

## Substances That Could Be in Water

To ensure that tap water is safe to drink, the U.S. EPA prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. U.S. 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 these contaminants does not necessarily indicate that the water poses a health risk.

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, in some cases, radioactive material, and substances resulting from the presence of animals or from human activity. Substances 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, or wildlife; 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; 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 may also come from gas stations, urban storm-water runoff, and septic systems; Radioactive Contaminants, which can be naturally occurring or may be the result of oil and gas production and mining activities.

For more information about contaminants and potential health effects, call the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.

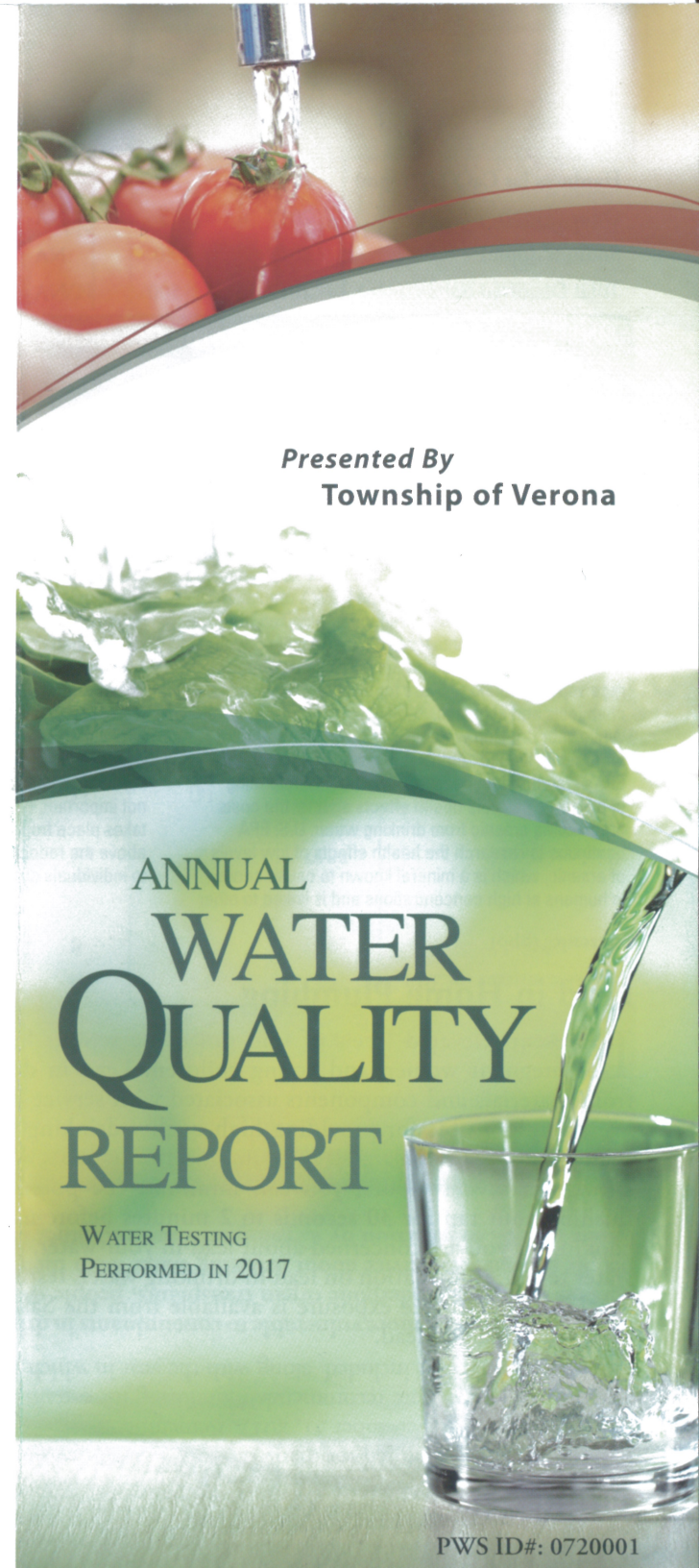
## Community Participation

You are invited to participate in our evening council meetings to present your interests regarding your drinking water. We meet the first and third Mondays of each month, beginning at 7:00 p.m. at Verona Town Hall, 600 Bloomfield Avenue, Verona, NJ.

Township of Verona  
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Presented By  
Township of Verona

# ANNUAL WATER QUALITY REPORT

WATER TESTING  
PERFORMED IN 2017

PWS ID#: 0720001



## Test Results

Our water is monitored for many different kinds of substances on a very strict sampling schedule. The information in the data tables shows only those substances that were detected between January 1 and December 31, 2017. Remember that detecting a substance does not necessarily mean the water is unsafe to drink; our goal is to keep all detects below their respective maximum allowed levels. The State recommends monitoring for certain substances less than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised 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 may be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The U.S. EPA/CDC (Centers for Disease Control and Prevention) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline at (800) 426-4791.

REGULATED SUBSTANCES <sup>1</sup>											
				Township of Verona Water Department		Passaic Valley Water Commission (PVWC)		North Jersey Distric Water Supply Commission (NJWSC)			
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Alpha Emitters (pCi/L)	2017	15	0	5.812	5.057–6.566	NA	NA	NA	NA	No	Erosion of natural deposits
Arsenic <sup>2</sup> (ppb)	2017	5	0	3.60	2.73–4.58	NA	NA	NA	NA	No	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes
Barium (ppm)	2017	2	2	0.376	0.290–0.463	0.027	0.016–0.027	0.019	NA	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Chlorine (ppm)	2017	[4]	[4]	0.54	0.10–0.97	NA	NA	NA	NA	No	Water additive used to control microbes
Chromium (ppb)	2017	100	100	5.38	4.64–6.13	0.60 <sup>3</sup>	ND–0.60 <sup>3</sup>	NA	NA	No	Discharge from steel and pulp mills; Erosion of natural deposits
Fluoride (ppm)	2017	4	4	ND	NA	0.110	ND–0.110	ND	NA	No	Erosion of natural deposits; Water additive, which promotes strong teeth; Discharge from fertilizer and aluminum factories
Haloacetic Acids [HAA] (ppb)	2017	60	NA	12.84	ND–48.9	NA	NA	NA	NA	No	By-product of drinking water disinfection
Nickel (ppb)	2017	100	NA	9.84	9.67–10	3.12	1.69–3.12	ND	NA	No	Pollution from mining and refining operations; Natural occurrence in soil
Nitrate (ppm)	2017	10	10	1.90	1.59–2.22	4.33	0.67–4.33	0.516	NA	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Selenium (ppb)	2017	50	50	8.58	7.17–10	0.74 <sup>3</sup>	ND–0.74 <sup>3</sup>	NA	NA	No	Discharge from petroleum and metal refineries; Erosion of natural deposits; Discharge from mines
TTHMs [Total Trihalomethanes] (ppb)	2017	80	NA	14.12	ND–53.8	NA	NA	NA	NA	No	By-product of drinking water disinfection
Total Organic Carbon (% removal)	2017	TT	NA	NA	NA	78	52–78	NA	NA	No	Naturally present in the environment
Total Organic Carbon (removal ratio)	2017	TT	NA	NA	NA	NA	NA	1.5	1.0–1.5	No	Naturally present in the environment
Turbidity <sup>4</sup> (NTU)	2017	TT	NA	NA	NA	0.22	0.02–0.22	1.0	0.06–1.0	No	Soil runoff
Turbidity (lowest monthly percent of samples meeting limit)	2017	TT = 95% of samples meet the limit	NA	NA	NA	100	NA	99.5	NA	No	Soil runoff

SECONDARY SUBSTANCES



SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	RUL	MCLG	Township of Verona Water Department		Passaic Valley Water Commission (PVWC)		North Jersey Distric Water Supply Commission (NJDWSC)		VIOLATION	TYPICAL SOURCE
				AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH		
Hardness [as CaCO <sub>3</sub> ] <sup>5</sup> (ppm)	2017	250	NA	391.5	361–422	137	88–186	89	NA	No	Naturally occurring
Odor (TON)	2017	3	NA	ND	NA	9	6–12	ND	NA	No	Naturally occurring organic materials
Sodium <sup>6</sup> (ppm)	2017	50	NA	32.2	22.4–42.0	94.5	60–129	45	NA	No	Naturally occurring
Total Dissolved Solids (ppm)	2017	500	NA	696	673–719	137	88–186	129	NA	No	Runoff/leaching from natural deposits

#### UNREGULATED SUBSTANCES (TOWNSHIP OF VERONA WATER DEPARTMENT)

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	TYPICAL SOURCE
Bromoform (ppb)	2017	1.24	ND–1.86	By-product of drinking water disinfection

<sup>1</sup> Under a waiver granted on December 30, 1998, by the State of New Jersey Department of Environmental Protection, our system does not have to monitor for synthetic organic chemicals/pesticides because several years of testing have indicated that these substances do not occur in our source water. The SDWA 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 synthetic organic chemicals and asbestos.

<sup>2</sup> While your drinking water meets U.S. EPA's standard for arsenic, it does contain low levels of arsenic. U.S. EPA's standard balances the current understanding of arsenic's possible health effects against the costs of removing arsenic from drinking water. U.S. EPA continues to research the health effects of low levels of arsenic, which is a mineral known to cause cancer in humans at high concentrations and is linked to other

health effects such as skin damage and circulatory problems.

<sup>3</sup> Sampled in 2016.

<sup>4</sup> Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system. The turbidity rule requires that 95% or more of the monthly samples must be less than or equal to 0.3 NTU (no sample may exceed 1 NTU).

<sup>5</sup> These values reflect the hardness at the production wells. Lower hardness values exist at the faucet due to blending of well water with lower hardness surface water purchased from PVWC.

<sup>6</sup> 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.

## Lead in Home Plumbing

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. We 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 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, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at [www.epa.gov/lead](http://www.epa.gov/lead).

## Definitions

**AL (Action Level):** The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

**LRAA (Locational Running Annual Average):** The average of sample analytical results for samples taken at a particular monitoring location during the previous four calendar quarters. Amount Detected values for TTHMs and HAAs are reported as the highest LRAAs.

**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.

**MRDL (Maximum Residual Disinfectant Level):** 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.

**MRDLG (Maximum Residual Disinfectant Level Goal):** 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 contaminants.

**NA:** Not applicable.

**ND (Not detected):** Indicates that the substance was not found by laboratory analysis.

**NTU (Nephelometric Turbidity Units):** Measurement of the clarity, or turbidity, of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

**pCi/L (picocuries per liter):** A measure of radioactivity.

**ppb (parts per billion):** One part substance per billion parts water (or micrograms per liter).

**ppm (parts per million):** One part substance per million parts water (or milligrams per liter).

**removal ratio:** A ratio between the percentage of a substance actually removed to the percentage of the substance required to be removed.

**RUL (Recommended Upper Limit):** RULs are established to regulate the aesthetics of drinking water like appearance, taste and odor.

**TON (Threshold Odor Number):** A measure of odor in water.

**TT (Treatment Technique):** A required process intended to reduce the level of a contaminant in drinking water.



## Quality First

Once again we are pleased to present our annual water quality report. As in years past, we are committed to delivering the best-quality drinking water possible. To that end, we remain vigilant in meeting the challenges of new regulations, source water protection, water conservation, and community outreach and education, while continuing to serve the needs of all of our water users. Thank you for allowing us the opportunity to serve you and your family.

We encourage you to share your thoughts with us on the information contained in this report. After all, well-informed customers are our best allies.

For more information about this report and other questions regarding your drinking water, please contact Jeff Sonntag at the Verona Water Department at (973) 857-4843 or at [jsonntag@veronanj.org](mailto:jsonntag@veronanj.org). You may also call the U.S. EPA Bureau of Safe Drinking Water Hotline at (800) 426-4791 or the New Jersey Department of Environmental Protection (NJDEP), Bureau of Safe Drinking Water, at (609) 292-5550.



## What Is the Source of Our Drinking Water?

Our water is derived from two different water supplies, ground-water wells that the Township of Verona owns and operates, and treated surface water purchased from the Passaic Valley Water Commission (PVWC). The well water is withdrawn from the Felville aquifer via two deep rock wells located in Verona. The water from PVWC comes from the Wanaque Reservoir, owned and operated by the North Jersey District Water Supply Commission (NJDWSC) located in Wanaque, New Jersey. PVWC can also provide water from their Little Falls treatment plant located in Totowa, New Jersey, that uses water from the Passic River and/or Pompton River. All water sources are treated to produce safe drinking water that satisfies all state and federal standards. In addition to these water supplies, we have emergency water connections with both Essex Fells and the New Jersey American Water Company, which are capable of providing drinking water to Verona in the event of an interruption in our normal water services.

## Source Water Assessment

The NJDEP has not completed a Source Water Assessment Report and Summary for the Verona Well Water System, but assessments have been completed for the PVWC and NJDWSC systems. These reports are available at <http://www.nj.gov/dep/watersupply/swap/index.html> or by contacting the NJDEP, Bureau of Safe Drinking Water, at (609) 292-5550. Each report lists the susceptibility ratings for eight contaminant categories ranging from LOW to HIGH.

WATER SYSTEM	PATHOGENS	NUTRIENTS	PESTICIDES	VOC	IOC	RADIONUCLIDES	RADON	DISINFECTION BP
PVWC	High	High	Medium-Low	Medium	High	Low	Low	High
NJDWSC	High	High	Medium-Low	Medium	High	Low	Low	High

## Monitoring For Cryptosporidium

Cryptosporidium is a microbial parasite found in surface water throughout the U.S. Although filtration removes Cryptosporidium, the most commonly used filtration methods cannot guarantee 100 percent removal. Current test methods do not allow us to determine if the organisms are dead or if they are capable of causing disease. Symptoms of infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals can overcome the disease within a few weeks. However, immunocompromised people are at greater risk of developing life-threatening illness. We encourage immunocompromised 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.

Source water monitoring by PVWC has detected the presence of Cryptosporidium in both the Pomton River and Passaic River.

SOURCE WATER PATHOGEN MONITORING				
CONTAMINANT (UNIT OF MEASURE)	PVWC SOURCE WATERS		NJDWSC	TYPICAL SOURCE
	Passaic River	Pompton River		
Cryptosporidium (Oocysts/L)	0-0.4	0-0.857	0-0.1	Microbial pathogens found in surface waters throughout the United States
Giardia (Cysts/L)	0-1.1	0-1.143	0-0.1	

## Water Treatment Process

The treatment process consists of a series of steps. First, raw water is drawn from our water source and sent to an aeration tank, which allows for oxidation of the high iron levels that are present in the water. The water then goes to a mixing tank where polyaluminum chloride and soda ash are added. The addition of these substances cause small particles to adhere to one another (called "floc"), making them heavy enough to settle into a basin from which sediment is removed. Chlorine is then added for disinfection. At this point, the water is filtered through layers of fine coal and silicate sand. As smaller, suspended particles are removed, turbidity disappears and clear water emerges.

Chlorine is added again as a precaution against any bacteria that may still be present. (We carefully monitor the amount of chlorine, adding the lowest quantity necessary to protect the safety of your water without compromising taste.) Finally, soda ash (used to adjust the final pH and alkalinity), fluoride (used to prevent tooth decay), and a corrosion inhibitor (used to protect distribution system pipes) are added before the water is pumped to sanitized, underground reservoirs, water towers, and into your home or business.

