secondary Contaminants		Level Detected	Units of Measurement		RUL	
Iron Test results Yr. 2015		Range = ND – 400	ppb		300	
Manganese Test results Yr. 2015		Range = ND – 217	ppb		50	
Regulated Disinfectants		Level Detected	MRDL *		MRDLG *	
Chlorine Test results Yr. 2016		Average = 0.5 ppm	4.0 ppm		4.0 ppm	

Unregulated Contaminant Monitoring Rule (UCMR)

The Washington Township MUA participated in the UCMR. 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. Our results are available upon request.

Contaminant	Level Detected	Units of Measurement	Likely source
Chlorate Test results Yr. 2015	Range = 97 - 574	ppb	Agricultural defoliant or desiccant; disinfection byproduct; used in the production of chloride dioxide
Chromium (VI) Test results Yr. 2015	Range = 0.04 – 0.4	ppb	Naturally-occurring element; used in the making of steel and other alloys; chromium -3 or -6 are used for chrome plating, dyes and pigments, leather tanning, and other wood preservation
Chromium Test results Yr. 2015	Range = ND – 0.4	ppb	Naturally-occurring element; used in the making of steel and other alloys; chromium -3 or -6 are used for chrome plating, dyes and pigments, leather tanning, and other wood preservation
Strontium Test results Yr. 2015	Range = 52 - 138	ppb	Naturally-occurring element; historically commercial use of strontium has been in the faceplate glass of cathode-ray tube televisions to block x-ray emissions
Vanadium Test results Yr. 2015	Range = ND – 0.9	ppb	Naturally-occurring element metal; used as vanadium pentoxide which is a chemical intermediate and a catalyst
HCFC-22 Test results Yr. 2015	Range = ND – 0.15	ppb	Man-made chemical used in the manufacture of fluoropolymers.
Manganese Test results Yr. 2015	Range = ND – 74	ppb	Manganese is a naturally occurring element in soil, groundwater, and some surface waters.

The Schooley’s Mountain System exceeded the secondary Recommended Upper Limit (RUL) for manganese which is based on staining of laundry. Manganese is an essential nutrient, and toxicity is not expected from levels which would be encountered in drinking water. Manganese is a naturally occurring element in soil, groundwater, and some surface waters. Manganese is considered harmless to health, however, they may give water an off taste or color, cause splotchy yellow stains on laundry, and clog water systems.

The Schooley’s Mountain System exceeded the secondary Recommended Upper Limit (RUL) for Iron which is based on unpleasant taste of the water and staining of laundry. Iron is an essential nutrient, but some people who drink water with iron levels well above the RUL could develop deposits of iron in a number of organs in the body. Iron is a naturally occurring element in soil, groundwater, and some surface waters. Iron bacteria are considered harmless to health, however, they may give water an off taste or color, cause splotchy yellow stains on laundry, and clog water systems. We do not treat or remove Iron at this time.

HAGER SYSTEM TEST RESULTS (PWSID #NJ1438003)

Contaminant	Violation Y/N	Level Detected	Units of Measurement	MCLG	MCL	Likely Source of Contamination
Radioactive Contaminants						
Alpha Emitters Test results Yr. 2015	N	Range = ND – 3 Highest detect = 3	pCi/1	0	15	Erosion of natural deposits
Combined Radium 228 & 226 Test results Yr. 2015	N	Range = ND – 3 Highest detect = 3	pCi/1	0	5	Erosion of natural deposits
Inorganic Contaminants						
Arsenic Test results Yr. 2015	N	Range = 0.2 – 0.6 Highest detect = 0.6	ppb	N/A	5	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
Barium Test results Yr. 2015	N	Range = 0.009 – 0.04 Highest detect = 0.04	ppm	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Copper Result at 90 th Percentile Test results Yr. 2015	N	0.097 No Samples exceeded the action level	ppm	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits
Fluoride Test results Yr. 2015	N	Range = ND – 0.1 Highest detect = 0.1	ppm	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Lead Result at 90 th Percentile Test results Yr. 2015	N	2.3 1 Sample out of 10 exceeded the action level	ppb	0	AL=15	Corrosion of household plumbing systems; erosion of natural deposits
Nickel Test results Yr. 2015	N	Range = 0.4 – 1.5 Highest detect = 1.5	ppb	N/A	N/A	Erosion of natural deposits
Nitrate (as Nitrogen) Test results Yr. 2016	N	Range = 0.09 – 3.7 Highest detect = 3.7	ppb	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Selenium Test results Yr. 2015	N	Range = 0.8 – 2.2 Highest detect = 2.2	ppb	50	50	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines
Thallium Test results Yr. 2015	N	Range = ND – 0.04 Highest detect = 0.04	ppb	0.5	2	Leaching from ore-processing sites; discharge from electronics, glass, and drug factories
Volatile Organic Contaminants/Disinfection Byproducts						
TTHM Total Trihalomethanes Test results Yr. 2016	N	Range = 1 – 11 Highest detect = 11	ppb	N/A	80	By-product of drinking water disinfection
Regulated Disinfectants		Level Detected			MRDL *	MRDLG *
Chlorine Test results Yr. 2016		Average = 0.75 ppm			4.0 ppm	4.0 ppm

* **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 Level Goal (MRDLG)** – 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.

HEALTH EFFECTS

Inorganic Contaminants

- **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. Washington Township MUA 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 and 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>.
- **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 advice from your health care provider

Secondary Contaminants

- **Iron:** Aesthetic and cosmetic effects only.
- **Manganese:** Aesthetic and cosmetic effects only.
- **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 of concern to individuals on sodium restricted diets.

Non-Regulated Substances

We constantly monitor the water supply for various contaminants. We have detected radon in the finished water supply. 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.

Non-Regulated Substance	Level Detected	Units	Likely Source
Radon	Range = ND – 2320	PCi/L	Erosion of natural deposits

PROTECTION OF WATER RESOURCES

The New Jersey Department of Environmental Protection has completed and issued the Source Water Assessment Reports and Summaries for these public water systems, which are available at 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 sources determined the following which is illustrated in the table below. This table shows the susceptibility ratings for the seven contaminant categories (and radon) for each source in our systems. The table provides the number of wells that rated high (H), medium (M), or low (L) for each contaminant category. The seven contaminant categories are defined below the tables.

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.

SCHOOLEY'S MOUNTAIN WATER SYSTEM																								
Susceptibility Rating	Pathogens			Nutrients			Pesticides			Organic			Inorganics			Radionuclides			Radon			Disinfection Byproduct 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
Number of Wells	1	1	6	6	1	1		3	5			8			8	1	6	1	7	1			8	

HAGAR WATER SYSTEM																								
Susceptibility Rating	Pathogens			Nutrients			Pesticides			Organic			Inorganics			Radionuclides			Radon			Disinfection Byproduct 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
Number of Wells	1	5		4	2			2	4			6			6	2	4		6			2	4	

- **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.
- **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 Byproduct Precursors:** A common source is naturally occurring organic matter in surface water. Disinfection byproducts are found when the disinfectants (usually chlorine) used to kill pathogens react with dissolved organic material (for example leaves) present in surface water.