Kitchawan Water District

Year 2021 Annual Drinking Water Quality Report

1080 Spillway Road, Shrub Oak, NY 10588 PWS#NY5903831

INTRODUCTION

To comply with State regulations, the Kitchawan Water District is issuing an annual report describing the quality of your drinking water. The purpose of this report is to raise your understanding of drinking water and awareness of the need to protect our drinking water sources. Last year we conducted tests for over 130 contaminants. We detected 27 of those contaminants, none of those contaminants were at a level higher than the State allows. As we told you at that time, in 2020, our water exceeded a drinking water standard for lead at one location due to improper sample collection by the homeowner. As required by the Westchester County Dept. of Health, additional Lead & Copper samples were collected in 2021.This report provides an overview of last year's water quality. Included are details about where your water comes from, what it contains, and how it compares to State standards.

If you have questions about this report or concerning your drinking water, please contact Jeffrey Dahlke in our Water Quality Lab at 914-245-6111 ext. 231. We want you to be informed about your drinking water. If you want to learn more, please attend any of our regularly scheduled Town board meetings. The Yorktown Town Board discusses water-related issues on an as-needed basis. For more information please visit the Town's website at www.yorktownny.org.

WHERE DOES OUR WATER COME FROM?

In general, 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 activities. Contaminants that may be present in source water include: microbial contaminants; inorganic contaminants; pesticides and herbicides; organic chemical contaminants; and radioactive contaminants. In order to ensure that tap water is safe to drink, the State and the EPA prescribe regulations which limit the amount of certain contaminants in water provided by public water systems. The State Health Department's and the FDA's regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

Our water system serves apx. 160 people through 42 service connections. The Kitchawan Water District purchases all of its water from the New Castle Water System, which in turn, depends upon the New York City Aqueduct and Reservoir Systems for its entire raw water supply. New Castle's primary water source is the Catskill Aqueduct System fed by the Ashokan Reservoir, and its secondary source is the New Croton Aqueduct fed by the Croton Reservoir System. The New Castle water System prefers the Catskill Supply for two reasons: the water quality is better and it is less costly to get it to the Millwood Water Treatment Plant. During 2021, the New Castle Water System used water from the New Croton Aqueduct for 82 days. The water is treated using coagulation, flocculation, dissolved air floatation, ozone, and chlorination.

The NYS DOH has evaluated the susceptibility of water supplies statewide to potential contamination under the Source Water Assessment Program (SWAP), and their findings are summarized in the paragraph (s) below. It is important to stress that these assessments were created using available information and only estimate the potential for source water contamination. Elevated susceptibility ratings do not mean that source water contamination has or will occur for our water system. The Millwood Water Treatment Plant provides regular monitoring of the water as it leaves the treatment plant to ensure that the water delivered to the Kitchawan Water District meets all applicable standards.

We obtain water from the New York City water supply system. Water can either come from the Catskill watershed west of the Hudson River and/or from the Croton watershed in Putnam and Westchester Counties. The New York City Department of Environmental Protection (DEP) implements a series of programs to evaluate and protect source water quality within these watersheds. Their efforts focus on three important program areas: the enforcement of strengthened Watershed Rules and Regulations; the acquisition and protection of watershed lands; and implementation partnership programs that target specific sources of pollution in the watersheds. Due to these intensive efforts, the SWAP methodologies applied to the rest of the state were not applied for our water system.

The main water quality concerns associated with land cover in these watersheds are agriculture and residential land uses, which can contribute microbial contaminants, pesticides, and algae producing nutrients. There are also some concerns associated with wastewater, but advanced treatments, which reduce contaminants, are in place for most of these discharges. Additionally, the presence of other discrete facilities, such as landfills, chemical bulk storages, etc., could lead to some local impacts on water quality, but significant problems associated with these facilities are unlikely due to the size of the watershed and surveillance and management practices. In addition, the shallow nature of the Croton reservoirs, along with excess algae nutrients and the presence of wetlands in the watershed, contribute to periods of elevated water color and disinfection by-product precursor levels. Additional information on the water quality and protection efforts in these New York City watersheds can be found at NYC DEP's web site:
http://www.nyc.gov/html/dep/html/watershed_protection/index.shtml

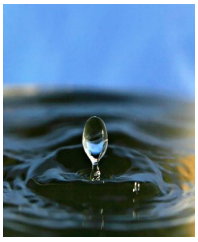
The Millwood Water Treatment Plant is supervised by a Grade 1-A New York State Certified Water Treatment Plant operator and staffed 24 hours per day, seven days per week, with New York State certified Grade 2-A Water Treatment Plant Operators. The Millwood Water Treatment Plant operating criteria adds the least amount of treatment chemicals necessary to be effective and then removes all of the chemicals during the treatment process. The treatment regime has five steps: First, the raw water is mixed for one minute to disperse coagulation chemicals such as polyaluminum chloride, polymer and potassium permanganate. Second, the flocculators provide 30 minutes of staged, controlled mixing to entrap impurities such as clay, viruses, bacteria, protozoan cysts, minerals and algae into floc particles. Third, the Dissolved Air Flotation (DAF) process releases compressed air as microscopic bubbles into the bottom of the process stream and floats the impurity laden floc particles to the surface of the tanks where they are skimmed off. Clarified water leaves the bottom of the tank and flows into the Ozone Contact Chambers. Fourth, ozone is injected into the water. Ozone is the strongest, commonly used oxidizing agent for disinfection and is the primary disinfectant at the plant. It is generated onsite and by injecting it into the clarified water, before filtration, the amount of ozone used is minimized while any oxidized material can be removed by the filters. Finally, clarified, ozonated water is filtered through three feet of sand and anthracite filter media into an underdrain collection system to remove any floc particles that may have escaped the Dissolved Air Floatation (DAF) clarification. Typically, the Plant physically removes 99.9% of the particulate matter and anything left in the water has been disinfected by the ozonation process. Fluoride and Chlorine are also added before the water is pumped to the distribution system.

ARE THERE CONTAMINANTS IN OUR DRINKING WATER?

As the State regulations require, we routinely test our drinking water for numerous contaminants. These contaminants include total coliform, turbidity, inorganic compounds, nitrate, nitrite, lead and copper, volatile organic compound, total trihalomethanes, haloacetic acids, radiological and synthetic organic compounds.

Following is a list of those that were not detected in 2021: Organic contaminants that were tested for and not detected in the source water include 3-Hydroxycarbofuran, Aldicarb, Aldicarb sulfone, Aldicarb sulfoxide, Carbaryl, Carbofuran, Methomyl, Oxamyl, Aldrin, Chlordane, Dieldrin, Endrin, Heptachlor, Heptachlor Epoxide, Lindane, Methoxychlor, PCB's, Propachlor, Toxaphene, Diquat, Endothall, Glyphosate, 2,4-D, Dalapon, Dinoseb, Pentachlorophenol, Picloram, Silvex, 1,2-Dibromo-3- chloropropane, 1,2-Dibromoethane, Butachlor, Metolachlor, Metribuzin, Alachlor, Atrazine, Benzo(a)pyrene, bis(2-Ethylhexyl) phthalate, Hexachlorobenzene, Hexachlorocyclopentadiene, Simazine, 1,1,1,2-tetrachloroethane, 1,1,1-trichloroethane, 1,1,2,2-tetrachloroethane, 1,1,2- trichloroethane, 1,1-dichloroethane, 1,1-dichloroethene, 1,1-dichloropropene, 1,2,3-trichlorobenzene, 1,2,3-trichloropropane, 1,2,4-trichlorobenzene, 1,2,4-trimethylbenzene, 1,2-dichlorobenzene, 1,2-dichloroethane, 1,2-dichloropropane, 1,3,5-trimethylbenzene, 1,3-dichlorobenzene, 1,3- dichloropropane, 1,4-dichlorobenzene, 2,2-dichloropropane, 2-chlorotoluene, 4-chlorotoluene, Benzene, Bromobenzene, Bromochloromethane, Bromomethane, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloromethane, cis-1,2-dichloroethene, cis-1,3-dichloropropene, Dibromomethane, Dichlorodifluoromethane, Ethylbenzene, Isopropylbenzene, Methyl tert-butyl ether (MTBE), Methylene Chloride, N-butylbenzene, N-propylbenzene, O-xylene, P & M-xylene, P-isopropyltoluene, SEC-butylbenzene, Styrene, TERT-butylbenzene, Tetrachloroethene, Toluene, trans-1,2-dichloroethene, trans-1,3-dichloropropene, Trichloroethene, Trichlorofluoromethane, and Vinyl chloride. Inorganic contaminants that were tested for and not detected in the source water include: Silver, Arsenic, Beryllium, Bromide, Cadmium, Cyanide – Potable, Chromium, Iron, Hexavalent Chromium, , Ammonia as N, Nitrite nitrogen as N, Antimony, Selenium, and Thallium. The tables presented on the following pages depicts which compounds were detected in your drinking water. The State allows us to test for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of our data, through representative, are more than one year old.

It should be noted that all drinking water, including bottled drinking water, might be reasonably 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 EPA's Safe Drinking Water Hotline at (800) 426-4791 and https://www.epa.gov/ground-water-and-drinking-water or the Westchester County Department of Health at (914) 813-500 and http://health.westchestergov.com/.



KITCHAWAN WATER SYSTEM

2021 WATER ANALYSIS

TABLE OF *DETECTED* CONTAMINANTS

Contaminant	Violation Yes or No	Date of Sample	MCL	Result Average (Range)	MCLG	Major Sources in Drinking Water
Turbidity (at treatment plant) [1]	No	Every 4 hours	0.3 NTU	0.025 NTU (0.017-0.064)	n/a	Soil runoff, Turbidity is a measurement of the cloudiness of the water.
Turbidity (in distribution system)[1]	No	5 days/wk	5 NTU	0.11 NTU (0.07-0.28)	n/a	Soil runoff, Turbidity is a measurement of the cloudiness of the water.
Inorganic Contaminants						
Fluoride (mg/l)	No	Every 4 hours	2.2 mg/l	0.69 mg/l (0.33 - 0.85)	n/a	Erosion of natural deposits; Water additive which promotes good teeth; Discharge from fertilizer and aluminum factories
Nitrate (mg/l)	No	2021	10 mg/l	0.176 mg/l (ND - 0.353)	10	Runoff from fertilizer. Leaching from septic tanks. Erosion of natural deposits.
Barium (ug/l)	No	2021	2000 ug/l	19.7 ug/l (7.0 - 32.4)	2000	Erosion of natural deposits.
Chloride (mg/l)	No	2021	250 mg/l	47.1 mg/l (11.7 - 82.5)	n/a	Erosion of natural deposits; Road salt
Cyanide (ug/l)	No	2021	200 ug/l	ND	200	Discharge from fertilizer factories.
Magnesium (mg/l)	No	2021	n/a	4.32 mg/l (0.928 - 7.71)	n/a	Naturally occurring.
Manganese (ug/l)	No	2021	300 ug/l	1.6 ug/l	n/a	Large doses of manganese can cause headaches, apathy, irritability, insomnia and weakness in the legs.
Nickel (ug/l)	No	2021	n/a	0.43 ug/l (ND - 0.85)	n/a	Naturally occurring.
Sodium (mg/l)	No	2021	[2]	26.31 mg/l (7.91 - 44.7)	n/a	Road Salt. Water containing more than 20 mg/L of sodium should not be used for drinking by people who are on severely restricted diets. L/T 270 mg/L for moderate diets.
Sulfate (mg/l)	No	2021	250 mg/l	4.73 mg/l (ND - 9.46)	n/a	Erosion of natural deposits
Zinc (mg/l)	No	2021	5000 ug/l	1.45 ug/l (ND - 2.9)	n/a	Naturally occurring.
Radioactive (sampled every 9 years)						
Gross Alpha (pCi/L)	No	4/24/18	15	0.464 pCi/L	0	Decay of natural deposits, or man-made emissions.
Gross Beta (pCi/L)	No	4/24/18	50[3]	0.923 pCi/L	0	Decay of natural deposits, or man-made emissions.
Combined Radium 226 and 228 (pCi/L)	No	4/24/18	5 pCi/L	1.086 pCi/L	0	Decay of natural deposits, or man-made emissions.
Uranium (ug/l)	No	4/24/18	30 ug/l	0.125 ug/l	0	Decay of natural deposits, or man-made emissions.
Disinfection Byproducts						
TTHMs [Total - Trihalomethane (ppb)[4]	No	8/05/21	80 ug/l	16.1 ug/l (12.80-19.4)	n/a	By-product of drinking water chlorination to kill microbes. TTHMs are formed when source water contains organic matter.
Haloacetic acids (ppb)[4]	No	8/05/21	60 ug/l	5.70 ug/l (5.10-6.20)	n/a	By-product of drinking water chlorination to kill microbes.
Chlorine Residual (entry point)	No	Every 4 hours	4 mg/l	1.31 mg/l (1.03-2.03)	n/a	By-product of drinking water chlorination to kill microbes.
Chlorine Residual (distribution system)	No	5 x per week	4 mg/l	0.33 mg/l (0.05-1.00)	n/a	By-product of drinking water chlorination to kill microbes.

Contaminant	Violation Yes or No	Date of Sample	Level Detected (Maximum Range) ug/l	# Samples	Action Level (AL)	# Samples above AL	Range of Concentration Above AL	MCLG	Likely Sources of Contamination
Lead	No	6/3/21-6/8/21 & 11/5/21-11/30/21	2.0[5] (1.0-3.3) 1.0[5] (1.0-1.0)	20	15 ug/l	0	0	0	Corrosion of household plumbing systems. Erosion of natural deposits.
Copper	No	6/3/21-6/8/21 & 11/5/21-11/30/21	25.00[6](10.0-29.0) 69.0[6] (12.0-100.0)	20	1300 ug/l	0	0	1300	Corrosion of household plumbing systems. Erosion of natural deposits.

Synthetic Organic							
Contaminant	**Violation Yes or No**	**Date of Sample**	**Level Detected/ Maximum Range**	**Unit Measurement**	**MCLG**	**Regulatory Limit (MCL, TT or AL)**	**Likely Sources of Contamination**
Perfluorooctanoic Acid (PFOA)	No	10/19/21	2.56 New Croton (ND - 4.02)	ng/l	N/A	MCL = 10 ppt	Released into the environment from widespread use in commercial and industrial applications
Perfluorooctanesulfonic Acid (PFOS)	No	08/13/21	1.79 New Croton (ND - 2.76)	ng/l	N/A	MCL = 10 ppt	Released into the environment from widespread use in commercial and industrial applications
Dicamba	No	09/20/21	ND New Croton 0.093 ug/l Catskill	ng/l	N/A	MCL=10 ppt	Released into the environment from widespread use in commercial and industrial applications
Perfluorobutanesulfonic Acid (PFBS)	No	11/9/21	2.44 New Croton (2.04 - 2.83)	ng/l	N/A	MCL = 10 ppt	Released into the environment from widespread use in commercial and industrial applications
Perfluorohexanoic Acid (PFHxA)	No	11/9/21	2.25 New Croton (1.96 -2.54)	ng/l	N/A	MCL = 10 ppt	Released into the environment from widespread use in commercial and industrial applications
Perfluoroheptanoic Acid (PFHpA)	No	11/9/21	1.61 New Croton (1.22 - 1.99)	ng/l	N/A	MCL = 10 ppt	Released into the environment from widespread use in commercial and industrial applications
Perfluorohexanesulfonic Acid (PFHxS)	No	11/9/21	0.98 New Croton (0.86 - 1.09)	ng/l	N/A	MCL = 10 ppt	Released into the environment from widespread use in commercial and industrial applications
Perfluorononanoic Acid (PFNA)	No	11/9/21	0.326 New Croton (ND - 0.652)	ng/l	N/A	MCL = 10 ppt	Released into the environment from widespread use in commercial and industrial applications
1,4 - Dioxane	No	11/9/21	ND	ng/l	N/A	MCL=1000	Released into the environment from widespread use in commercial and industrial applications

FOOTNOTES:

[1] Turbidity is a measure of the cloudiness of the water. We test it because it is a good indicator of the effectiveness of our filtration system. Our highest single turbidity measurement for the year occurred was (0.064 NTU). State regulations require that turbidity must always be below 1 NTU. The regulations require that 95% of the turbidity samples collected have measurements below 0.3 NTU.
[2] People on severely restricted sodium diets should not consume water containing more than 20 mg/L of sodium. Water containing more than 270 mg/L of sodium should not be used by people on moderately restrictive sodium diets.
[3] The State considers 50 pCi/L to be the level of concern for beta particles. Sampled every 6 years.
[4] This level represents the highest locational running annual average calculated from data collected.
[5] The level presented represents the 90th percentile of the 20 samples collected. The action level for lead (15 ug/l) was not exceeded and the action level for copper (1300 ug/l) was not exceeded in 2021.
[6] The level presented represents the 90 percentile of the 20 sites tested. A percentile is a value on a scale of 100 that indicates the percent of the distribution that is equal to or below it. The 90th percentile is equal to

DEFINITIONS:

AL = Action Level -The concentration of a contaminant that, if exceeded, triggers treatment or other requirements which a water system must follow.
LT=Less Than.
LOQ = Limits of Quantitation.
MCL = Maximum Contaminant Level**-**The highest level of a contaminant that is allowed in drinking water, and are set as close to the MCLGs as feasible.
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.
mg/l = Milligrams per Liter- Corresponds to one part of liquid in one million parts of liquid (parts per million-ppm).
n/a= Not Applicable.
ND = Non-Detects-Laboratory analysis indicates that the constituent is not present.
ng/l = Nanograms per liter- Corresponds to one part of liquid to one trillion parts of liquid (parts per trillion—ppt).
NTU = Nephelometric Turbidity Unit-A measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average

WHAT DOES THIS INFORMATION MEAN?

On **10/22/20** the KWD received a violation of Part 5, Subpart 5-1, Section 5-1.40 of the New York State Sanitary Code from the Westchester County Dept. of Health. The 90th percentile value for lead in the KWD was 16.25 parts per billion (ppb**)**, which exceeds the lead action level of 15 (ppb). The water sample that tested above the action level for lead, according to the homeowner, was taken from a sink ***"…that hasn't been used in 2 or 3 months at least***".

The high lead reading was due to lead leaching from the plumbing fixture over a period of months since last used. The sample collected was not done in accordance with the instructions supplied to the homeowner. The instructions state: "Collect sample from a tap that has not been used for at 6 hours. Be sure to use a kitchen or bathroom cold water tap that has been used for drinking water consumption in the past few weeks."

The KWD does not contain lead water service lines or leaded joints in its system. Lead in a water sample likely comes from plumbing fixtures or lead solder used in the home's plumbing. All of the other homes in the KWD that were tested showed results of <1.0 ppb of lead.

Health Effects: 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.

As required by the WCDOH, the KWD increased lead & copper monitoring in 2021. All samples collected in 2021 were below the action levels for lead & copper.

We are required to present the following information on lead in drinking water:
If present, elevated levels of lead can cause serious health problems, especially for pregnant women, infants, and young children. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your home's plumbing.

The Kitchawan Water District 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, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline (1-800-426-4791) or at http://www.epa.gov/safewater/lead.

IS OUR WATER SYSTEM MEETING OTHER RULES THAT GOVERN OPERATIONS?

During 2021, our system was in compliance with applicable State drinking water operating, monitoring and reporting requirements with the exception of the aforementioned Lead Action Level Exceedance.

DO I NEED TO TAKE SPECIAL PRECAUTIONS?

Although our drinking water met or exceeded state and federal regulations, some people may be more vulnerable to disease causing microorganisms or pathogens 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 from their health care provider about their drinking water. EPA/Center for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by Cryptosporidium, Giardia and other microbial pathogens are available from the Safe Drinking Water Hotline at (800-426-4791).

INFORMATION ON FLUORIDE ADDITION

Our system is one of the many drinking water systems in New York State that provides drinking water with a controlled, low level of fluoride for consumer dental health protection. Fluoride is added to your water by the New Castle/Stanwood Consolidated Water District before it is delivered to us. According to the United States Centers for Disease Control, fluoride is very effective in preventing cavities when present in drinking water at a properly controlled level. To ensure that the fluoride supplement in your water provides optimal dental protection, the New Castle/Stanwood Consolidated Water District monitors fluoride levels on a daily basis to make sure fluoride is maintained at a target level of 0.7 mg/L. During 2021, monitoring showed fluoride levels in your water were within 0.1 mg/L of the target level 99.22 % of the time. None of the monitoring results showed fluoride at levels that approach the 2.2 mg/l MCL for fluoride.

WHY SAVE WATER AND HOW TO AVOID WASTING IT?

Although our system has an adequate amount of water to meet present and future demands, there are a number of reasons why it is important to conserve water:

- Saving water saves energy and some of the costs associated with both of these necessities of life;
- Saving water reduces the cost of energy required to pump water and the need to construct costly new wells, pumping systems and water towers; and
- Also, it lessens the strain on the water system during a dry spell or drought, helping to avoid severe water use restrictions so that essential fire fighting needs are met.

You can play a role in conserving water by becoming conscious of the amount of water your house hold is using, and by looking for ways to use less whenever you can. It is not hard to conserve water. Conservation tips include:

- Automatic dishwashers use 15 gallons for every cycle, regardless of how many dishes are loaded. So, get a run for your money and load it to capacity.
- Turn off the tap when brushing your teeth.
- Check every faucet in your home for leaks. Just a slow drip can waste 15 to 20 gallons a day. Fix it up and you can save almost 6,000 gallons per year.
- Check your toilets for leaks by putting a few drops of food coloring in the tank, watch for a few minutes to see if the color shows up in the bowl. It is not uncommon to lose up to 100 gallons a day from one of these otherwise invisible toilet leaks. Fix it and you save more than 30,000 gallons a year.

IN CLOSING

Thank you for allowing us to continue to provide your family with quality drinking water this year. We ask that all our customers help us protect our water sources, which are the heart of our community. If you have questions concerning your drinking water, please don't hesitate to call us at (914) 245-6111. Ext. # 231