



2019 ANNUAL WATER QUALITY REPORT

Township of Pequannock



JUNE 1, 2019
TOWNSHIP OF PEQUANNOCK
530 Newark Pompton Turnpike, Pompton Plains, NJ 07444

SAFE DRINKING WATER ACT (SDWA)

Amendments to the Safe Water Act in 1996 require that utilities issue an annual “Consumer Confidence Report” to its customers. This report details where our water comes from, what it contains, and the risks our water testing and treatment are designed to prevent. The Township of Pequannock is committed to providing you with the safest and most reliable water supply. Informed consumers are our best allies in maintaining safe drinking water.

Water Source: The Pequannock Township Water Utility is supplied by three ground water wells located in the northern portion of the Township in the vicinity of West Parkway and the Boulevard. Depths of the wells range from 96 to 152 feet.

Subsurface ground formations that produce ground water which the wells draw from are known as aquifers. Water in aquifers come mainly from rain and snow which passes through the ground and becomes part of the ground water. The aquifer which the Township wells draw from is known as the Buried Valley Aquifer. The characteristics of this aquifer is a thick layer of unconsolidated sediments which includes coarse sand, gravel and finer soils which were deposited at the end of the last ice age.

In addition to the three Township wells, Pequannock's water system has two inter-connections with the City of Newark water system. Newark's water comes from a surface source from the Pequannock Water Shed which is supplied by five reservoirs; Charlottesburg, Echo Lake, Canistear, Clinton and Oak Ridge. The purpose of these interconnections is to supplement the Township's supply of water. These interconnections exist along the aqueduct which crosses the Township and the connections are located at Hopper Avenue and Jefferson Street. During 2018, the approximate volume of water delivered from the Newark system represents 40% of the annual volume of water distributed by the Township.

The 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/ or by contacting the NJDEP, Bureau of Safe Drinking Water at (609) 292-5550. The source water assessment performed on our three well sources determined the following:

Pequannock Township Water Department is a public community water system consisting of 3 well(s), 0 wells under the influence of surface water, 0 surface water intake(s), 0 purchased ground water source(s), and 1 purchased surface water source(s.)

This system's source water comes from the following aquifer: glacial sand and gravel.

This system purchases water from the following system: NEWARK WATER DEPARTMENT.

SUSCEPTIBILITY RATINGS FOR THE PEQUANNOCK 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. For susceptibility of purchased water, refer to the specific water system's sources water assessment report.

The seven contaminant categories are defined below. DEP considered all surface water highly susceptible to pathogens, therefore all intakes received a high rating for the pathogen category. For the purpose of the 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 containment 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.

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 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.

Sources	Pathogens			Nutrients			Pesticides			Volatile Organic Compounds			Inorganic			Radio Nudides			Radon			Disinfection Byproducts 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
Well-3			3	3				1	2	2		1		3		3			2	1			3	
GUDI-O																								
Surface Water Intakes-0																								

TREATMENT OF WATER

The Township treats its water with sodium hypochlorite (chlorine) at all three wells. The purpose of this treatment is to disinfect the water to kill microorganisms which can cause diseases such as typhoid fever and cholera. In addition, Well #3 water passes through an air stripper to reduce the level of radon at this source.

TESTING OF WATER

To ensure the safety of our water, the Township of Pequannock monitors the quality of water at the wells and within the distribution system. More than 100 compounds are evaluated at NJDEP and EPA certified laboratories. This report is based upon tests conducted in 2018 by the Pequannock Township Health Department.

Terms used in the Water Quality Table and in other parts of this report are defined here.

Maximum Contaminant Level (MCL) - 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 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 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 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.

Primary Standards - Federal drinking water regulations that are health related.

Secondary Standard - Federal drinking water measurements for substances that are not health related.

Treatment Technique - A required process intended to reduce the level of a contaminant in drinking water.

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

Variance and Exemption: Both of these terms are defined as State or EPA permission not to meet an MCL or a treatment technique under certain conditions.

Key to Table:

AL = Action Level

MCL = Maximum Contaminant Level

MCLG- = Maximum Contaminant Level Goal

MFL- = Million Fibers per Liter

MRDL- = Maximum Residual Disinfectant Level

MRDLG- = Maximum Residual Disinfectant Level Goal

mrem/year = millirems per year (a measure of radiation absorbed by the body)

NTU = Nephelometric Turbidity Units

pci/l = picocuries per liter (a measure of radioactivity)

ppm = parts per million, or milligrams per liter (mg/l)

ppb = parts per billion, or micrograms per liter (ug/l)

ppt = parts per trillion, or nanograms per liter

ppq = parts per quadrillion, or picograms per liter

TT = Treatment Technique

WHAT DO THE #S MEAN?

In this newsletter, we have dealt extensively with standards in determining federal and state safe drinking water requirements. A standard is a rule, a principle or a measurement established by governmental authority. These regulations protect the public health and welfare.

Life is dependent upon water. Water exists in nature in many forms...in clouds, rain, snow, ice and fog. Even while falling as rain, water picks up small amounts of gases, ions, dust, and particulate matter from the atmosphere. Then, as it flows over or through the surface layer, it dissolves and carries with it some of almost everything that it touches including that which is discarded by man.

HEALTH INFORMATION

To ensure that tap water is safe to drink, EPA prescribes limits on the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water.

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 Environmental Protection Agency Safe Drinking Water Hotline (800-426-4791).

The sources of drinking water (both tap water and bottled water) includes 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 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:

(A) Microbial contaminants which may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife.

(B) Inorganic chemical contaminants, such as salt and metals, which can be naturally occurring or result from urban storm runoff, industrial or domestic wastewater discharges, oil and gas production, mining or farming.

(C) Pesticides and herbicides, which may come from a variety of sources such as agriculture, storm water runoff and residential uses.

(D) Organic chemical contaminants, including synthetic and volatile organics, which are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff and septic systems.

(E) Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.

(F) Radon - Pequannock's water does contain radon, however, the amount of radon detected complies with State and Federal regulations. Radon is a radioactive gas that you can't see, taste or smell. Found throughout the U.S. radon can move up through the ground and into a home through cracks and holes in the foundation. Radon can also get into indoor air when released from tap water from showering, washing dishes and other household activities. Compared to radon entering the home through soil, radon entering the home through tap water will in most cases be a small source of radon in indoor air. Radon is a known human carcinogen. Breathing air containing radon can lead to lung cancer. Drinking water containing radon may also cause increased risk of stomach cancer. If you are concerned about radon in your home, test the air in your home. Testing is inexpensive and easy. Where the level of radon is 4 picocuries per liter of air (pCi/L) or higher, home repairs should be made which can correct this problem. There are simple ways to fix a radon problem that aren't too costly. For additional information, call either the NJDEP Radon Information Line (800-648-0394) or EPA's Radon Hotline (800-SOS-RADON).

(G) Cryptosporidium - The City of Newark tests its finished water supply for cryptosporidium on a monthly basis. It has never been detected in a viable state in it's treated water supply. Cryptosporidium is a microbial pathogen found in surface water throughout the U.S. Although filtration removes cryptosporidium, the most commonly used filtration methods cannot guarantee 100 percent removal. Ingestion of cryptosporidium may cause cryptosporidiosis, an abdominal infection. Symptoms of infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals can overcome the disease within a few weeks. However, immune compromised people are at greater risk of developing life threatening illness. We encourage immune compromised individuals to consult their doctor regarding appropriate precautions to take to avoid infection. Cryptosporidium must be ingested to cause disease, and it may be spread through means other than drinking water.

(H) Chlorine - A century ago, acute diseases such as typhoid fever and cholera were a very real threat to our health because the microorganisms that causes these diseases were found in public drinking water. However, for almost 100 years, water suppliers in America and other countries have used chlorine to treat or disinfect drinking water. According to the U.S. Environmental Protection Agency and other health agencies, chlorine is currently one of the most effective disinfectants to kill harmful microorganisms. Disinfection of all public water supplies is required by State and Federal laws and regulations, including the Safe Drinking Water Act and the Surface Water Treatment Rule.

(I) Total Trihalomethanes (TTHMs) - Untreated water contains organisms that may cause illness. Chlorine is used as a primary disinfectant and serves to maintain a level of disinfection in the pipes that transport water to homes and business. When organic compounds in untreated water react with chlorine, they produce byproducts known as trihalomethanes (THMs.) 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 system, and may have an increased risk of getting cancer.

Our water system recently exceeded the standard for TTHMs. On December 21, 2018, we received notice that samples collected between October 1, 2018 and December 31, 2018 showed that our system exceeds the standard, or Maximum Contaminant Level (MCL) for Trihalomethanes (TTHM). The standard for TTHM is 80 µg/L. It is determined by averaging all the samples collected at each sampling location for the past 12 months. The level of TTHM averaged at two of our system's four locations was 87 µg/L and 81 µg/L respectively. The Township has been actively working toward resolving violations related to disinfection by-products (DBP's) over the past two years.

(J) Turbidity - 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. During the months of November and December the Newark Water System exceeded the turbidity standard due to unusual water quality conditions in the reservoir. Newark added a filter aid polymer and resolved the problem by Jan 1 2019.

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. FDA regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

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. Pequannock Township 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 or at <http://www.epa.gov/safewater/lead>.

WATER HARDNESS

Hardness is the level of dissolved natural minerals (calcium and magnesium) found naturally in water. These minerals are an important part of a healthy diet. Hard water contains more mineral nutrients and less sodium. A gradual buildup of calcium and magnesium may form a harmless, filmy white deposit on faucets, and in tea kettles. Hard water also requires more soap to lather fully.

CONCERNING IRON AND MANGANESE

IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER: The Pequannock Township Water system recently failed to comply with a required testing procedure. Even though this was not an emergency, as our customers, you have a right to know what happened and what we did to correct the situation. *We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not our drinking water meets health standards. During the 2018 annual monitoring period we did not monitor or test for Iron and Manganese and therefore cannot be sure of the quality of your drinking water during that time.*

What should I do? There is nothing you need to do at this time. You may continue to drink the water. If a situation arises where the water is no longer safe to drink, you will be notified within 24 hours.

What is being done? On January 8, 2019 we collected a sample of our finished water in order to have it analyzed for both Iron and Manganese. The sample was analyzed and both Iron and Manganese and results were found to be below the maximum contaminant level.

For more information, please contact David Seugling, Water Operator at 973-835-5700 ext. 189 or 530 Newark Pompton Turnpike, Pompton Plains, NJ 07444.

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.

CONCERNING NITRATE IN OUR WATER

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 and shortness of breath. 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.

CONCERNING SODIUM IN OUR WATER

Pequannock Township Water System exceeded the Secondary Recommended Upper Limit (RUL) for Sodium. The RUL for Sodium is 50 parts per million (ppm) and our water system detected sodium at 94.3 ppm.

This is not an emergency, but as our customers, you have the right to know what happened and what is being done to correct the situation. 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 RUL might be of concern to individuals on sodium restricted diets.

What Should I Do? There is nothing you need to do at this time. What Happened? What is being done? Sodium is derived geologically from the leaching surface and underground deposits of salt (example: Sodium Chloride), and from the decomposition of sodium silicate and similar minerals. The sodium ion is a major consistent of natural waters. Human activities also contribute sodium to water supplies, primarily through the use of sodium chloride as a deicing agent and the use of washing products. Pequannock Township has not indentified the origin of sodium in the water at this time. The Township constructed a treatment system which mixes our various supplies to adjust the sodium concentration in the water to within the recommended standards.

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 business). You can do this by posting this notice in a public place or distributing copies by hand or mail.

QUESTIONS ABOUT WATER TESTING AND THE PEQUANNOCK TOWNSHIP WATER SYSTEM

If you have any questions about this Water Quality Report or the water testing performed by the Township, please contact the Health Department (973) 835-5700 Ext. 127 between the hours of 8:30 a.m. and 4:30 p.m.

To learn more about the water system, its' operation and supply, please contact the Department of Public Works at (973) 835-9001.

The Township Council meets on the second and fourth Tuesdays of each month. There is a public discussion period at each meeting where questions and concerns are addressed. These meetings are open to the public and you are always welcome and invited to attend.

SOME PEOPLE MAY BE MORE VULNERABLE TO CONTAMINANTS IN DRINKING WATER THAN IS THE GENERAL POPULATION. IMMUNOCOMPROMISED PERSONS SUCH AS PERSONS WITH CANCER UNDERGOING CHEMOTHERAPY, PERSONS WHO HAVE 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 ARE AVAILABLE FROM THE SAFE DRINKING WATER HOTLINE (800-426-4791).

Regulated Contaminants	Units	Maximum Contaminant Level Goal (MCLG)	Maximum Contaminant Level (MCL)	Newark System Results	Pequanock System Results	Source of Contaminant
Inorganic Contaminants:						
Antimony	ppb	6	6	---	<0.4	Discharge from petroleum refineries: fire retardants; ceramics; electronics; solder.
Arsenic	ppb	N/A	50	<0.5	<0.5	Erosion of natural deposits; runoff from orchards and glass and electronic production wastes.
Barium	ppm	2	2	0.008	0.029	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits.
Cadmium	ppb	5	5	---	<0.5	Erosion of natural deposits; corrosion of galvanized pipes; discharge from metal refineries, waste batteries and paints.
Chromium	ppb	100	100	---	1	Erosion of natural deposits; discharge from steel and pulp mills.
Copper	ppm	1.3	AL=1.3	---	0.135	Corrosion of household plumbing systems; erosion of natural deposits.
Cyanide	ppb	200	200	---	<5	Discharge from steel/metal factories; Discharge from plastic and fertilizer factories.
Fluoride	ppm	4	4	<0.1	0.05	Erosion of natural deposits; discharge from refineries and factories; runoff from landfills; runoff from cropland.
Lead	ppb	0	AL=15	---	3.0	Corrosion of household plumbing systems; erosion of natural deposits.
Mercury	ppb	2	2	<2	<0.2	Erosion of natural deposits; discharge from refineries and factories; runoff from landfills; runoff from cropland.
Nitrate (ppm as nitrogen)	ppm	10	10	<0.1	5.11	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits.
Radiological Substances:						
Gross Alpha	pCi/l	0	15	---	---	Erosion of natural deposits.
Radium	pCi/l	0	5	1.5	---	Erosion of natural deposits.
Microbiological Substances:						
Total Coliforms, Bacteria	Number of positive sample	0	One Positive Sample per month	0	0	Naturally present in the environment.
Turbidity:						
Turbidity	ntu	N/A	0.2-0.35 (<0.3 NTU 99.7% of the time) upper range 1 NTU	0.65 (<0.3 NTU 96.4% of the time)	---	Soil runoff.
Volatile Organic Chemicals:						
THMs Total	ppb	N/A	80	---	34.6 – 128.9 LRAA=86.6	By-product of drinking water disinfection.
Haloacetic Acids	ppb	N/A	60	---	20.27-69.60 LRAA=51.0225	By-product of drinking water disinfection.
1, 1, 1-Trichloroethane	ppb	26	30		0.0	Discharge from metal degreasing sites and other factories.
Secondary Contaminants						
Secondary Contaminants	Units	Secondary Standards (Recommended Upper Limits)		Results		Source of Contaminant
				Newark System	Pequanock System	
Aluminum	ppm		0.2	0.083	<0.15	By product of water treatment using aluminum salts.
Chloride	ppm		250	39.0	190	Erosion of natural deposits.
Chlorine Residual	ppm		4	0.584	0.4-1.2	Chlorine remaining in treated water and available to destroy disease causing organisms.
Color	CU		10	2	<5	Presence of manganese and iron, plankton, humus, peat and weeds.
Hardness	ppm		50-250	51.4	320	A characteristic of water caused primarily by salts of calcium and magnesium.
Iron	ppm		0.3	0.017	<0.05	Erosion of natural deposits.
Manganese	ppm		0.05	0.017	0.006	Erosion of natural deposits.
Odor (TON)	TON		3	1	<1	Algae and plant matter.
pH	units		605-608	7.02	6.8-7.9	Presence of carbonates, bicarbonates, and carbon dioxide.
Sodium	ppm		50	23.2	94.3	Runoff from road salt and from some water softening processes.
Sulfate	ppm		250	10.3	30.7	Drainage of mining wastes, erosion of natural deposits.
Zinc	ppm		5	<0.2	<0.030	Erosion of natural deposits.
Total Dissolved Solids	ppm		500	108	512	Erosion of natural deposits.

TOWNSHIP OF PEQUANNOCK

530 TURNPIKE, POMPTON PLAINS, NJ 07444

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