



Annual
WATER
QUALITY
REPORT

Reporting Year 2013



Presented By
Croton-on-Hudson

PWS ID#: 5903425

There When You Need Us

We are once again proud to present our annual water quality report covering all testing performed between January 1 and December 31, 2013. Over the years, we have dedicated ourselves to producing drinking water that meets all State and Federal standards. We continually strive to adopt new methods for delivering the best-quality drinking water to you. As new challenges to drinking water safety emerge, we remain vigilant in meeting the goals of source water protection, water conservation, and community education while continuing to serve the needs of all our water users.

Please remember that we are always available to assist you should you ever have any questions or concerns about your water.

Community Participation

You are invited to participate in our public forum and voice your concerns about your drinking water. The Village Board of Trustees meets on the first and third Mondays of each month beginning at 8:00 p.m. at the Stanley H. Kellerhouse Municipal Building, One Van Wyck Street, Croton-on-Hudson, NY 10520.

Facility Modification and System Improvements

The refurbishment of wells 1, 3 and 4 by Subsurface Technologies, Inc., is in progress. This work will result in greater output from the wells and increased well pump efficiency.

The water main improvement project for the Harmon and Wolf Road/Cook Lane areas has been awarded and work is expected to begin in May/June and continue through 2014 and into 2015.

The water main improvement project for the Farrington Road and Hunter Place areas is expected to be bid in early summer with construction by early fall.

Improvements at the well field to increase chlorine contact time are in design with construction planned for later in 2014.

Design work has begun on a corrosion control treatment system to reduce copper levels at the tap.

Facts and Figures

The water system supplies approximately 8,060 people, primarily in residences but also in businesses and industries, through approximately 2,500 service connections. During 2013, the total amount of water withdrawn from the aquifer was approximately 404-million gallons. The daily average volume of water treated and pumped into the distribution system was slightly more than 1.0-million gallons per day. Approximately 93% of the total water produced was billed directly to consumers. The balance, or unaccounted-for water, was used for firefighting, hydrant use, distribution system leaks, and unauthorized use. The 2013 billing charge has six tiers. Tier 1 which is base service up to 6,700 gallons is a base rate of \$45.23 per billing cycle. Tier 2 which is 901 cubic ft. to 100,000 cubic ft. a year is \$7.87 per 1,000 gallons. Tier 3 is 100,001 cubic ft. per year to 500,000 cubic ft. per year is \$8.66 per 1,000 gallons. Tier 4 is 501,000 cubic ft. per year to 1,000,000 cubic ft. per year is \$8.82 per 1,000 gallons. Tier 5 is 1,000,001 cubic ft. per year to 1,500,000 cubic ft. per year is \$9.05 per 1,000 gallons. Tier 6 is over 1.5 million or more cubic ft. per year is \$9.45 per 1,000 gallons.

Substances That Could Be in 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.**

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. In order to ensure that tap water is safe to drink, the State and the U.S. EPA prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. The State Health Department's and the U.S. FDA's regulations establish limits for contaminants in bottled water that must provide the same protection for public health. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline at (800) 426-4791.

Where Does My Water Come From?

The Village of Croton-on-Hudson's main water source is a well system located in the Croton River Valley downstream from the New Croton Dam. Treated water is pumped directly from the well field into the distribution system, which consists of a network of water mains, four storage tanks (reservoirs), control valves, booster pump stations, hydrants, and other water-related infrastructure. The Village's total distribution system storage capacity is 2.3 million gallons. Most residents receive water from the municipal water system; the remainder use private wells, which are not covered by this report.

Important Health Information

Some people may be more vulnerable to disease causing microorganisms or pathogens in drinking water than the general population. Immunocompromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants 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 pathogens are available from the Safe Drinking Water Hotline at (800) 426-4791.

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. Lead in drinking water is primarily from materials used in your home's plumbing. We are responsible for providing high-quality drinking water, but we 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 (800) 426-4791 or at www.epa.gov/safewater/lead.

How Is My Water Treated?

Groundwater pumped from the sand and gravel aquifer is treated with chlorine at the water treatment plant for disinfection purposes. We carefully monitor the amount of chlorine, adding the quantity necessary to protect the safety of our water without compromising taste or other water-quality parameters.

Water Conservation Tips

You can play a role in conserving water and save yourself money in the process 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. Here are few tips:

- 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 an invisible toilet leak. Fix it and you save more than 30,000 gallons a year.
- Use your water meter to detect hidden leaks. Simply turn off all taps and water-using appliances. Then check the meter after 15 minutes. If it moved, you have a leak.

QUESTIONS?

For more information about this report, or for any questions relating to your drinking water, please call John Spatta, Water Foreman, at (914) 271-3775 or Westchester County Department of Health at (914) 813-5000 or visit www.westchestergov.com/health.

Source Water Assessment

The New York State Department of Health (NYS DOH) has completed a Source Water Assessment for this system. Based on available information, potential and actual threats to this drinking water source were evaluated. The State Source Water Assessment includes a susceptibility rating based on the risk posed by each potential source of contamination and how easily contaminants can move through the subsurface to the wells. The susceptibility rating is an estimate of the potential for contamination of the source water; it does not mean that the water delivered to consumers is, or will become contaminated. See the section "Sampling Results" for a list of the contaminants that have been detected. The source water assessments provide resource managers with additional information for protecting source waters into the future.

The Source Water Assessment has rated our three wells as having a medium-high susceptibility to microbes. These ratings are due primarily to the fact that the wells are high-yielding wells, drawing from a possible unconfined aquifer, which is a shallow aquifer that occurs immediately below the ground surface and has no overlying protective layer to prevent contamination from potential sources. While the Source Water Assessment rates our wells as being susceptible to microbes, please note that our water is disinfected to ensure that the finished water delivered into your home meets New York State's drinking water standards for microbial contamination.

A copy of the Source Water Assessment can be obtained for a fee by contacting the Village Engineering Department at (914) 271-4783.

Nondetected Substances

As required by State regulations, we routinely test our drinking water for numerous contaminants. In 2013 and previous years, the following substances were tested for and were not detected: Alachlor, Aldicarb, Aldicarb Sulfoxide, Aldicarb Sulfone, Arsenic, Atrazine, Carbofuran, Chlordane, Dibromochloropropane, 2,4-D, Diquat, Endrin, Ethylene Dibromide, Heptachlor, Heptachlor Epoxide, Lindane, Methoxychlor, PCBs, Pentachlorophenol, Toxaphene, 2,4,5-TP (Silvex), Aldrin, Benzo(a)pyrene, Butachlor, Carbaryl, Dalapon, Di-(2-ethylhexyl)adipate, Di-(2-ethylhexyl)phthalate, Dicamba, Dieldrin, Dinoseb, Endothall, Glyphosate, Hexachlorobenzene, Hexachlorocyclopentadiene, 3-Hydroxycarbofuran, Methomyl, Metolachlor, Metribuzin, Oxamyl(vydate), Picloram, Propachlor, Simazine, 2,3,7,8-TCDD (Dioxin), Cyanide, Cadmium, Chromium, Mercury, Selenium, Antimony, Beryllium, Organohalide, Toxaphene, Dalapon, Microextractables, Benzene, Bromobenzene, Bromomethane, n-Butylbenzene, Bromochloromethane, 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, cis-1,2-Dichloroethene, 1,2-Dichloropropane, 2,2-Dichloropropane, 1,1-Dichloropropene, cis-1,3-Dichloropropene, trans-1,3-Dichloropropene, hexachlorobutadiene, isopropylbenzene, p-isopropyltoluene, methylene chloride, n-propylbenzene, styrene, 1,1,1,2-tetrachloroethane, 1,1,2,2-tetrachloroethane, tetrachloroethene, toluene, 1,2,3-trichlorobenzene, 1,2,4-trichlorobenzene, 1,1,1-trichloroethane, 1,1,2-trichloroethane, trichloroethene, trichlorofluoromethane, 1,2,3-trichloropropane, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, p/m-xylene, o-xylene, vinyl chloride, methyl tert butyl ether, trans-1,2-Dichloroethene, monochloroacetic acid, monobromoacetic acid, dibromoacetic acid, fluoride, ethylbenzene, Odor, Silver, Thallium, and Nitrite.

About Our Violations

| Violation | Violation Type | Explanation | Date and Length of Violation | Steps Taken to Correct Violation | Health Effects |
|---------------------|--------------------------------|--|---|--|--|
| Treatment Technique | Groundwater Rule | Inadequate chlorine contact time for compliance | Chlorine contact time violation dated August 24, 2010; length is ongoing. | Chlorine contact time violation partially corrected. Free chlorine residual was increased from 0.6 to 1.1 mg/L at entry point; full compliance by December 31, 2014. Westchester County Health Department has reviewed design plans submitted by Chazen Engineering; comments from the WCHD are being addressed. | Inadequately treated or inadequately protected water may contain disease-causing organisms. These organisms can cause symptoms such as diarrhea, nausea, cramps, and associated headaches. |
| Action Level | Lead & Copper Rule | The copper sampling 90th percentile value for the 40 samples collected was 1.58 mg/L, which exceeded the action level of 1.3 mg/L. | Copper Action Level exceeded April 2013; length is ongoing. | Chazen Engineering is being retained to design a corrosion control treatment system that will reduce copper levels at consumer taps. | Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's Disease should consult their personal doctors. |
| Sampling | Lead & Copper | 40 samples required; 20 samples collected | Jan.–June 2013 | 40 samples collected between July-Dec 2013; now in compliance | NA |
| Sampling | Lead & Copper Water Parameters | Water quality parameters were not collected from sources and distribution system | Jan.–June 2013 | Water Quality parameters collected in December 2013 and early 2014; now in compliance | NA |
| Sampling | Lead & Copper | Source water Lead & Copper samples not collected | Jan.–June 2013 | Source Water lead and copper samples collected Dec 2013; now in compliance | NA |

Sampling Results

During the past year, we have taken hundreds of water samples in order to determine the presence of any radioactive, biological, inorganic, volatile organic, or synthetic organic contaminants. The tables below show only those contaminants that were detected in the water. The State requires us to monitor for certain substances less often than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

REGULATED SUBSTANCES

| SUBSTANCE (UNIT OF MEASURE) | DATE SAMPLED | MCL [MRDL] | MCLG [MRDLG] | AMOUNT DETECTED | RANGE LOW-HIGH | VIOLATION | TYPICAL SOURCE |
|---|-----------------|----------------|-----------------|--------------------|-------------------|-----------|---|
| Barium (ppm) | 06/20/2013 | 2 | 2 | 0.0364 | 0.0284–0.0364 | No | Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits |
| Beta Particle/Photon Activity [from man-made radionuclides] ¹ (pCi/L) | 06/20/2013 | 50 | 0 | 1.51 | 0.612–1.51 | No | Decay of natural deposits and man-made emissions |
| Chloride (ppm) | 06/20/2013 | 250 | NA | 60.8 | 52.9–60.8 | No | Naturally occurring or indicative of road salt contamination |
| Chlorine (ppm) | 2013 | [4] | [4] | 1.1 | 0.1–1.1 | No | Water additive used to control microbes |
| Color (Units) | 06/20/2013 | 15 | NA | 5 | ND–5 | No | Large quantities of organic chemicals, inadequate treatment, high disinfectant demand, potential for excess amounts of disinfectant by-products, presence of metals like copper, iron and manganese; decaying leaves, plants, and soil organic matter |
| Combined Radium [226 and 228] | 06/20/2013 | 5 | 0 | 0.3 | ND–0.3 | No | Erosion of natural deposits |
| Gross Alpha Activity [including radium 226 but excluding radon and uranium] (pCi/L) | 06/20/2013 | 15 | 0 | 0.185 | ND–0.185 | No | Erosion of natural deposits |
| Haloacetic Acids–Stage 1 ² (ppb) | 08/01/2013 | 60 | NA | 7.7 | 5.3–7.7 | No | By-product of drinking water disinfection needed to kill harmful organisms |
| Manganese (ppb) | 06/20/2013 | 300 | NA | 0.11 | ND–0.11 | No | Naturally occurring; Indicative of landfill contamination |
| Nitrate (ppm) | 04/25/2013 | 10 | 10 | 0.46 | 0.25–0.46 | No | Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits |
| Sodium ³ (ppm) | 06/20/2013 | (see footnote) | NA | 35.6 | 27.8–35.6 | No | Naturally occurring; Road salt; Water softeners; Animal waste |
| Sulfate (ppm) | 06/20/2013 | 250 | NA | 10.1 | 9.7–10.1 | No | Naturally occurring |
| TTHMs [Total Trihalomethanes]–Stage 1 ⁴ (ppb) | 08/01/2013 | 80 | NA | 22 | 15.1–22 | No | By-product of drinking water chlorination needed to kill harmful organisms; Formed when source water contains large amounts of organic matter |

Tap water samples were collected for lead and copper analyses from sample sites throughout the community

| SUBSTANCE (UNIT OF MEASURE) | DATE SAMPLED | AL | MCLG | AMOUNT DETECTED (90TH%TILE) | RANGE LOW-HIGH | SITES ABOVE AL/TOTAL SITES | VIOLATION | TYPICAL SOURCE |
|--------------------------------|-----------------|-----|------|--------------------------------|-------------------|-------------------------------|-----------|--|
| Copper (ppm) | July–Dec 2013 | 1.3 | 1.3 | 1.58 | ND–1.79 | 15/40 | Yes | Corrosion of household plumbing systems; Erosion of natural deposits; leaching from wood preservatives |
| Lead (ppb) | July–Dec 2013 | 15 | 0 | 12.7 | ND–31.7 | 4/40 | No | Corrosion of household plumbing systems; Erosion of natural deposits |

¹The State considers 50 pCi/L to be the level of concern for beta particles.

²The Haloacetic Acids detected were Dichloroacetic acid, Trichloroacetic acid, and Chloroacetic acid.

³Water containing more than 20 ppm of sodium should not be used for drinking by people on severely restricted sodium diets. Water containing more than 270 ppm of sodium should not be used for drinking by people on moderately restricted sodium diets.

⁴The Trihalomethanes detected were Bromodichloromethane, Chloroform, Dibromochloromethane, and Bromoform.

Definitions

90th percentile: The levels reported for lead and copper represent the 90th percentile of the total number of sites tested. 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 lead and copper values detected at your water system.

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

MCL (Maximum Contaminant Level): The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLG as possible.

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

MRDL (Maximum Residual Disinfectant Level): The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

MRDLG (Maximum Residual Disinfectant Level Goal): The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

NA: Not applicable

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

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

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

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