

ANNUAL DRINKING WATER QUALITY REPORT FOR 2015

INTRODUCTION

To comply with State regulations, the Kensico Water District 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. Last year, your tap water met all State drinking water health standards. We are proud to report that our system did not violate a maximum contaminant level or any other water quality standard. 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 any questions about this report or concerning your drinking water, please contact David A. Smyth, P.E., Interim Superintendent, Town of Mount Pleasant Water and Sewer Department, at 831-1062. 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 Town Board of the Town of Mount Pleasant serves as the Board of Commissioners for the Kensico Water District. The Board meets on the second and fourth Tuesday of each month in Town Hall at 8:30 pm. Please feel free to participate in these meetings.

WHERE DOES OUR WATER COME FROM?

In general, the sources of drinking water (both tap 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 is purchased from The New York City Water Board, and is drawn from the Delaware Aqueduct. The water taken from the Delaware system is not fluoridated. Prior to October 1, 2013 the district was required to provide treatment to achieve at least 99.9 percent inactivation of Giardia Lamblia cysts and 99.99 percent inactivation of enteric viruses. As of October 1, 2013, the District is required to provide additional treatment to achieve at least a 99 percent inactivation of Cryptosporidium cysts. This additional treatment has been provided through the addition of an Ultraviolet Light Disinfection System at the Commerce Street Pump Station, which was designed to achieve in excess of 99 percent inactivation of Cryptosporidium cysts. The treatment provided consists of:

Ultraviolet Light Disinfection

The Kensico Water District treats the water received from the Delaware Aqueduct at the Commerce Street Pump Station with Ultraviolet Light Disinfection in order to inactivate Cryptosporidium and Giardia.

Extended Disinfection

The Kensico Water District further disinfects the water with chlorine initially as it leaves the Commerce Street Pump Station, and again at the water storage facilities, if required, to achieve the inactivation enteric viruses. Prior to entering the distribution system the chlorine residual is again analyzed and adjusted as required to maintain a detectable level of chlorine in the distribution system in order to maintain disinfection.

Corrosion Control Treatment

In order to inhibit leaching of lead and copper from household plumbing, the finished water is treated with sodium hydroxide to adjust the pH and with a polyphosphate corrosion inhibitor. This treatment is performed to comply with the lead and copper rule.

Fluoridation

The District's primary source, the Delaware Aqueduct System, is not fluoridated.

FACTS AND FIGURES

Our water system serves approximately 17,952 people through approximately 5129 service connections. In 2015, the Kensico Water District purchased approximately 812 million gallons of water from New York City. Approximately 670 million gallons were billed to consumers, and approximately 45 million gallons were billed to the Old Farm Hill Water District. The volume of unaccounted-for water in 2015 was approximately 142 million gallons, which represents 18 percent of the total amount of water pumped. Unaccounted-for water includes water lost due to water main breaks, hydrant flushing, street cleaning, fire fighting, sewer flushing and other un-metered water uses.

All accounts are billed on a quarterly basis. In 2015, water customers were billed \$26.00 per 1000 cubic feet of water. One cubic foot of water is equal to 7.48 gallons. For accounts with meters from 1.5 inches to 8 inches, there is also a meter charge included on each bill. The meter charge ranges from \$2.75 to \$108.00 for a 1 inch and 10 inch meter, respectively. Also, for those accounts that have either a separate sprinkler service or private fire hydrants, there is a charge that ranges from \$37.10 to \$95.00 per hydrant and \$20.00 to \$80.00 for sprinkler service. In addition to the quarterly bill, each account received a tax levy of approximately \$57.14 per \$1000 of assessed valuation, on their 2015 April tax bill.

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, and synthetic organic compounds.

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 a year because the concentrations of these contaminants do not change frequently. Some of our data, though representative, are more than one year old.

Included as a supplement to this notice is a report of analytical testing results for contaminants required to be tested for by the United States Environmental Protection Agency and the New York State Department of Health. This supplement is available to consumers of the Kensico Water District upon request.

It should be noted that all drinking water, including bottled 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 Westchester County Department of Health at 813-5000.

Table of Contaminants

Contaminant	Violation Yes/No	Date of Sample	Level Detected (Avg/Max) (Range)	Unit Measurement	MCLG	Regulatory Limit (MCL, TT or AL)	Likely Source of Contamination
<u>Microbiological Contaminants</u>							
Turbidity (Note 1)	No	05/15	2.9 NTU (0.80/ 1.0) (1.0 – 2.9)	NTU	N/a	TT=<5.0 NTU	Soil Runoff
Coliform	No	01/15 02/15 03/15	1 Positive 1 Positive 1 Positive	n/a	0	MCL= 2 or more positive samples	Naturally present in the environment.
<u>Inorganic Contaminants</u>							
Copper	No	07/15	.324 (Note 2) (.011 - .457)	mg/l	1.3	AL= 1.3	Corrosion of household plumbing systems; Erosion of natural deposits.
Lead	No	07/15	1.1 (Note3) (<LOQ-4.7)	ug/l	15	AL= 15	Corrosion of household plumbing systems; Erosion of natural deposits.
Barium	No	10/15	.0186	mg/l	n/a	MCL=2.0	Erosion of natural deposits.
Calcium	No	10/15	6200	ug/l	n/a	MCL= N/A	Erosion of natural deposits.
Chloride	No	10/15	12.1	mg/l	n/a	MCL= 250	Naturally occurring or indicative of road salt contamination.
Cyanide	No	10/15	0.011	mg/l	n/a	MCL= 0.20	Discharge from plastic and fertilizers
Hardness	No	10/15	21 mg/l as CaCO3	mg/l	n/a	MCL= N/A	Erosion of natural deposits.
Iron	No	10/15	27.9	ug/l	n/a	MCL= 300	Naturally occurring.
Magnesium	No	10/15	1280	ug/l	n/a	MCL= N/A	Erosion of natural deposits.
Manganese	No	10/15	23.4	ug/l	n/a	MCL= 300	Naturally occurring.
Sodium	No	10/15	8.77	mg/l	n/a	MCL= 20	Erosion of natural deposits.
Sulfate	No	10/15	4.07	mg/l	n/a	MCL= 250	Erosion of natural deposits.
Nitrate	No	10/15	.194	mg/l	n/a	MCL = 10	Runoff from fertilizer use; Leaching from septic tanks, sewage. Erosion of natural deposits,
Zinc	No	10/15	5.1	ug/l	n/a	MCL= 5000	Naturally occurring.
<u>Radiological Contaminants</u>							
Gross Alpha (Including radium-226 but excluding radon and uranium)	No	2013	0.45 (+/- 0.37)	Pci/L	n/a	MCL = 15	Erosion of natural deposits.
Beta particles and photon activity from man-made radionuclides	No	2013	0.44 (+/- 0.42)	Pci/L	n/a	MCL = 50 (Note 4)	Decay of natural deposits and man-made emissions.
Combined radium-226 and 228	No	2013	0.52 (+/- 0.43)	Pci/L	n/a	MCL = 5	Erosion of natural deposits.
<u>Unregulated (Inorganic) Contaminants</u>							
Chromium (121 Lozza Drive)	No	09/14	0.29	ug/l	n/a	MCL = n/a	Naturally occurring.
Chromium (600 Marble Avenue)	No	09/14	0.93	ug/l	n/a	MCL = n/a	Naturally occurring.
Strontium (121 Lozza Drive)	No	09/14	19.6	ug/l	n/a	MCL = n/a	Naturally occurring.
Strontium (600 Marble Avenue)	No	09/14	32.0	ug/l	n/a	MCL = n/a	Naturally occurring.
Chlorate (121 Lozza Drive)	No	09/14	95.1	ug/l	n/a	MCL = n/a	Naturally occurring.
Chlorate (600 Marble Avenue)	No	09/14	82.3	ug/l	n/a	MCL = n/a	Naturally occurring.
Vanadium (600 Marble Avenue)	No	09/14	0.20	ug/l	n/a	MCL = n/a	Naturally occurring.
UCMR3 Chromium, Hexavalent (121 Lozza Drive)	No	09/14	0.042	ug/l	n/a	MCL = n/a	Naturally occurring.
UCMR3 Chromium, Hexavalent (600 Marble Avenue)	No	09/14	0.620	ug/l	n/a	MCL = n/a	Naturally occurring.
<u>Disinfection Byproducts</u>							
Total Trihalomethanes	No	2015	58.64 (Note 5)	ug/l	n/a	MCL= 80	By-product of drinking water chlorination needed to kill harmful organisms. TTHMs are formed when source water contains large amounts of organic matter.
(Min/Max.)	No	2015	(23.72/72.03)	ug/l	n/a		
Haloacetic Acids	No	2015	46.96 (Note 5)	ug/l	n/a	MCL= 60	By-product of drinking water chlorination needed to kill harmful organisms.
(Min/Max.)	No	2015	(27.32/56.3)	ug/l	n/a		

Notes:

- 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 in May (2.9 NTU). State regulations require that turbidity must always be below 5.0 NTU. The regulations require that 95% of the turbidity samples collected have measurements below 0.5 NTU (or below 0.3 NTU if you serve 10,000 or more people). Although May was the month when we had the fewest measurements meeting the treatment technique for turbidity, the levels recorded were within the acceptable range allowed and did not constitute a treatment technique violation.
- 2 – The level presented represents the 90th percentile of the 30 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 copper values detected at your water system. In this case, thirty samples were collected at your water system and the 90th percentile value was the 27th highest value (.324 mg/l). The action level for copper was not exceeded at any of the sites tested. The action level for copper is 1.3 mg/l.
- 3 – The level presented represents the 90th percentile of the 30 sites tested. In this case, thirty samples were collected at your water system and the 90th percentile value was the 27th highest value (1.1 ug/l). The action level for lead was not exceeded at any of the sites tested. The action level for lead is 15ug/l.
- 4 – The State considers 50 pCi/L to be the level of concern for beta particles.
- 5 – The level represents the highest value of Locational Running Annual Average calculated from the data collected.
- 6 – The range represents the minimum and the maximum values out of all TTHMs and HAAs data collected throughout the year.

Definitions:

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.

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. 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.

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

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

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

Nephelometric Turbidity Unit (NTU): A measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

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).

Nanograms per liter (ng/l): Corresponds to one part of liquid to one trillion parts of liquid (parts per trillion – ppt).

Picograms per liter (pg/l): Corresponds to one part of liquid to one quadrillion parts of liquid (parts per quadrillion – ppq).

Picocuries per liter (pCi/L): A measure of the radioactivity in water.

Millirems per year (mrem/yr): A measure of radiation absorbed by the body.

Million Fibers per Liter (MFL): A measure of the presence of asbestos fibers that, are longer than 10 micrometers.

Variance and Exemption: State or EPA permission not to meet a MCL or treatment technique under certain conditions.

<LOQ: Less than the Limit of Quantitation

n/a: not applicable, **ppb:** part per billion or microgram per liter, **ppm:** parts per million or milligram per liter, **TTHM:** (total trihalomethane) means the sum of the concentration of trichloromethane (chloroform), dibromochloromethane, bromodichloromethane and tribromomethane (bromoform).

In addition to the detected contaminants listed above, the following eleven (11) inorganic contaminants were sampled for but not detected: antimony, arsenic, beryllium, cadmium, chromium, mercury, nickel, nitrite, selenium, silver and thallium. Also, the following one hundred and fourteen (114) organic contaminants were sampled for but not detected: 2,3,7,8-TCDD (Dioxin), 1,2-Dibromo-3-chloropropane, 1,2-Dibromoethane, Butachlor, 1,3-Butadiene, Metolachlor, Metribuzin, Aldrin, Chlordane, Dieldrin, Endrin, Heptachlor, Heptachlor Epoxide, Lindane, Methoxychlor, PCB's, Propachlor, Toxaphene, 2,4,5-T, 2,4-D, 2,4-Dinitrotoluene, 2,6-Dinitrotoluene, 4,4-DDE, Dalapon, Dicamba, Dinoseb, Pentachlorophenol, Picloram, Silvex, THM-Bromodichloromethane, THM-Bromoform, THM-Chloroform, THM-Dibromochloromethane, 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-butanone(MEK), 2-chlorotoluene, 4-chlorotoluene, Acetochlor, Benzene, Bromobenzene, Bromochloromethane, Bromomethane, Carbon tetrachloride, Chlorobenzene, Chlorethane, Chloromethane, Chlorodifluoromethane, cis-1,2-dichloroethene, cis-1,3-dichloropropene, DCPA (di-acid), Dibromomethane, Dichlorodifluoromethane, EPTC, Ethylbenzene, Hexachlorobutadiene, Isopropylbenzene, Methyl iso-butyl ketone (MIBK), Methyl tert-butyl ether (MTBE), Methylene Chloride, N-butylbenzene, N-propylbenzene, Naphthalene, O-xylene, P & M-xylene, P-isopropyltoluene, SEC-butylbenzene, Styrene, TERT-butylbenzene, Tetrachloroethene, Toluene, trans-1,2-dichloroethene, trans-1,3-dichloropropene, Trichloroethene, Trichlorofluoromethane, Vinyl chloride, Alachlor, Atrazine, Benzo(a)pyrene, Bis(2-Ethylhexyl)adipate, Hexachlorobenzene, Hexachlorocyclopentadiene, Simazine, 3-Hydroxycarbofuran, Aldicarb, Aldicarb sulfone, Aldicarb sulfoxide, Carbaryl, Carbofuran, Methomyl, Molinate, Oxamyl, Glyphosate, Endothall, Diquat, Nitrobenzene, Simazine, and Terbacil. The following six (6) unregulated organic contaminants were sampled for but not detected: Perfluoroheptanoic acid, Perfluorohexanesulfonic acid, Perfluorononanoic acid, Perfluorooctanesulfonic acid, Perfluorooctanoic acid and Perfluorobutanesulfonic acid. The following two (2) Radionuclides were sampled for but not detected: Tritium and Strontium 90.

WHAT DOES THIS INFORMATION MEAN?

As you can see by the table, our system had no violations. We have learned through our testing that some contaminants have been detected; however, these contaminants were detected below the level allowed by the State.

IS OUR WATER SYSTEM MEETING OTHER RULES THAT GOVERN OPERATIONS?

During 2015, our system was in compliance with applicable State drinking water operating, monitoring and reporting requirements.

The results of lead and copper sampling continue to show that the 90th percentile levels for lead and copper are in compliance. This demonstrates that the treatment being provided to control the leaching of lead and copper from household plumbing has been optimized. Based upon these results sampling for lead and copper will be performed on a three year sampling rotation at a reduced number of sampling sites.

INFORMATION ON CRYPTOSPORIDIUM

Cryptosporidium is a microbial pathogen found in surface water and groundwater under the influence of surface water. Although filtration removes Cryptosporidium, the most commonly used filtration methods cannot guarantee 100 percent removal. During 2015, as part of our routine sampling, 52 samples were collected at the Delaware Aqueduct chamber and analyzed for Cryptosporidium oocysts. Of these samples, 9 Cryptosporidium oocyst were detected. Current test methods do not allow us to determine if the organisms are dead or if they are capable of causing disease. Ingestion of Cryptosporidium may cause cryptosporidiosis, a gastrointestinal infection. Symptoms of infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals can overcome disease within a few weeks. However, immuno-compromised people are at greater risk of developing life-threatening illness. We encourage immuno-compromised individuals to consult their health care provider regarding appropriate precautions to take to avoid infection. Cryptosporidium must be ingested to cause disease, and it may be spread through means other than drinking water.

INFORMATION ON GIARDIA

Giardia is a microbial pathogen present in varying concentrations in many surface waters and groundwater under the influence of surface water. Giardia is removed/inactivated through a combination of filtration and disinfection or by disinfection. During 2015, as part of our routine sampling, 52 samples were collected at the Delaware Aqueduct chamber and analyzed for Giardia cysts. Of these samples, 44 Giardia cysts were detected. Current test methods do not allow us to determine if the organisms are dead or if they are capable of causing disease. Ingestion of Giardia may cause giardiasis, an intestinal illness. People exposed to Giardia may experience mild or severe diarrhea, or in some instances no symptoms at all. Fever is rarely present. Occasionally, some individuals will have chronic diarrhea over several weeks or a month, with significant weight loss. Giardiasis can be treated with anti-parasitic medication. Individuals with weakened immune systems should consult with their health care providers about what steps would best reduce their risks of becoming infected with Giardiasis. Individuals who think that they may have been exposed to Giardiasis should contact their health care providers immediately. The Giardia parasite is passed in the feces of an infected person or animal and may contaminate water or food. Person to person transmission may also occur in day care centers or other settings where hand washing practices are poor.

For more information on Cryptosporidiosis and Giardiasis see the attached Cryptosporidiosis and Giardiasis background information and Cryptosporidiosis fact sheet.

DO I NEED TO TAKE SPECIAL PRECAUTIONS?

The Safe Drinking Water Act requires that the following educational information be included in this notice.

- (1) **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 EPA's Safe Drinking Water Hotline (1-800-426-4791).**
- (2) **Some people may be more vulnerable to disease-causing microorganisms 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).**

Contaminants that may be present in source water include:

- Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife.
- Inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining or farming.
- Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.
- Organic chemical contaminants, including synthetic and volatile organic chemicals, which are byproducts of industrial processes and petroleum production, and can, also come from gas stations, urban storm water runoff, and septic systems.
- Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration regulations establish limits for contaminants in bottled water that must provide the same protection for public health.

INFORMATION ON FLUORIDE ADDITION

The water taken from the Delaware Aqueduct system is not fluoridated.

WHY SAVE WATER & 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*
- ✓ *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 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.*
- ✓ *Use your water meter to detect hidden leaks. Simply turn off all taps and water-using appliances, and then check the meter after 15 minutes. If it moved, you have a leak.*

SYSTEM IMPROVEMENTS

In 2015, work on the Legion Drive Water Main and South Kensico has commenced. Additionally, the Commerce Pump Station continues to be improved to permit more efficient operation of the facility.

In 2016 the District will be completing the water main installation project on Legion Drive and south Kensico Avenue in Valhalla.

IN CLOSING

Thank you for allowing us to continue to provide your family with quality drinking water this year. In order to maintain a safe and dependable water supply we sometimes need to make improvements that will benefit all of our customers. The costs of these improvements may be reflected in the rate structure. Rate adjustments may be necessary in order to address these improvements. We ask that our customers help us protect our water sources, which are the heart of our community. All consumers are urged to report any suspicious activity observed in the vicinity of water system facilities to the Mount Pleasant Police at 769-1941. Please call our office if you have questions.

Contacts for more information:

Town of Mount Pleasant Water and Sewer Department, 831-1062
Westchester County Department of Health, 813-5000
New York State Department of Health, (518) 402-7713
PWS NO. 5930082
May 2016

NEW YORK STATE DEPARTMENT OF HEALTH
BUREAU OF PUBLIC WATER SUPPLY PROTECTION

CRYPTOSPORIDIOSIS AND GIARDIASIS BACKGROUND INFORMATION

What are Cryptosporidiosis and Giardiasis?

Cryptosporidiosis (crip-toe-spo-RID-i-o-sis) and giardiasis (gee-AR-di-a-sis) are intestinal illnesses caused by parasites which are too small to be seen by the naked eye.

Who gets Cryptosporidiosis and Giardiasis?

Anyone can get Cryptosporidiosis and giardiasis. In people who are otherwise healthy, the illnesses usually last less than two weeks. Cryptosporidiosis can be very serious for people with weak immune systems (high risk individuals) - for example, chemotherapy, dialysis or transplant patients, and people with Crohn's disease or HIV infection.

How are they spread?

People get cryptosporidiosis or giardiasis by swallowing water or food that has been contaminated with the parasite. Direct contact with feces from infected people or animals can also cause illness. It can be spread any time basic hygiene breaks down.

What are the symptoms?

For cryptosporidiosis, symptoms usually appear from 1 to 12 days after infection, with an average of 7 days. The most common sign is watery diarrhea. There may also be cramps, fever, nausea, vomiting, and loss of appetite. Symptoms of giardiasis occur from 5 to 25 days after exposure but usually within 10 days. The main symptom is mild or severe diarrhea. Fever is rarely present. In both illnesses, some people who get infected may not get sick.

How are these infections diagnosed?

These infections are diagnosed by looking at a stool sample under a microscope. Looking for Giardia is part of a routine lab test called an "O&P" (Ova and Parasites) test. However, Cryptosporidium is not a routine part of this test. Unless your doctor requests it, Cryptosporidium may be missed.

Can Giardiasis and Cryptosporidiosis be treated?

Giardia can be treated with anti-parasitic drugs. However, there is no specific treatment for cryptosporidiosis. For some patients, antibiotics may help. Anti-Diarrhea drugs which reduce the motion of the intestines may provide temporary improvement, but oral liquids or intravenous fluids may be necessary.

Should an infected person be excluded from work or school?

Generally, it is not necessary. Casual contact is unlikely to transmit the disease. Special precautions may be needed by food handlers or children enrolled in day care settings. Consult your local health department for advice in such instances.

NEW YORK STATE DEPARTMENT OF HEALTH FACT SHEET

CRYPTOSPORIDIOSIS

(crip-toe-spor-id-i-o-sis)

Information for People with Weakened Immune Systems

What Is Cryptosporidiosis?

Cryptosporidiosis is an intestinal illness caused by a microscopic parasite called Cryptosporidium.

Is Cryptosporidiosis a New Disease?

Although Cryptosporidium is not new, it was not recognized as a cause of human disease until 1976. Cryptosporidiosis was added to the list of reportable diseases in New York State in February 1994.

How Common Is Cryptosporidiosis?

The number of Cryptosporidiosis cases that occur each year is not yet well documented. Since the disease has recently been added to the list of reportable diseases, state and county health departments are now beginning to record the number and location of identified cases so that public health control measures can be developed. In 1994, 302 cases were reported to the New York State Department of Health. However, more cases may have occurred that were not detected, either because the Cryptosporidium stool test many not have been requested by the health care provider or the laboratory may have failed to use the necessary tests to identify it.

What Are The Symptoms of Cryptosporidiosis?

The most common symptom is diarrhea, which is usually watery. It is often accompanied by abdominal cramping. Nausea, vomiting, fever, headache and loss of appetite may also occur. Some people infected with Cryptosporidium may not become ill.

Who is Susceptible To Cryptosporidiosis And How Long Does The Illness Last?

All people are presumed susceptible to infection with Cryptosporidium. In healthy individuals with normal immune systems, signs and symptoms generally persist for two weeks or less. However, immunocompromised persons (those with weak immune systems) may have severe and long lasting illness. Some examples of immunocompromised people are those receiving cancer chemotherapy, kidney dialysis, steroid therapy, people with HIV/AIDS and patients with Crohn's disease.

How Long After Exposure Do Symptoms Appear?

The incubation period may range from 1 to 12 days with an average of 7 days.

Should Immunocompromised Persons Take Extra Precautions To Minimize Their Risk of Cryptosporidiosis?

Because cryptosporidiosis can be a severe disease in immunocompromised persons, such individuals should discuss the need for extra precautions with their health care provider to minimize their risk of infection. Keep in mind that contaminated drinking water is only one of a number of ways in which cryptosporidiosis can be acquired. Here are some suggested steps:

- Wash hands thoroughly after changing diapers or whenever fecal soiling occurs.
- Avoid sexual practices that may result in hand or mouth exposure to feces, such as oral/anal contact (rimming).
- Avoid direct exposure to cattle and other farm animals. If exposure cannot be avoided, wash your hands thoroughly immediately thereafter.
- Avoid swallowing water when swimming, especially in lakes, ponds or rivers. There has been one documented case of cryptosporidium transmitted to a number of people who swam in a recreational wave pool and apparently swallowed the water.
- Thoroughly wash all fruits and vegetables. Avoid drinking unpasteurized apple cider, as there has been a documented incident of cryptosporidium transmitted through fresh cider made from apples gathered in a field in which cows were grazing.

If an outbreak of waterborne Cryptosporidium is identified (none has been to date in New York), immuno compromised patients should carefully and consistently comply with all public advisories and notices issued by the local or state health department.

The four items listed below may help immunocompromised patients and their health care providers decide whether to take extra routine precautions with drinking water under normal, non-outbreak conditions:

- Boiling water for at least one minute with a rolling boil will kill Cryptosporidium.
- Properly drilled and maintained wells, which utilize underground water, are generally protected from surface contamination and are unlikely to contain Cryptosporidium cysts.
- Unless it is distilled or pasteurized, bottled water may not be any safer than tap water. Those bottling companies using properly designed and operated ground water sources have a very low likelihood of producing water containing Cryptosporidium cysts. Those companies using surface water sources have the same risk of being cryptosporidium free. Bottled water sold in New York must also include on the label whether the water comes from a well, spring or municipal source. A list of bottled waters certified for sale in New York along with their sources can be obtained from the New York State Department of Health at 1-800-458-1158.
- During an outbreak of cryptosporidiosis in Milwaukee in 1993, one study showed that less diarrhea occurred in homes using water filters with a pore size less than two microns, as compared to others using filters with large pore sizes. If home water filters are used, follow the manufacturers instructions supplied with the unit. The instructions will provide information on filter maintenance needed to prevent clogging and ensure proper filtration. Filters should be certified by the National Sanitation Foundation (NSF) or an equivalent testing agency for cyst removal.