

Annual Drinking Water Quality Report

Spotswood Water Department

For the Year 2017, Results from 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. Our water source is a well. Our well draws groundwater from underground sources. Aquifer is another name for water contained in the rock and soil. We supplement our supply with treated water from the East Brunswick Water Department, who in turn receives its water from the Middlesex Water Company. The New Jersey Department of Environmental Protection (NJDEP) has completed and issued the Source Water Assessment Report and Summary for these public water systems, which is available at <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 these Source Water Assessments. Spotswood Water Department's source water susceptibility ratings and a list of potential contaminant sources is included.

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).

Spotswood Water Department Test Results – PWS ID# NJ1224001						
Contaminant	Violation Y/N	Level Detected	Units of Measurement	MC LG	MCL	Likely Source of Contamination
Inorganic Contaminants:						
Antimony Test results Yr. 2014	N	0.1	ppb	6	6	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder
Arsenic Test results Yr. 2014	N	0.7	ppb	n/a	5	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
Barium Test results Yr. 2014	N	0.001	ppm	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Copper Test results Yr. 2016 Result at 90 th Percentile	N	0.4 No samples exceeded the action level	ppm	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead Test results Yr. 2016 Result at 90 th Percentile	N	4.1 No samples exceeded the action level	ppb	0	AL=15	Corrosion of household plumbing systems, erosion of natural deposits
Mercury (inorganic) Test results Yr. 2014	N	0.1	ppb	2	2	Erosion of natural deposits; discharge from refineries and factories; runoff from landfills; runoff from cropland
Nickel Test results Yr. 2014	N	0.5	ppb	N/A	N/A	Erosion of natural deposits
Selenium Test results Yr. 2014	N	1.3	ppb	50	50	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines
Disinfection Byproducts:						
TTHM [Total trihalomethanes] Test results Yr. 2016	N	Range = 26 - 104 Highest LRAA = 54	ppb	N/A	80	By-product of drinking water disinfection
HAA5's [Total Halocetic Acids] Test results Yr. 2016	N	Range = 18 - 87 Highest LRAA = 43	ppb	N/A	60	By-product of drinking water disinfection
Regulated Disinfectants		Level Detected		MRDL		MRDLG
Chlorine Test results Yr. 2016		Average = 0.6 ppm		4.0 ppm		4.0 ppm

For Total Halocetic Acids (HAA5s) and Total Trihalomethanes (TTHMs), which are disinfection byproducts, compliance is based on a Locational Running Annual Average (LRAA), calculated at each monitoring location. The LRAA calculation is based on four completed quarters of monitoring results.

The Spotswood Water Department and the East Brunswick Water & Sewer Utility / Middlesex Water Company routinely monitor for contaminants in your drinking water according to Federal and State laws. The tables show the results of that monitoring for the period of January 1st to December 31st 2016. The state allows them to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of the data, though representative, are more than one year old. 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.

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 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, 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 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.

DEFINITIONS

In the "Test Results" 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 - one part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.

Parts per trillion (ppt) or Nanograms per liter (nanograms/l) - one part per trillion corresponds to one minute in 2,000,000 years, or a single penny in \$10,000,000,000.

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

Millirems per year (mrem/yr) - measure of radiation absorbed by the body.

Nephelometric Turbidity Unit (NTU) - nephelometric turbidity unit is a measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

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 - 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.

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.

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

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

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 Spotswood Water Department and the East Brunswick Water Department / Middlesex Water Company are 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 second 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>.

If you have any questions about this report or concerning your water utility, please contact Fred Walter, Utility Manager, at 732-416-1827. 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 meetings.

East Brunswick Water Utility Test Results – PWS ID# NJ1204001						
Contaminant	Violation Y/N	Level Detected	Units of Measurement	MC LG	MCL	Likely Source of Contamination
Inorganic Contaminants:						
Copper Test results Yr. 2016 Result at 90 th Percentile	N	0.17 No samples exceeded the action level	ppm	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits
Lead Test results Yr. 2016 Result at 90 th Percentile	N	7 No samples exceeded the action level	ppb	0	AL=15	Corrosion of household plumbing systems; erosion of natural deposits
Disinfection Byproducts:						
TTHM Total trihalomethanes Test results Yr. 2016	N	Range = 22 - 128 Highest LRAA = 58	ppb	N/A	80	By-product of drinking water disinfection
HAA5's Total Halocetic Acids Test results Yr. 2016	N	Range = 17 - 37 Highest LRAA = 30	ppb	N/A	60	By-product of drinking water disinfection
Regulated Disinfectants		Level Detected		MRDL		MRDLG
Chlorine Test results Yr. 2016		Average = 0.8 ppm		4.0 ppm		4.0 ppm

Middlesex Water Company Test Results – PWS ID# NJ1225001						
Contaminant	Violation Y/N	Level Detected	Units of Measurement	MC LG	MCL	Likely Source of Contamination
Inorganic Contaminants:						
Arsenic Test results Yr. 2016	N	Range = ND – 1.5 Highest detect = 1.5	ppb	N/A	5	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
Barium Test results Yr. 2016	N	Range = 0.02 – 0.18 Highest detect = 0.18	ppm	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Fluoride Test results Yr. 2016	N	Range = 0.05 – 0.07 Highest detect = 0.07	ppm	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Copper Test results Yr. 2016 Result at 90 th Percentile	N	0.2 No samples exceeded the action level	ppm	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits
Lead Test results Yr. 2016 Result at 90 th Percentile	N	2 3 samples out of 52 exceeded the action level	ppb	0	AL=15	Corrosion of household plumbing systems; erosion of natural deposits
Nickel Test results Yr. 2016	N	Range = ND – 0.8 Highest detect = 0.8	ppb	N/A	N/A	Erosion of natural deposits
Nitrate (as Nitrogen) Test results Yr. 2016	N	Range = 0.6 – 3.6 Highest detect = 3.6	ppm	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Selenium Test results Yr. 2016	N	Range = ND – 1.5 Highest detect = 1.5	ppb	50	50	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines
Microbiological Contaminants						
Turbidity Test results Yr. 2016	N	Highest detect = 0.3 100% of samples < 0.3		N/A	TT 95% of samples < 0.3 NTU	Soil runoff, naturally present in the environment.
Radioactive Contaminants						
Beta/photon Emitters (mrem/yr) Test results Yr. 2016	N	3.6	mrem/yr	0	4	Decay of natural and man-made deposits
Gross Alpha Test results Yr. 2016	N	2	pCi/l	0	15	Erosion of natural deposits
Uranium Test results Yr. 2016	N	2	ppb	0	30	Erosion of natural deposits
Disinfection Byproducts:						
TTHM Total trihalomethanes Test results Yr. 2016	N	Range = 7 - 72 Highest LRAA = 45	ppb	N/A	80	By-product of drinking water disinfection
HAA5's Total Halocetic Acids Test results Yr. 2016	N	Range = 1 - 38 Highest LRAA = 32	ppb	N/A	60	By-product of drinking water disinfection
Bromate Test results Yr. 2016	N	Range = ND - 2 Highest detect = 2	ppb	N/A	10	By-product of drinking water disinfection
Regulated Disinfectants		Level Detected		MRDL		MRDLG
Chlorine / Chloramines Test results Yr. 2016		Range = ND - 2 ppm Average = 0.8		4.0 ppm		4.0 ppm

Secondary Contaminant	Level Detected	Units of Measurement	RUL
Sodium Test results Yr. 2016	Range = 20 - 100	ppm	50

HAA5 and TTHM compliance is based on the Locational Running Annual Average (LRAA), calculated at each monitoring location. The LRAA calculation is based on four completed quarters of monitoring results.

The Middlesex Water Company exceeded the Recommended Upper Limit for 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 (RUL) may be of concern to individuals on a sodium restricted diet.

**Middlesex Water Company Additional Monitoring
Unregulated Contaminant Monitoring Rule (UCMR)**

The Middlesex Water Company 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
Perfluorohexanoate (PFHA)	Range = ND - 9	ppb	A man-made chemical used in the manufacture of fluoropolymers
Perfluoro octanic Acid (PFOA)	Range = ND - 30	ppb	A man-made chemical used in the manufacture of fluoropolymers
PFOS	Range = ND - 22	ppb	A man-made chemical used in the manufacture of fluoropolymers
PFHS	Range = ND - 23	ppb	A man-made chemical used in the manufacture of fluoropolymers
PFHepA	Range = ND - 6.3	ppb	A man-made chemical used in the manufacture of fluoropolymers
PFBS	Range = ND - 4.6	ppb	A man-made chemical used in the manufacture of fluoropolymers
Perchlorate	Range = 1.5 - 2.2	ppb	Oxygen additive in solid fuel propellant for rockets
N-nitrosopyrrolidine (NPYR) (9)	Range = ND - 23	ppb	Reaction of precursor amines with nitosating agents
Strontium	Range = 79 - 176	ppb	Erosion of natural deposits
Chromium VI	Range = 0.3 - 0.8	ppb	Erosion of natural deposits
Chlorate	Range = ND - 310	ppb	Erosion of natural deposits
Chromium (total)	Range = ND - 1	ppb	Erosion of natural deposits
Molybdenum	Range = ND - 16	ppb	Erosion of natural deposits
Chlorodifluoromethane (HCFC-22)	Range = ND - 0.7	ppb	A man-made chemical, used as a refrigerant
Vanadium	Range = ND - 13	ppb	Erosion of natural deposits
1,1-dichloroethane	Range = ND - 0.1	ppb	Used as a solvent
1,4 dioxane	Range = ND - 0.2	ppb	Solvent or solvent stabilizer

Cryptosporidium

Cryptosporidium is a microbial pathogen found in surface water throughout the U.S. Cryptosporidium is usually removed through the filtration process and inactivated by other treatment processes such as chlorination and / or ozonation. In order to check for the presence of Cryptosporidium, the USEPA issued the Long Term Enhanced Surface Water Treatment Rule in January 2006. Our sample results did not show any presence of Cryptosporidium. We believe it is important for you to know that cryptosporidium may cause serious illness in 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. These people should seek advice from their health care providers.

Spotswood Water Department- PWSID # NJ1224001

Spotswood Water Department is a public community water system consisting of one (1) active well and a purchased source.

This system's source water comes from the following aquifers: Upper Potomac-Raritan-Magothy Aquifer, Middle Potomac-Raritan-Magothy Aquifer.

This system purchases water from the following water systems: Middlesex Water Company / East Brunswick Water Department

Susceptibility Ratings for Spotswood 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. For susceptibility ratings of purchased water, refer to the specific water system’s source water assessment report.

The seven contaminant categories are defined at the bottom of this page. 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.

Sources	Pathogens			Nutrients			Pesticides			Volatile Organic Compounds			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	
Wells - 1		1			1				1			1		1		1				1			1		

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 formed when the disinfectants (usually chlorine) used to kill pathogens react with dissolved organic material (for example leaves) present in surface water.

*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.*