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OH!!!



*NYC has the best water in the world!  
But don't just take our word for it.*

# New York City Drinking Water Supply and Quality Report - 2020

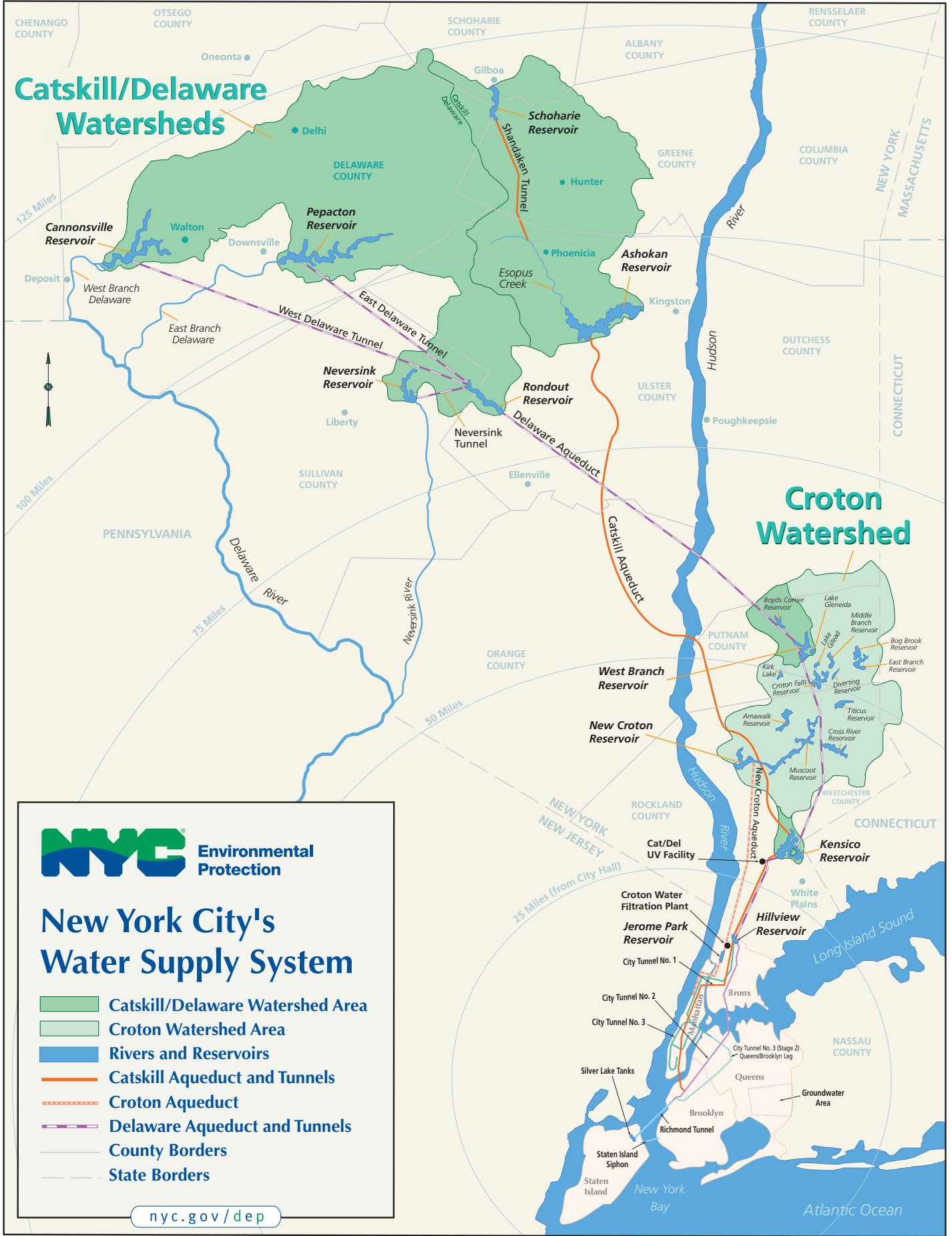
**NYC** Environmental Protection

Bill de Blasio  
Mayor

Vincent Sapienza, P.E.  
Commissioner

# Catskill/Delaware Watersheds

# Croton Watershed



**NYC Environmental Protection**

## New York City's Water Supply System

- Catskill/Delaware Watershed Area
- Croton Watershed Area
- Rivers and Reservoirs
- Catskill Aqueduct and Tunnels
- Croton Aqueduct
- Delaware Aqueduct and Tunnels
- County Borders
- State Borders

[nyc.gov/dep](http://nyc.gov/dep)



Dear Friends:

This past year has presented our agency, our city, and our nation with historic challenges. The work we do at the Department of Environmental Protection (DEP) has never been more vital to protecting the health of New Yorkers.

Despite the challenges presented by the COVID-19 global pandemic, we have remained focused and disciplined in our commitment to being a world-class water utility and building a sustainable future for all New Yorkers. At DEP, we are no strangers to confronting situations that require quick thinking and innovative solutions. Through all the challenges we faced in 2020, I am proud to report that each day we continued to deliver one billion gallons of the best tap water in the world to more than 9.3 million New Yorkers.

In this report, you will see that New York City's drinking water continued to meet or surpass every national and state standard for quality. These data are based on 43,600 samples that were collected by DEP scientists throughout our reservoir system, and at nearly 1,000 street-side sampling stations in every neighborhood across the city. Those samples were analyzed 530,000 times by scientists working in our four water quality laboratories. Robotic monitoring stations on our reservoirs provided another 2.7 million tests to ensure DEP was sending the best-quality water to New York City at all times.

I want to especially thank the many DEP employees who went above and beyond in 2020, putting their commitment to public service before themselves, and truly embodying DEP's core values. And, as we embark on a new decade, I also want to thank each of you for entrusting DEP with your drinking water supply. We take great pride in delivering the best water to millions of New Yorkers every day.

Sincerely,

A handwritten signature in black ink, appearing to read "Vincent Sapienza". The signature is fluid and cursive.

Vincent Sapienza, P.E.  
Commissioner





Throughout the COVID-19 pandemic, DEP's 6,000 dedicated scientists, engineers, and other professionals continued to protect, operate, and maintain New York City's water supply system, delivering high-quality drinking water to millions of New Yorkers around the clock, without interruption

## NEW YORK CITY'S WATER SUPPLY SYSTEM

New York City's water supply system provides more than one billion gallons of safe drinking water every day to more than 8.3 million residents of New York City and one million people living in the counties of Westchester, Putnam, Orange, and Ulster. In 2020, we delivered 104 million gallons per day to 74 communities and institutions outside NYC. In all, this system provides nearly half the population of New York State with high-quality drinking water.

New York City gets its drinking water from 19 reservoirs and three controlled lakes spread across a nearly 2,000-square-mile watershed. The watershed is located upstate in portions of the Hudson Valley and Catskill Mountains that are as far as 125 miles north of the city. New York City's water supply system is comprised of two primary surface water supplies called the Catskill/Delaware and Croton. The city also has a permit to operate a groundwater supply in Southeast Queens, although water from that system has not been delivered to customers in many years.

In 2020, New York City received a blend of drinking water from the Catskill/Delaware and Croton supplies. The Catskill/Delaware provided approximately 96 percent of the water, and approximately 4 percent was supplied by Croton. An estimated 10 percent of the water supply was lost due to distribution system leakage.



## TREATING OUR DRINKING WATER

### CATSKILL/DELAWARE SUPPLY

Due to the very high quality of our Catskill/Delaware supply, New York City is one of only five large cities in the country with a surface drinking water supply that does not utilize filtration as a form of treatment. The Catskill/Delaware supply operates under a filtration waiver, referred to as the “Filtration Avoidance Determination” (FAD), and the water from this supply is treated using two forms of disinfection to reduce microbial risk.

Water is disinfected with chlorine, a common disinfectant added to kill germs and stop bacteria from growing on pipes, and then with ultraviolet (UV) light at the Catskill/Delaware UV Disinfection Facility. The facility, located in Westchester County, is the largest of its kind in the world and is designed to disinfect more than two billion gallons of water per day. At the UV Disinfection Facility, exposure to UV light inactivates potentially harmful microorganisms without changing the water.

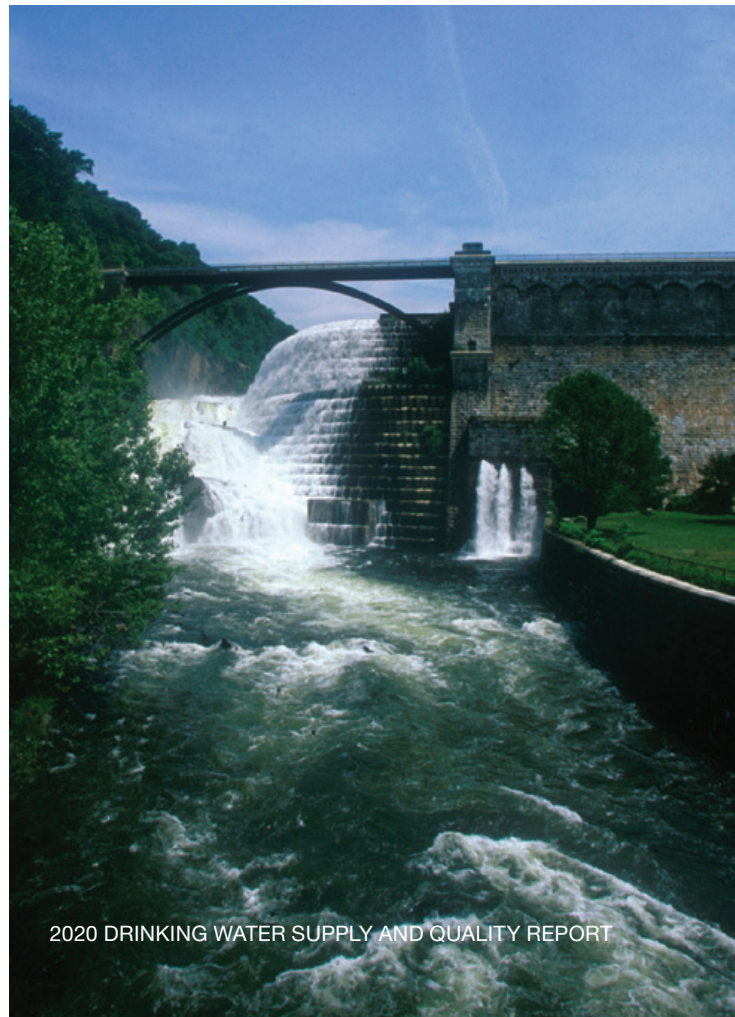
DEP also adds food grade phosphoric acid, sodium hydroxide, and fluoride to the water before sending it into distribution. Phosphoric acid is added because it creates a protective film on pipes that reduces the release of metals, such as lead, from service lines and household plumbing. Sodium hydroxide is added to raise the pH which reduces corrosion of household plumbing. Fluoride is added to improve dental protection and is effective in preventing cavities at a federally-approved level of 0.7 mg/L. During 2020, only 0.2 percent of the water produced by Catskill/Delaware supply was not fluoridated.

### CROTON SUPPLY

The Croton supply is filtered by the Croton Water Filtration Plant, located underground in the Bronx. The plant has the ability to treat up to 290 million gallons of drinking water each day, which helps to ensure a large enough supply of water for the city to withstand droughts, periodically shut down other parts of the water supply, and respond to the potential effects of climate change. The Croton Water Filtration Plant first began operating in May 2015.

Once water arrives at the filtration plant it undergoes treatment to remove impurities. The treatment processes include coagulation, dissolved air flotation, filtration, and disinfection. During coagulation, chemicals are added to untreated water, causing any particulates to bunch together and become larger particles called floc. Then injected air bubbles float the floc to the top where it is skimmed off using a process called dissolved air flotation. Finally, the water flows through a filter bed removing any remaining particles. Just like the Catskill/Delaware supply, Croton water is disinfected with chlorine and UV light to protect against potentially-harmful microorganisms, and is treated with food grade phosphoric acid, sodium hydroxide, and fluoride. In 2020, DEP upgraded the material in the filter beds from anthracite to granular activated carbon (GAC) to improve the plant’s performance. Once the change was completed, the plant resumed operations on October 27 to December 31, during which time, only 0.6 percent of the water produced by the plant was not fluoridated.

The New Croton Reservoir Dam



## TESTING FOR QUALITY DRINKING WATER SAMPLING AND MONITORING

DEP monitors the water in the distribution system, upstate reservoirs and feeder streams, and wells that are potential sources for New York City's drinking water supply. We continuously sample and conduct analyses for numerous water quality parameters, including microbiological, chemical, and physical measures, throughout the watershed and as the water enters the distribution system. DEP also regularly tests water quality at nearly 1,000 water quality sampling stations throughout New York City. In 2020, DEP performed over 363,200 analyses on 31,300 samples from the distribution system, meeting all state and federal monitoring requirements. These data are summarized in tables starting on page 11. Additionally, DEP performed over 166,800 analyses on 12,300 samples from the upstate reservoir watersheds and took more than 2.7 million robotic monitoring measurements to support FAD watershed protection programs and to optimize water quality.

### REGULATION OF DRINKING WATER

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.

To ensure that tap water is safe to drink, the New York State Department of Health (NYSDOH) and the United States Environmental Protection Agency (EPA) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. The NYSDOH and the federal Food and Drug Administration's (FDA) regulations establish limits for contaminants in bottled water, which must provide the same protection for public health. The presence of contaminants does not necessarily indicate that water poses a health risk. These regulations also establish the minimum amount of testing and monitoring that each system must undertake to ensure that the tap water is safe to drink.

Visit [epa.gov/safewater](https://epa.gov/safewater) or [health.ny.gov](https://health.ny.gov) for more information about drinking water.



DEP's water quality monitoring program—far more extensive than required by law—demonstrates that the quality of New York City's drinking water remains high and meets all state and federal drinking water standards



## PROTECTING OUR WATER AT THE SOURCE

### 10-YEAR FILTRATION AVOIDANCE DETERMINATION (FAD)

DEP funds and administers a number of watershed protection and pollution prevention programs to maintain the high quality of our drinking water. These science-based strategies are designed to protect New York City's drinking water at its source by keeping pollution out of our reservoirs and the streams, creeks, and rivers that feed them.

NYSDOH issued the most current FAD in 2017 that allows DEP to continue operating the Catskill/Delaware supply without filtration through at least 2027. DEP will commit an estimated \$1 billion over the coming decade to comply with the FAD, which will go towards our watershed programs that conserve watershed lands, upgrade wastewater infrastructure, implement clean water strategies on watershed farms, and manage streams, forests, and other natural resources that affect water quality.

### SOURCE WATER ASSESSMENT PROGRAMS

Federal regulations require states to develop and implement source water assessment programs to identify the areas that supply public tap water, inventory contaminants, assess water system susceptibility to contamination, and inform the public of the results. The states are given a great deal of flexibility on how to implement source water assessment programs. These assessments are created using available information to help estimate the potential for source water contamination. Higher susceptibility ratings do not mean that source water contamination has occurred or will occur in a water supply; rather, they indicate the need for water suppliers to implement additional precautionary measures. Because of DEP's extensive watershed protection and pollution prevention programs, NYSDOH does not find it necessary to perform a source water assessment on the New York City water supply.

Water quality monitoring  
at Bear Kill which leads to  
Schoharie Reservoir





## CONSERVING OUR SUPPLY

Although New York City has grown by more than 1.3 million people since 1980, demand for water has dropped by approximately 35 percent—making it one of the most water-efficient large cities in the country.

The average single-family household in New York City uses approximately 70,000 gallons of water each year at a cost of \$3.99 per 100 cubic feet of water (748 gallons), or about \$373 a year. Since nearly all customers also receive wastewater collection and treatment services, which cost about \$594, the combined annual water and sewer charge for the typical New York City household using 70,000 gallons per year is \$967, calculated at fiscal year 2021 rates.

Advances in technology have played a key role in the drop of water consumption, from the replacement of thousands of inefficient toilets through DEP's toilet replacement program, to an automated leak detection program, which helps our customers save both money and water by alerting homeowners to unusual spikes in water consumption. DEP has also partnered with other city agencies, colleges, and businesses to help conserve water by installing more than 400 spray shower timers in NYC Parks playgrounds, 34,000 efficient bathroom fixtures in 402 New York City public schools, and a water reuse station at the Fire Department of the City of New York's (FDNY) Fire Training Academy on Randall's Island which includes a 40,000-gallon underground water storage tank used for calibrating equipment on pumper apparatus.

These, and other recent investments, have reduced overall demand for water by more than 11.2 million gallons per day. By 2022, we plan to nearly double that by conserving 20 million gallons per day through new and ongoing initiatives.

## The DOs & DON'Ts of Water Conservation



### BATHROOM

- ✓ Do take shorter showers and fill the tub halfway.
- ✗ Don't run water while washing your hands & brushing your teeth.

### KITCHEN & LAUNDRY

- ✓ Do run the dishwasher & washing machine only when full.
- ✗ Don't let the water run while washing dishes. Kitchen faucets use 2 to 3 gallons a minute. Filling a basin only takes 10 gallons to wash and rinse.

### EVERYWHERE

- ✓ Do install water-saving fixtures.
- ✗ Don't ignore water leaks. Turn taps off tightly.

### OUTDOORS

- ✓ Do use a self-closing nozzle on your hose.
- ✗ Don't open fire hydrants.

**REPORT LEAKS & WATER WASTE**  
Call 311

## PLANNING FOR THE FUTURE

We are continuing to build upon DEP's legacy of long-term planning and have made significant progress on keystone projects already underway. In 2020, we completed the third year of an all-important capital project to rehabilitate the Catskill Aqueduct. Skilled workers replaced century-old valves along the northern 74 miles of the aqueduct and repaired minor leaks to ensure the aqueduct continues to deliver water from the Catskills to New York City after more than a century in service.

In May 2020, the final segment of steel lining was lowered into the Delaware Aqueduct Bypass Tunnel, marking another significant milestone in our project to repair the longest tunnel in the world. The last of 230 massive steel liners was lowered down an access shaft in the Town of Newburgh. Each steel segment is 16 feet in diameter, 40 feet long, and weighs 106,000 pounds. DEP expected to complete the installation of steel liners by August 2020, but laborers finished this vital portion of the \$1 billion project several months ahead of schedule. In addition to meeting this milestone, we also placed more than 70 percent of the tunnel's finished concrete liner.

This summer, DEP announced the start of subsurface analyses for the future upgrades to the dam and dikes at Ashokan Reservoir. Field work began in August to support future upgrades to the dam and dikes that impound water at the reservoir. The work focuses on gathering soil and bedrock samples that are needed for the engineering and design of upgrades at each structure. The subsurface investigations are connected to the Ashokan Century Program, a comprehensive, multi-year capital program to upgrade the dam, dikes, chambers and other infrastructure at Ashokan Reservoir. The program comprises the largest public works project in the Catskills in more than 50 years.

Work on steel liners for the Delaware Aqueduct Bypass Tunnel (each liner section is 16' in diameter and 40' long)





## CRYPTOSPORIDIUM AND GIARDIA

DEP maintains a comprehensive program to monitor its source waters and watersheds for the presence of *Cryptosporidium* and *Giardia*, microscopic organisms that can cause disease. In 2020, DEP collected weekly samples of water leaving Kensico Reservoir, prior to chlorination and UV disinfection, and leaving Hillview Reservoir, prior to secondary disinfection with chlorine. Water leaving New Croton Reservoir was sampled quarterly. Samples were analyzed using EPA Method 1623.1. The *Cryptosporidium* and *Giardia* data for water leaving the Kensico, Hillview, and New Croton reservoirs are presented in the table on page 14 of this report.

While there is no evidence that any cases of cryptosporidiosis or giardiasis have been caused by the New York City water supply, federal and state law requires all water suppliers to notify their customers about the potential risks from *Cryptosporidium* and *Giardia*. Cryptosporidiosis and giardiasis are intestinal illnesses caused by microscopic pathogens, which can be waterborne. Symptoms of infection include nausea, diarrhea, and abdominal cramps. 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 individuals, and infants, can be particularly at risk from infections. These people should seek advice from their health care providers about their drinking water. EPA/CDC guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium*, *Giardia*, and other microbial contaminants are available from EPA's Safe Drinking Water Hotline at 1-800-426-4791.

New York City's Waterborne Disease Risk Assessment Program (WDRAP), a partnership between DEP and DOHMH, helps assess and ensure the microbial safety of NYC's tap water. Under WDRAP, NYC conducts disease surveillance for *Cryptosporidium* and *Giardia* to track incidence and to examine patterns and potential risk exposures in the population. The city also conducts syndromic surveillance for gastrointestinal symptoms to monitor trends to ensure identification of any waterborne disease outbreak, should one occur. Disease and syndromic surveillance continued to indicate that there have been no outbreaks of *Cryptosporidium* and *Giardia* attributed to tap water consumption in New York City.



Throughout the COVID-19 pandemic, DEP scientists continued their work to insure the high-quality of New York City's drinking water supply



## LEAD IN DRINKING WATER: FREQUENTLY ASKED QUESTIONS

### IS THERE LEAD IN MY DRINKING WATER?

New York City's award-winning tap water is delivered virtually lead-free through 7,000 miles of lead-free aqueducts, tunnels, and water mains in the city's water supply system. However, homes built prior to 1961 may have lead service lines (which connect your house to the city's water main in the street), and some homes, regardless of the year they were built, could have household plumbing and internal fixtures that contain lead. Although New York City takes extensive steps to protect water in homes that may have lead in their plumbing, lead from plumbing may still be released into a home's drinking water. 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. DEP is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components.

### HOW CAN I FIND OUT IF I HAVE A LEAD SERVICE LINE?

Visit [nyc.gov/leadfree](https://nyc.gov/leadfree) to view an interactive map. This map offers historical information largely based on third-party plumbing records, supplemented, in some cases by information gathered during inspections.

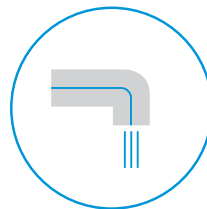
### HOW CAN I TEST THE WATER IN MY HOME?

DEP offers free lead test kits to all New York City residents. Call 311 or visit [nyc.gov/apps/311](https://nyc.gov/apps/311) to request a free lead test kit. 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 [epa.gov/safewater/lead](https://epa.gov/safewater/lead).

### WHAT ARE THE HEALTH EFFECTS OF LEAD?

Exposure to lead can cause serious health problems, especially for pregnant women, infants, and young children. For more information, visit [nyc.gov/lead](https://nyc.gov/lead).

## How can I limit my lead exposure?



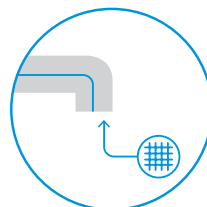
### Run Your Tap

for 30 seconds to 2 minutes before using water for drinking or cooking, when your water has been sitting for several hours.



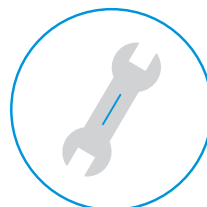
### Use Cold Water

for cooking, drinking, or preparing infant formula. Hot tap water is more likely to contain lead and other metals.



### Remove & Clean

the faucet screen monthly (also called an aerator), where small particles can get trapped.



### Hire

a licensed plumber to identify and replace plumbing fixtures and/or service line that contain lead.



DEP scientist performing water testing at the NYC Water Quality Distribution Laboratory

## HOW TO READ THE NEW YORK CITY 2020 DRINKING WATER QUALITY TESTING RESULTS

The following section of this report compares the quality of your tap water to federal and state standards for each parameter (if applicable). The monitoring results show that New York City's drinking water met all drinking water standards in 2020.

The following tables reflect the compliance monitoring results for all regulated and non-regulated parameters, the number of samples collected, the range of values detected, the average of the values detected, and the possible sources of the parameters, unless otherwise footnoted. The monitoring frequency of each parameter varies and is parameter specific. Data presented are for the Catskill/Delaware and Croton supplies, which were the only sources of water in 2020. The table on page 15 represents those parameters monitored for, but not detected in any sample.

Most of our data are representative of 2020 testing; concentrations of parameters or contaminants do not change frequently.

## THE NEW YORK CITY 2020 DRINKING WATER QUALITY TESTING RESULTS

<b>DETECTED CONVENTIONAL PHYSICAL AND CHEMICAL PARAMETERS</b>							
PARAMETER	NYSDOH MCL (Highest Level Allowed)	EPA MCLG (Ideal Goal)	# SAMPLES	RANGE	AVERAGE	MCL VIOLATION	LIKELY SOURCES IN DRINKING WATER
Alkalinity (mg/L CaCO <sub>3</sub> )	-		297	14 - 76	20	No	Erosion of natural deposits
Aluminum (µg/L)	50 - 200 <sup>(1)</sup>		300	8 - 40	13	No	Erosion of natural deposits
Barium (mg/L)	2	2	300	0.01 - 0.04	0.02	No	Erosion of natural deposits
Bromide (µg/L)	- <sup>(2)</sup>		8	8 - 35	20	No	Naturally occurring
Calcium (mg/L)	-		300	5 - 27	7	No	Erosion of natural deposits
Chloride (mg/L)	250		297	11 - 75	17	No	Naturally occurring; road salt
Chlorine Residual, Free (mg/L)	4 <sup>(3)</sup>		14,855	0.0 - 1.2	0.6 <sup>(3)</sup>	No	Water additive for disinfection
Chromium (µg/L)	100		300	ND - 4	ND	No	Erosion of natural deposits
Color - distribution system (color units - apparent)	-		13,651	3 - 47	6	No	Presence of iron, manganese, and organics in water
Color - entry points (color units - apparent)	15 <sup>(4)</sup>		1,207	3 - 12	6	No	Presence of iron, manganese, and organics in water
Copper (mg/L)	1.3 <sup>(5)</sup>	1.3	300	ND - 0.052	0.007	No	Corrosion of household plumbing; erosion of natural deposits
Corrosivity (Langelier index)	- <sup>(6)</sup>		76	-2.76 to -1.96	-2.31	No	
Fluoride (mg/L)	2.2 <sup>(4)</sup>	4	1,930	0.4 - 0.8	0.7	No	Water additive which promotes strong teeth; erosion of natural deposits
Hardness (mg/L CaCO <sub>3</sub> )	-		300	16 - 106	24	No	Erosion of natural deposits
Hardness (grains/gallon[US] CaCO <sub>3</sub> ) <sup>(7)</sup>	-		300	0.9 - 5.9	1.4	No	Erosion of natural deposits
Iron (µg/L)	300 <sup>(4) (8)</sup>		300	ND - 881 <sup>(8)</sup>	33	No	Naturally occurring
Lead (µg/L)	15 <sup>(5)</sup>	0	300	ND - 2 <sup>(9)</sup>	ND	No	Corrosion of household plumbing; erosion of natural deposits
Magnesium (mg/L)	-		300	1 - 9.3	1.7	No	Erosion of natural deposits

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## DETECTED CONVENTIONAL PHYSICAL AND CHEMICAL PARAMETERS (continued)

PARAMETER	NYSDOH MCL (Highest Level Allowed)	EPA MCLG (Ideal Goal)	# SAMPLES	RANGE	AVERAGE	MCL VIOLATION	LIKELY SOURCES IN DRINKING WATER
Manganese (µg/L)	300 <sup>(4) (8)</sup>		300	ND - 38	18	No	Naturally occurring
Nickel (µg/L)	-		300	ND - 2 <sup>(9)</sup>	ND	No	Erosion of natural deposits
Nitrate (mg/L nitrogen)	10	10	297	0.04 - 0.17	0.10	No	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
pH (pH units)	6.8 - 8.2 <sup>(10)</sup>		14,854	6.9 - 8.0	7.4	No	
Phosphate, Ortho- (mg/L)	1-4 <sup>(10)</sup>		14,855	1.2 - 3.5	2.1	No	Water additive for corrosion control
Potassium (mg/L)	-		300	0.4 - 2.5	0.7	No	Erosion of natural deposits
Silica [silicon oxide] (mg/L)	-		200	1.8 - 5.2	2.5	No	Erosion of natural deposits
Sodium (mg/L)	NDL <sup>(4) (11)</sup>		300	9 - 44	12	No	Naturally occurring; road salt; water softeners; animal waste
Specific Conductance (µS/cm)	-		14,858	80 - 461	109	No	
Strontium (µg/L)	-		300	16 - 84	23	No	Erosion of natural deposits
Sulfate (mg/L)	250		297	3 - 19	4	No	Naturally occurring
Temperature (°F)	-		14,854	38 - 82	56	No	
Total Dissolved Solids (mg/L)	500 <sup>(1)</sup>		77	53 - 89	71	No	Metals and salts naturally occurring in the soil; organic matter
Total Organic Carbon (mg/L)	-		378	0.7 - 3.0	1.6	No	Organic matter naturally present in the environment
Total Organic Carbon - source water (mg/L)	- <sup>(2)</sup>		8	2.1 - 4.2	3.1	No	Organic matter naturally present in the environment
Turbidity <sup>(12)</sup> - distribution system (NTU)	5 <sup>(13)</sup>		13,651	ND - 9.2	0.8 <sup>(13)</sup>	No	Soil runoff
Turbidity <sup>(12)</sup> - source water (NTU)	5 <sup>(14)</sup>		-	-	1.3 <sup>(14)</sup>	No	Soil runoff
Turbidity <sup>(12)</sup> - filtered water (NTU)	TT <sup>(15)</sup>		-	-	0.07 <sup>(15)</sup>	No	Soil runoff
UV 254 (absorbance/cm)	-		307	0.009 - 0.073	0.029	No	Organic matter naturally present in the environment
Zinc (mg/L)	5 <sup>(4)</sup>		300	ND - 0.019	ND	No	Naturally occurring

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## DETECTED ORGANIC PARAMETERS

PARAMETER	NYSDOH MCL (Highest Level Allowed)	EPA MCLG (Ideal Goal)	# SAMPLES	RANGE	AVERAGE	MCL VIOLATION	LIKELY SOURCES IN DRINKING WATER
Bis(2-Ethylhexy)phthalate (µg/L)	6		74	ND - 0.6 <sup>(9)</sup>	ND	No	Probable source is sample contamination from plastic gloves or air particulates
Bromochloroacetic Acid (µg/L)	50		293	ND - 4	1	No	By-product of drinking water chlorination
Bromodichloroacetic Acid (µg/L)	50 <sup>(2)</sup>		80	1 - 5	3	No	By-product of drinking water chlorination
t-Butyl alcohol	50		318	ND - D <sup>(16)</sup>	ND	No	Used in dyes, drugs, and explosives
Chlorodibromoacetic Acid (µg/L)	50 <sup>(2)</sup>		80	ND - 0.6	ND	No	By-product of drinking water chlorination
Dalapon (µg/L)	50		293	ND - 1.2	ND	No	By-product of drinking water chlorination
Haloacetic Acid 5 (HAA5) (µg/L)	60 <sup>(17)</sup>		293	4 - 72	51 <sup>(17)</sup>	No	By-product of drinking water chlorination
Haloacetic Acid Brominated (HAA6Br) (µg/L)	- <sup>(2)</sup>		80	2 - 9	4	No	By-product of drinking water chlorination
Haloacetic Acid 9 (HAA9) (µg/L)	- <sup>(2)</sup>		80	31 - 82	53	No	By-product of drinking water chlorination
Total Organic Halogen (µg/L)	-		56	157 - 227	187	No	By-product of drinking water chlorination
Total Trihalomethanes (TTHM) (µg/L)	80 <sup>(17)</sup>		300	7 - 75	51 <sup>(17)</sup>	No	By-product of drinking water chlorination

## DETECTED MICROBIAL PARAMETERS

PARAMETER	NYSDOH MCL (Highest Level Allowed)	EPA MCLG (Ideal Goal)	# SAMPLES	RANGE	# SAMPLES POSITIVE	AVERAGE	HIGHEST MONTH % POSITIVE	MCL VIOLATION	LIKELY SOURCES IN DRINKING WATER
Total Coliform Bacteria (% of samples positive/month)	5%	0	9,806	-	33	-	1.1%	No	Naturally present in the environment
<i>E. coli</i> (MPN/100mL)	- <sup>(18)</sup>	0	9,806	-	0	-	0.0%	No	Animal fecal waste
Heterotrophic Plate Count (CFU/mL)	TT	-	8,571	ND - 95	92	ND	-	No	Naturally present in the environment

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## LEAD AND COPPER RULE SAMPLING AT RESIDENTIAL WATER TAPS

PARAMETER	NYSDOH AL	EPA MCLG (Ideal Goal)	90% OF YOUR LEVELS WERE LESS THAN	RANGE	# SAMPLES EXCEEDING AL	Exceedance	LIKELY SOURCES IN DRINKING WATER
Copper (mg/L)	1.3	1.3	0.204	0.005 - 0.640	0 out of 411	No	Corrosion of household plumbing
Lead (µg/L)	15	0	11	ND - 120	28 out of 411	No	Corrosion of household plumbing

## CRYPTOSPORIDIUM AND GIARDIA SAMPLING FROM SOURCE WATER LEAVING RESERVOIRS <sup>(19)</sup>

PARAMETER	RESERVOIR	# SAMPLES	# SAMPLES POSITIVE	RANGE	LIKELY SOURCES IN DRINKING WATER
<i>Cryptosporidium</i> (oocysts/50L)	Kensico	52	3	0 - 1	Animal fecal waste
	Hillview	52	2	0 - 1	
	Croton	4	0	0	
<i>Giardia</i> (cysts/50L)	Kensico	52	35	0 - 17	Animal fecal waste
	Hillview	52	17	0 - 5	
	Croton	4	3	0 - 8	

### UNITS AND ABBREVIATIONS

**CaCO<sub>3</sub>** = calcium carbonate

**CFU/mL** = colony forming units per milliliter

**/cm** = per centimeter

**D** = detected parameter

**°F** = degrees Fahrenheit

**µg/L** = micrograms per liter (10<sup>-6</sup> grams per liter)

**µS/cm** = microsiemens per centimeter

**mg/L** = milligrams per liter (10<sup>-3</sup> grams per liter)

**MPN/100mL** = most probable number per 100 milliliters

**ND** = parameter is not detected

**NDL** = no designated limits

**NTU** = nephelometric turbidity units

**/50L** = per 50 liters

### DEFINITIONS

#### Action Level (AL):

The concentration of a contaminant, which, if exceeded, triggers treatment or other requirements that a water system must follow.

#### 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 a disinfectant allowed in drinking water. The 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.

#### 90<sup>th</sup> Percentile Value:

The values reported for lead and copper represent the 90<sup>th</sup> percentile. A percentile is a value on a scale of 100 that indicates the percent of a distribution that is equal to or below the value. The 90<sup>th</sup> percentile is equal to or greater than 90 percent of the lead and copper values detected at your water system.



## NOT DETECTED PARAMETERS

### Conventional Physical and Chemical Parameters:

Antimony, Arsenic, Asbestos, Beryllium, Cadmium, Cyanide, Gross alpha, Lithium, Mercury, Nitrite, Selenium, Silver, Thallium, Uranium

### Principal Organic Contaminants:

Benzene, Bromobenzene, Bromochloromethane, Bromomethane, n-Butylbenzene, sec-Butylbenzene, tert-Butylbenzene, Carbon tetrachloride, Chlorobenzene, Chloroethane\*, Chloromethane, 2-Chlorotoluene, 4-Chlorotoluene, Dibromomethane, 1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, Dichlorodifluoromethane, 1,1-Dichloroethane, 1,2-Dichloroethane, 1,1-Dichloroethene, cis-1,2-Dichloroethylene, trans-1,2-Dichloroethylene, 1,2-Dichloropropane, 1,3-Dichloropropane, 2,2-Dichloropropane\*, 1,1-Dichloropropene, cis-1,3-Dichloropropene, trans-1,3-Dichloropropene, total 1,3-Dichloropropene, Ethylbenzene, Hexachlorobutadiene, Isopropylbenzene, p-Isopropyltoluene, Methylene chloride, n-Propylbenzene, Styrene, 1,1,1,2-Tetrachloroethane, 1,1,2,2-Tetrachloroethane, Tetrachloroethylene, Toluene, 1,2,3-Trichlorobenzene, 1,2,4-Trichlorobenzene, 1,1,1-Trichloroethane, 1,1,2-Trichloroethane, Trichloroethene, Trichlorofluoromethane, 1,2,3-Trichloropropane, 1,3,5-Trimethylbenzene, m,p-Xylene, o-Xylene, total Xylene

### Specified Organic Contaminants:

Alachlor, Aldicarb (Temik), Aldicarb sulfone, Aldicarb sulfoxide, Aldrin, Atrazine, Benzo(a)pyrene, Butachlor, Carbaryl, Carbofuran (Furadan), Chlordane, 2,4-D, 1,2-Dibromo-3-chloropropane, Di(2-ethylhexyl)adipate, Dicamba, Dieldrin, Dinoseb, 1,4-Dioxane, Diquat, Endothall, Endrin, Ethylene dibromide (EDB), Glyphosate, Heptachlor, Heptachlor epoxide, Hexachlorobenzene, 3-Hydroxycarbofuran, Lindane, Methomyl, Methoxychlor, Methyl-tertiary-butyl-ether (MTBE), Metolachlor, Metribuzin, Oxamyl (Vydate), Pentachlorophenol, Perfluorooctanesulfonic acid (PFOS), Perfluorooctanoic acid (PFOA), Picloram, Polychlorinated biphenyls (PCBs), PCB 1016 Aroclor, PCB 1221 Aroclor, PCB 1232 Aroclor, PCB 1242 Aroclor, PCB 1248 Aroclor, PCB 1254 Aroclor, PCB 1260 Aroclor, Propachlor, Simazine, 2,3,7,8-TCDD (Dioxin), Toxaphene, 2,4,5-TP (Silvex), Vinyl chloride

### Unspecified Organic Contaminants:

Acenaphthene, Acenaphthylene, Acetochlor, Acetone, Acifluorfen, Allyl chloride, Ametryn, t-amyl ethyl ether, tert-Amyl methyl ether, Anthracene, Atraton, Bentazon, Benzo[a]anthracene, Benzo[b]fluoranthene, Benzo[g,h,i]perylene, Benzo[k]fluoranthene, beta-BHC, Bromacil, Bromoethane, 1,3-Butadiene, 2-Butanone (MEK), Butylate, Butylated hydroxytoluene (BHT), Butylbenzylphthalate, tert-Butyl ethyl ether, Caffeine, Carbon Disulfide, alpha-Chlordane, gamma-Chlordane, trans-Chlordane, Chlorfenvinphos, Chlorobenzilate, 2-Chlorobiphenyl, 4-Chlorobiphenyl, 1-Chlorobutane, Chlorodifluoromethane, Chloroneb, Chlorothalonil (Draconil, Bravo), Chlorpropham, Chlorpyrifos (Dursban), Chrysene, Cyanazine, Cycloate, 2,4-DB, DCPA (Dacthal), 2,4-DDD, 4,4'-DDD, 2,4-DDE, 4,4'-DDE, 2,4-DDT, 4,4'-DDT, DEET, Diazinon, Dibenz[a,h]anthracene, 3,5-Dichlorobenzoic acid, 2,4'-Dichlorobiphenyl, Dichlorprop, Dichlorvos (DDVP), Diethyl ether, Diethylphthalate, Di-isopropyl ether, Diisopropyl methylphosphonate, Dimethipin, Dimethoate, Dimethylphthalate, Di-n-Butylphthalate, 2,4-Dinitrotoluene, 2,6-Dinitrotoluene, Di-N-octylphthalate, Diphenamid, Disulfoton, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin aldehyde, Endrin Ketone, EPTC, Ethion, Ethoprop, Ethyl methacrylate, Etridiazole, Fenarimol, Fluoranthene, Fluorene, Fluridone, alpha-HCH, beta-HCH, delta-HCH, 2,2',3,4,4',5,5'-Heptachlorobiphenyl, 2,2',3,4,4',5'-Hexachlorobiphenyl, 2,2',3,4',5',6-Hexachlorobiphenyl, 2,2',4,4',5,5'-Hexachlorobiphenyl, Hexachloroethane, Hexachlorocyclopentadiene, Hexazinone, Indeno[1,2,3-cd]pyrene, Isophorone, Malathion, Methiocarb, Methyl acetate, Methyl iodide, Methyl parathion, 4-Methyl-2-pentanone (MIBK), Mevinphos, MGK264 - isomer a, MGK264 - isomer b, Molinate, Naphthalene, Napropamide, Nitrofen, cis-Nonachlor, trans-Nonachlor, Norflurzon, Oxyfluorfen, Paraquat, Parathion, Pebulate, Pendimethalin, 2,3,3',4',6-Pentachlorobiphenyl, 2,3',4,4',5-Pentachlorobiphenyl, Pentachloroethane, Perfluorobutanesulfonic acid, Perfluorodecanoic acid, Perfluorododecanoic acid, Perfluoroheptanoic acid, Perfluorohexanesulfonic acid, Perfluorohexanoic acid, Perfluorononanoic acid, Perfluorotetradecanoic acid, Perfluorotridecanoic acid, Perfluoroundecanoic acid, cis-Permethrin & trans-Permethrin, Permethrin (mixed isomers), Phenanthrene, Phorate, Phosphamidon, Profenofos, Prometon, Prometryn, Pronamide, Propazine, Propoxur (Baygon), Pyrene, Simetryn, 2,4,5-T, Tebuconazole, Tebuthiuron, Terbacil, Terbutylazine, Terbutryn, 2,2',3,5'-Tetrachlorobiphenyl, 2,2',5,5'-Tetrachlorobiphenyl, 2,3',4',5-Tetrachlorobiphenyl, Tetrachlorovinphos, Tetrahydrofuran, Thiobencarb, Triademefon, Tribufos, 2,2',5-Trichlorobiphenyl, 2,4,4'-Trichlorobiphenyl, Trichlorotrifluoroethane (Freon 113), Trifluralin, 1,2,4-Trimethylbenzene, Vernolate, Vinclozolin

## 2020 MONITORING DATA FOOTNOTES

- (1) EPA Secondary MCL: NYSDOH has not set an MCL for this parameter.
  - (2) Monitored for under the Fourth Unregulated Contaminant Monitoring Rule (UCMR4) in 2018 and 2019. UCMR4 included source water monitoring for bromide and total organic carbon; no MCL has been established for these parameters.
  - (3) Value represents MRDL, which is a level of disinfectant added for water treatment that may not be exceeded at the consumer's tap without an unacceptable possibility of adverse health effects. The MRDL is enforceable in the same manner as an MCL and is the calculated running annual average. Data presented are the range of individual sampling results and the highest of the four quarterly running annual averages.
  - (4) Determination of MCL violation: If a sample exceeds the MCL, a second sample must be collected from the same location within two weeks, or as soon as practical. If the average of the two results exceeds the MCL, then an MCL violation has occurred.
  - (5) Action Level (not an MCL) measured at-the-tap. The data presented in this table were collected from sampling stations at the street curb. For at-the-tap monitoring, see the Lead and Copper Rule Sampling at Residential Water Taps table.
  - (6) A Langelier Index of less than zero indicates corrosive tendencies.
  - (7) Hardness of up to 3 grains per gallon is considered soft water; between 3 and 9 is moderately hard water.
  - (8) If iron and manganese are present, the total concentration of both should not exceed 500 µg/L. One exceedance of the iron MCL occurred at site 30150 (East Village, 10009) on 7/7/20 following an emergency shutdown of the water main.
  - (9) Only detected in one sample: lead was detected at site 11750 (City Island, 10464) on 6/2/20, nickel was detected at site 22950 (Clinton Hill, 11205) on 7/7/20, and Bis(2-Ethylhexyl)phthalate was detected at site 1SCL1 (Van Cortlandt Village, 10463) on 11/17/20 at the method reporting limit. In all other samples the parameter was not detected.
  - (10) NYSDOH established Optimal Water Quality Parameters (OWQP) under the Lead and Copper Rule which includes a range for pH and ortho-phosphate which are presented here. The reported average value for pH is the median value.
  - (11) Water containing more than 20 mg/L of sodium should not be used for drinking by people on severely restricted sodium diets. Water containing more than 270 mg/L of sodium should not be used for drinking by people on moderately restricted sodium diets.
  - (12) Turbidity is a measure of cloudiness of the water. Turbidity is monitored because it is a good indicator of water quality, because high turbidity can hinder the effectiveness of disinfection, and because it is a good indicator of the effectiveness of our filtration system.
  - (13) This MCL for turbidity is the monthly average rounded off to the nearest whole number. Data presented are the range of individual sampling results and the highest monthly average from distribution sites.
  - (14) This MCL for turbidity is on individual readings taken every four hours at the unfiltered Catskill/Delaware source water entry point. Value presented is the highest individual sampling result.
  - (15) This is a Treatment Technique performance standard for the Croton Filtration Plant. The value presented is the highest single combined filter effluent turbidity measurement which occurred on 11/25/20. In 2020, 100% of turbidity results were <0.3 NTU.
  - (16) Results for t-Butyl alcohol are only reported as detected (D) or not detected (ND).
  - (17) The MCLs for HAA5 and TTHMs are the calculated locational running annual average. The data in the Range column are the minimum and maximum values of all sample sites monitored in the distribution system whether for compliance purposes or not. The values in the Average column are the highest locational running annual averages under the Stage 2 Disinfectant and Disinfection By-Products Rule.
  - (18) If a sample and its repeat sample are both positive for coliform bacteria and one of the two samples is positive for *E. coli*, then an MCL violation has occurred.
  - (19) Samples are collected prior to final disinfection or filtration. Positive results indicate (oo)cyst detection, not viability or infectivity.
- \* Chloroethane and 2,2-Dichloropropane were incorrectly reported as having been monitored for in 2015 to 2019 in those year's reports. Monitoring for these two parameters, prior to 2020, last occurred in 2014 when they were not detected.

## HILLVIEW RESERVOIR CONSENT JUDGEMENT

The Hillview Reservoir is the final stop for drinking water from the Catskill/Delaware System before it enters the city's distribution system. The City and DEP entered into a Consent Decree and Judgement with the United States and New York State, effective May 15, 2019, which sets forth a schedule of compliance for the City to cover the Hillview Reservoir as required by the Long Term 2 Enhanced Surface Water Treatment Rule (40 C.F.R §141.714). DEP and the City timely complied with all scheduled commitments due under the Decree in 2020.

## ADDITIONAL INFORMATION

**PUBLIC WATER SYSTEM IDENTIFICATION NUMBER**  
(PWSID) NY7003493

**NEW YORK CITY DEPARTMENT OF ENVIRONMENTAL PROTECTION**  
Commissioner Vincent Sapienza, P.E. // 718-595-3000 // [nyc.gov/dep](http://nyc.gov/dep)  
59-17 Junction Blvd, Flushing, NY 11373.

**NEW YORK CITY WATER BOARD**  
Visit [nyc.gov/waterboard](http://nyc.gov/waterboard) for a list of upcoming meetings and information about opportunities to participate in decisions that affect water quality.

### CONTAMINANTS QUESTIONS

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 EPA's Safe Drinking Water Hotline at 1-800-426-4791.

### CRYPTOSPORIDIUM AND GIARDIA QUESTIONS

DOHMH Bureau of Communicable Diseases // 347-396-2600

### CUSTOMER BILLING QUESTIONS

DEP Customer Service // 718-595-7000 // [nyc.gov/dep](http://nyc.gov/dep)

### LEAD IN DRINKING WATER QUESTIONS

DEP Lead Unit // 718-595-5364 // [nyc.gov/dep/leadindrinkingwater](http://nyc.gov/dep/leadindrinkingwater)

### HEALTH QUESTIONS (WATER SUPPLY-RELATED)

DOHMH // Call 311 or 212-NEW YORK (639-9675) // [nyc.gov/apps/311](http://nyc.gov/apps/311)  
NYSDOH Bureau of Water Supply Protection // 518-402-7650 // [health.ny.gov](http://health.ny.gov)

### REPORT UNUSUAL COLOR, TASTE OR ODOR OF DRINKING WATER

Call 311 or 212-NEW YORK (639-9675) // [nyc.gov/apps/311](http://nyc.gov/apps/311)

### REPORT POLLUTION, CRIME, OR TERRORISM IN THE WATERSHED

DEP Police and Security // 888-H2O-SHED (426-7433) // [nyc.gov/dep](http://nyc.gov/dep)

### REQUEST ADDITIONAL COPIES OF THIS REPORT OR VIEW REPORT ONLINE

Call 311 or 212-NEW YORK (639-9675) // [nyc.gov/waterqualityreport](http://nyc.gov/waterqualityreport)

### TTY SERVICES

Call 212-504-4115





**This report contains important information about your drinking water. Translate it, or speak with someone who understands it.**

Este reporte contiene información muy importante sobre el agua que usted toma. Haga que se la traduzcan o hable con alguien que la entienda.

Ce rapport contient des informations importantes sur votre eau potable. Traduisez-le ou parlez en avec quelqu'un qui le comprend bien.

Rapò sa a gen enfòmasyon ki enpòtan anpil sou dlo w'ap bwè a. Fè tradwi-l pou ou, oswa pale ak yon moun ki konprann sa ki ekri ladan-l.

Ten raport zawiera bardzo istotną informację o twojej wodzie pitnej. Przetłumacz go albo porozmawiaj z kimś kto go rozumie.

В этом материале содержится важная информация относительно вашей питьевой воды. Переведите его или поговорите с кем-нибудь из тех, кто понимает его содержание.

這個報告中包含有關你的飲用水的重要信息。請將此報告翻譯成你的語言，或者詢問懂得這份報告的人。

이 보고서는 귀하의 식수에 관한 매우 중요한 정보를 포함하고 있습니다. 이 정보에 대해 이해하는 사람에게 그 정보를 번역하거나 통역해 받으십시오.

এই প্রতিবেদনে আপনার পানীয় জল সম্পর্কে গুরুত্বপূর্ণ তথ্য রয়েছে

يتضمن هذا التقرير معلومات هامة حول مياه الشرب الخاصة بك. ترجمه أو تحدث مع شخص يفهمه.

یہ رپورٹ آپ کے پینے کے پانی کے بارے میں اہم معلومات پر مشتمل ہے۔ اس کا ترجمہ کریں یا ان سے بات کریں جو یہ رپورٹ سمجھتے ہیں۔

