Annual Drinking Water Quality Report for 2021
Pinebrook Estates Water System
Route 9G, Hyde Park, NY 12538
(Public Water Supply ID# 1322156)

INTRODUCTION

To comply with State regulations, Pinebrook Estates Water, will be annually issuing a 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. Of all tests for contaminants conducted in 2021, we found 2 of these at a level higher than the State allows. 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.

The Dutchess County Water and Wastewater Authority took ownership of The Pinebrook Water System on September 15, 2015. If you have any questions or concerns about this report, or concerning your drinking water, or want to learn more, please contact **the Dutchess County Water & Wastewater Authority at (845) 486-3601**. We want you to be informed about your drinking water. If you want to learn more about the Dutchess County Water and Wastewater Authority please visit our website at WWW.DCWWA.Org .

December 20,2021 the first water main interconnection between the Hyde Park Regional Water System and the Pinebrook Water System had passed all required tests and has been activated. The second connection's activation and final restoration is schedule for the Spring of 2022. This new water source to the Pinebrook Community is the most cost-effective approach and will resolve long standing water quality and quantity issues by lowering the level of iron, manganese, radionuclides, chlorides, and sodium to below the regulatory requirements. If you want to learn more about the Hyde Park Regional Water System's water quality a copy of their Annual Drinking Water Report for 2021 can be found by visiting our website at WWW.DCWWA.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 400 people through 133 service connections. Our water source is three drilled rock wells near the WTP along Pinebrook Drive. The water is disinfected with sodium hypochlorite prior to being pumped to the underground storage tank. The water is then drawn from the storage tank and pumped to the buried pneumatic tank to provide adequate pressure to the distribution system.

ARE THERE CONTAMINANTS IN OUR DRINKING WATER?

As the State regulations require, we routinely test your drinking water for numerous contaminants. These contaminants include total coliform, turbidity, inorganic compounds, nitrate, nitrite, lead and copper, volatile organic compounds, total trihalomethanes, haloacetic acids, synthetic organic compounds, and radiologicals. The table presented below 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, though representative, are more than one year old.

It should be noted that all drinking water, including bottled drinking water, may 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 (800-426-4791) or the Dutchess County Department of Behavioral and Community Health at (845) 486-3404.

Table of Detected Contaminants

Contaminant	Violation Yes/No	Date of Sample	Level Detected (Avg/Max) (Range)	Unit Measurement	MCLG	Regulatory Limit (MCL, AL or TT)	Likely Source of Contamination
Nitrate	No	4/12/21	3.4	mg/L	10	10	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Copper (1)	No	6/2-6/4/21 12/7-12/16/21	1 Range (0.12-3.4) 0.56 Range (0.039-0.57)	mg/L	1.3	1.3	Corrosion of household plumbing systems; Erosion of natural deposits; leaching from wood preservatives.
Lead (2)	No	6/2-6/4/21 12/7-12/16/21	0.004 Range (<0.001 – 0.0032) 0.0022 Range (<0.001-0.0022)	mg/l	0	15	Corrosion of household plumbing systems; Erosion of natural deposits.

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Manganese at Entry Point	No	2/19/21 5/19/21 9/7/21 11/22/21	0.08 Range (0.022 – 0.23)	mg/L	n/a	0.3	Naturally occurring; Indicative of landfill contamination
Iron Entry Point	No	2/19/21 5/19/21 9/7/21 11/22/21	0.15 Range (<0.06-.43)	mg/L	n/a	0.3	Erosion of natural deposits
Chloride Entry Point	Yes	2/19/21 3/24/21 5/19/21 6/23/21 8/16/21 11/22/21	370 Range (250-690)	mg/L	n/a	250	Naturally occurring; Road salt; Water softeners; Animal waste
Sodium (3) Entry Point	No	2/19/21 5/19/21 8/16/21 11/22/21	280 180 180 160	mg/L	n/a	See footnote (4)	Naturally occurring; Road salt; Water softeners; Animal waste
Total Trihalomethanes	No	9/7/21	69	ug/L	n/a	80	By-product of drinking water chlorination needed to kill harmful organisms. TTHMs are formed when source water contains large amounts of organic matter.
Haloacetic Acids	No	9/7/21	37.3	ug/L	n/a	60	By-product of drinking water disinfection needed to kill harmful organisms.

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Combined Uranium Entry Point	No	9/17/19	0.00109	Mg/L	0	30	Erosion of natural deposit
Gross Alpha	No	9/3/2019	3	pCi/L	0	15	Erosion of natural deposits
Combined Radium 226 & 228	No	9/13/2016	5	pCi/L	0	5	Erosion of natural deposits
Combined Radium 226 & 228 Well #2	No	3/17/17	2.82	pCi/L	0	5	Erosion of natural deposits
Combined Radium 226 &228 Well #3	No	3/17/17	4.52	pCi/L	0	5	Erosion of natural deposits
Barium	No	5/3/2019	0.110	mg/L	2	2	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
Nickel	No	5/3/19	0.0035	mg/L	n/a	n/a	Erosion of natural deposits
Fluoride	No	5/3/19	0.0315	mg/L		2.2	Erosion of natural deposits
Arsenic Well #2	No	3/17/17	0.0005	mg/L	n/a	0.005	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production waste

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Calcium Entry Point	No	6/21/21	140	mg/L	n/a	n/a	Erosion of natural deposits
Calcium Distribution System	No	6/21/21 12/17/21	140 120	mg/L	n/a	n/a	Erosion of natural deposits
Conductivity Entry Point	No	4/30/20 5/7/20 9/23/20 12/21/20	720 1400 1500 1900	umhos/cm	n/a	n/a	n/a
Conductivity Distribution System	No	5/7/20 6/25/20 9/23/20 12/21/20	1600 1600 1500 1800	umhos/cm	n/a	n/a	n/a
Alkalinity to pH 4.5 as mg/L CaCO3 Entry Point	No	6/21/21	270	mg/L	n/a	n/a	n/a
Alkalinity to pH 4.5 as mg/L CaCO3 Distribution System	No	6/21/21 12/17/21	280 310	mg/L	n/a	n/a	n/a
pH Entry Point	No	6/21/21	7.12	pH units	n/a	n/a	n/a
pH Distribution System	No	6/21/21 12/17/21	6.84 7.14	pH units	n/a	n/a	n/a

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Temp at time of pH Distribution System	No	6/21/21 12/17/21	21.7 22	Celsius	n/a	n/a	n/a
Chloride Well #1	Yes	3/17/17	350	mg/L	n/a	250	Naturally occurring or indicative of road salt contamination
Chloride Well #2	No	3/17/17	230	mg/L	n/a	250	Naturally occurring or indicative of road salt contamination
Chloride Well #3	No	3/17/17	150	mg/L	n/a	250	Naturally occurring or indicative of road salt contamination
Iron Well #1	Yes	10/28/2019	1.3	mg/L	n/a	0.3	Naturally occurring
Iron Well #2	Yes	4/20/2016	4.63	mg/L	n/a	0.3	Naturally occurring
Iron Well #3	Yes	10/28/2019	4.4	mg/L	n/a	0.3	Naturally occurring
Manganese Well #1	No	10/28/2019	0.25	mg/L	n/a	0.3	Naturally occurring; indicative of landfill contamination
Manganese Well #2	Yes	4/20/2016	0.687	mg/L	n/a	0.3	Naturally occurring. Indicative of landfill contamination
Manganese Well #3	Yes	10/28/2019	0.76	mg/L	n/a	0.3	Naturally occurring. Indicative of landfill contamination

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Sodium Well #1	No	4/20/2016	177	mg/L	n/a	See footnote (3)	Naturally occurring; Road Salt; Water softeners; Animal waste
Sodium Well #2	No	4/20/2016	109	mg/L	n/a	See footnote (3)	Naturally occurring; Road Salt; Water softeners; Animal waste;
Sodium Well #3	No	4/20/2016	69	mg/L	n/a	See footnote (3)	Naturally occurring; Road Salt; Water softeners; Animal waste;
Hardness Well #1	No	10/28/19	349	mg/L	n/a	n/a	Naturally occurring
Hardness Well #2	No	5/10/16	540	mg/L	n/a	n/a	Naturally occuring
Hardness Well #3	No	10/28/19	516	mg/L	n/a	n/a	Naturally occurring
Calcium Well #1	No	5/10/16	165	mg/L	n/a	n/a	Erosion of natural deposits
Calcium Well#2	No	5/7/20	180	mg/L	n/a	n/a	Erosion of natural deposits
Calcium Well #3	No	5/7/20	170	mg/L	n/a	n/a	Erosion of natural deposits

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Conductivity Well #2	No	5/7/20	1400	umhos/cm	n/a	n/a	n/a
Conductivity Well #3	No	5/7/20	1200	umhos/cm	n/a	n/a	n/a
Alkalinity to pH 4.5 as mg/L CaCO3 Well #2	No	5/7/20	320	mg/L	n/a	n/a	n/a
Alkalinity to pH 4.5 as mg/L CaCO3 Well #3	No	5/7/20	320	mg/L	n/a	n/a	n/a
pH Well #2	No	5/7/20	6.84	pH units	n/a	n/a	n/a
Temp at time of pH Well #2	No	5/7/20	17.1	Celsius	n/a	n/a	n/a
Temp at time of pH Well #3	No	5/7/20	16.6	Celsius	n/a	n/a	n/a
Turbidity Well #1	No	3/17/17	0.1	NTU	n/a	n/a	Soil Runoff
Turbidity Well #2	No	3/17/17	4	NTU	n/a	n/a	Soil Runoff

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Turbidity Well #3	No	3/17/17	5.5	NTU	n/a	n/a	Soil Runoff
Total Coliform Bacteria Distribution System	No	6/16/21 7/16/21	Present	N/A	0	TT = 2 or more positive samples after April 1, 2016. MCL= 2 or more positive samples before April 1, 2016 (4)	Naturally present in the environment
Perfluorooctanoic acid (PFOA) Well #1 (5)	No	2/9/21 5/25/21 9/21/21	2.74 Range (2.17-3.37)	ng/l	10	N/A	Released into the environment from widespread use in commercial and industrial applications.
Perfluorooctane sulfonic acid (PFOS) Well #1 (6)	No	2/9/21 5/25/21 9/21/21	1.99 Range (1.84-2.23)	ng/l	10	N/A	Released into the environment from widespread use in commercial and industrial applications.
Perfluorooctanoic acid (PFOA) Well #2 (5)	No	2/9/21 5/25/21 9/21/21	0.83 Range (0.804-0.879)	ng/l	10	N/A	Released into the environment from widespread use in commercial and industrial applications.
Perfluorooctane sulfonic acid (PFOS) Well #2 (6)	No	2/9/21 5/25/21 9/21/21	0.28 Range (ND-0.842)	ng/l	10	N/A	Released into the environment from widespread use in commercial and industrial applications.

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Footnotes:

(1) The level presented represents the 90th percentile of the 10 samples taken in the first half and 10 samples taken in the second half of the year. A percentile is a value on a scale of 100 that indicates the percent of a distribution that is equal to or below it. The 90th percentile is equal to or greater than 90% of the copper values detected at your water system. In this case, 20 samples were collected at your water system and the 90th percentile value is the reported value.

(2) The level presented represents the 90th percentile of the 10 samples taken in the first half and 10 samples taken in the second half of the year. The action level for lead was not exceeded.

(3) Water containing more then 20 mg/l of sodium should not be used for drinking by people on severely restricted sodium diets. Water containing more then 270 mg/l should not be used for drinking by people on moderately restricted sodium diets.

(4) Before April 1, 2016, a violation occurs at systems collecting 40 or more samples per month when more than 5% of the total coliform samples are positive. A violation occurs at systems collecting less than 40 samples per month when two or more samples are total coliform positive. After April 1, 2016, a Level 1 assessment is triggered if 2 or more routine/repeat samples are total coliform positive in the same month

(5) PFOA caused a range of health effects when studied in animals at high exposure levels. The most consistent findings were effects on the liver and immune system and impaired fetal growth and development. Studies of high-level exposures to PFOA in people provide evidence that some of the health effects seen in animals may also occur in humans. The United States Environmental Protection Agency considers PFOA as having suggestive evidence for causing cancer based on studies of lifetime exposure to high levels of PFOA in animals

(6) PFOS caused a range of health effects when studied in animals at high exposure levels. The most consistent findings were effects on the liver and immune system and impaired fetal growth and development. Studies of high-level exposures to PFOS in people provide evidence that some of the health effects seen in animals may also occur in humans. The United States Environmental Protection Agency considers PFOS as having suggestive evidence for causing cancer based on studies of lifetime exposure to high levels of PFOS in animals.

Definitions:

Non - Detects (ND) - Laboratory analysis indicates that the constituent is not present.

Milligrams per liter (mg/l) – Corresponds to one part of liquid in one million parts of liquid (parts per million – ppm).

Micrograms per liter (ug/l) – Corresponds to one part of liquid in one billion parts of liquid (parts per billion – ppb).

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

Maximum Contaminant Level (MCL) - The highest level of a contaminant that is allowed in drinking water. MCL's are set as close to the MCLG's as feasible.

Maximum Contaminant Level Goal (MCLG) - The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLG's allow for a margin of safety

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

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

Picocuries per liter (pCi/L) – A measure of the radioactivity in water.
Threshold Odor Number (TON) – A whole number that indicates how many dilutions are needed to produce odor free water
Platinum Cobalt Scale (PtCo) – A standard test method for color of clear liquids specially intensively of yellow tinted samples

WHAT DOES THIS INFORMATION MEAN?

The table shows that our system uncovered some problems this year. The level of Chlorides is above the MCL.

Health Effects Language – Chloride is essential for maintaining good health. Research has not conclusively demonstrated that human exposure to chloride itself causes adverse health effects, although exposure to high levels of certain chloride salts has been associated with adverse health effects in humans. For example, high dietary intake of sodium chloride can be a contributing factor to high blood pressure, but this has been attributed mainly to the presence of sodium. The New York State standard for chloride is 250 milligrams per liter and is based on chloride's effects on the taste and odor of the water.

Health Effects Language -Iron is essential for maintaining good health. However, too much iron can cause adverse health effects. Drinking water with very large amounts of iron can cause nausea, vomiting, diarrhea, constipation and stomach pain. These effects usually diminish once the elevated iron exposure is stopped. A small number of people have a condition called hemochromatosis, in which the body absorbs and stores too much iron. People with hemochromatosis may be at greater risk for health effects resulting from too much iron in the body (sometimes called "iron overload") and should be aware of their overall iron intake. The New York State standard for iron in drinking water is 0.3 milligrams per liter, and is based on iron's effects on the taste, odor and color of the water.

Health Effects Language: Manganese - Manganese is a common element in rocks, soil, water, plants, and animals. Manganese occurs naturally in water after dissolving from rocks and soil. Contamination of drinking water may occur if manganese gets into surface or groundwater after dissolving from rocks and soil. It may also occur if manganese gets into surface or groundwater after improper waste disposal in landfills or by facilities using manganese in the production of steel or other products.

Manganese is an essential nutrient that is necessary to maintain good health. However, exposure to too much manganese can cause adverse health effects. There is some evidence from human studies that long-term exposure to manganese in drinking water is associated with nervous system effects in adults (e.g., weakness, stiff muscles and trembling of the hands) and children (learning and behavior). The results of these studies only suggest an effect because the possible influences of other factors were not adequately assessed. There is supporting evidence that manganese causes nervous system effects in humans from occupational studies of workers exposed to high levels of manganese in air, but the relevance of these studies to long term drinking water exposure is less clear because the exposures were quite elevated and by inhalation, not by ingestion.

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 higher than at other homes in the community because of materials used in your home's plumbing. Pinebrook Estates Water 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 the 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 compliant with all applicable State drinking water operating, monitoring, and reporting requirements except Iron, and Chloride. The following monitoring violation(s) have been issued to Pinebrook Water for required samples in 2021

1. Violation of Subpart 5-1.52, Table 1, Determination of MCL Violations note #2. MCL Exceedance of Chloride

What are we doing about this?
The DCWWA continued to operate on the existing water treatment facility until the interconnection to Hyde Park Regional was completed. December 20th, 2021, the northern connection at Pinebrook Dr. and Newington Dr. was completed and further construction was paused through the winter and will resume in Spring of 2022.

Do I Need to Take Special Precautions?

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/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 (800-426-4791).

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 several reasons why it is important to conserve water:

- Saving water saves energy and some of the costs associated with both 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
- Saving water 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 household 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 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.

Closing

Thank you for allowing us to continue to provide your family with quality drinking water this year. To maintain a safe and dependable water supply we sometimes need to make improvements that will benefit all our customers. The costs of these improvements may be reflected in the rate structure. Rate adjustments may be necessary to address these improvements. We ask that all our customers help us protect our water sources, which are the heart of our community. Please call our office if you have any questions.