ANNUAL DRINKING WATER QUALITY REPORT FOR 2015 CLAY UNIFORM WATER DISTRICTS 4401 STATE ROUTE 31 CLAY, NEW YORK 13041 Public Water Supply ID # NY3304344

INTRODUCTION.

To comply with State regulations, **CLAY UNIFORM WATER DISTRICTS** 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. 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 **GREG ROOT, WATER SUPERINTENDENT** at **652-3800 Ext. 146.** We want you to be informed about your drinking water. If you want to learn more, please attend the first Town Board Meeting of November 2016. We, of course, will be glad to discuss any drinking water issues you may have.

WHERE DOES OUR WATER COME FROM?

In general, the sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and 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.

Clay Uniform Water is a special district of the Town of Clay and supplies water to the southwestern portion of the Town of Clay. Clay is a distribution system and buys all of its water from the **ONONDAGA COUNTY WATER AUTHORITY (OCWA)** and 90% comes from **Lake Ontario** and 10% comes from **Otisco Lake**. Our water source is the **ONONDAGA COUNTY WATER AUTHORITY,** which is located at Northern Concourse, North Syracuse, New York. During 2015 our system did not experience any restriction of our water source.

The NYS DOH has evaluated OCWA's susceptibility to contamination under the Source Water Assessment Program (SWAP), and their findings are summarized in the paragraphs below. It is important to stress that these assessments were created using available information and only estimate the potential for source water contamination. Elevated susceptibility ratings do not mean that source water contamination has or will occur for OCWA. OCWA provides treatment and regular monitoring to ensure the water delivered to consumers meets all applicable standards.

This assessment found a moderate susceptibility to contamination for OCWA's Otisco Lake source of drinking water. The amount of row crops in the assessment area results in a medium susceptibility to pesticides. No permitted discharges are found in the assessment area. There is also noteworthy contamination susceptibility associated with other discrete contaminant sources, and these facility types include: mines. While lakes are not generally considered to have a high natural sensitivity to phosphorus in SWAP, this lake already shows algae problems. Therefore, additional phosphorus contribution would likely result in further water quality degradation.

Lake Ontario Source (water purchased from Metropolitan Water Board): The Great Lakes' watershed is exceptionally large and too big for a detailed evaluation in the SWAP. General drinking water concerns for public water supplies which use these sources include: storm generated turbidity, wastewater, toxic sediments, shipping related spills, and problems associated with exotic species (e.g. zebra mussels- intake clogging and taste and odor

problems). The summary below is based on the analysis of the contaminant inventory compiled for the drainage area deemed most likely to impact drinking water quality at this PWS intake.

Facts and Figures

Our water system serves 16,000 people through 5860 service connections. The total water purchased in 2015 was 641,417,000 gallons. The amount of water sold in 2015 to customers was 551,607,000 gallons. The total amount of water lost in 2015 was 89,810,000 gallons; this water was used to flush water mains, fight fires and leaks in the system. In 2015, water customers were charged an average of $3.19 per 1,000 gallons of water.

ARE THERE CONTAMINANTS IN OUR DRINKING WATER?

As the State regulations require, OCWA tests 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. Additionally, we test our water for Total coliform bacteria, lead and copper. The tables below depict which contaminants were detected in your drinking water. A copy of all non-detected contaminants is on file with the Town of Clay Uniform Water District Office as well as the Town Clerk's Office for public review.

The State allows us to test for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of our data, though representative, are more than one year old.

It should be noted that all drinking water, including bottled drinking water, may be reasonably expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline (800-426-4791) or the Onondaga County Health Department at 435-6600.

TABLE OF DETECTED CONTAMINANTS
(Found in the Clay WDs Distribution System)

Contaminant	Sample Source	Violation Yes / No	Date(s) of Sampling	Average Level found (Range)	Units Measured	MCLG	Regulatory Limit MCL	Likely Source of Contamination
Chlorine Residual	Clay Distribution System	No	24/month	0.56 (0.2-1.5)	mg/L	(MRDLG) N/A	(MRDL) 4	Added to water to kill harmful bacteria and to prevent the regrowth of bacteria.
Total Trihalo Methanes*	Clay Distribution System	no	Mar-15 Jun-15 Sep-15 Dec-15	47.0 (19.6-80.0)	ug/L	n/a	80	By-product of drinking water chlorination needed to kill harmful organisms. TTHMs are formed when source water contains large amounts of organic matter.
Haloacetic acids**	Clay Distribution System	no	Mar-15 Jun-15 Sep-15 Dec-15	11.65 (nd-22.4)	ug/L	n/a	60	By-product of drinking water disinfection needed to kill harmful organisms.

Disinfection by-products; During disinfection, certain by-products form as a result of chlorine reacting with naturally occurring organic matter. The disinfection process is carefully monitored so that disinfection is effective, while levels of disinfection by-products are kept low. Trihalomethanes(THM's) and Haloacetic acids (HAA's) are classes of chemicals that OCWA is required to monitor for in its distribution system.

* See 'Terms & Abbreviations' for the listing of Trihalomethanes contaminants.
** See 'Terms & Abbreviations' for the list of Haloacetic acids contaminants.

Table of Detected Contaminants
(Lead and Copper in the OCWA Distribution System)

Contaminant	Violation Yes/No	Dates of Sampling	Average Level Found Range	90th Percentile Value	Units Measured	MCLG	Regulatory Limit (MCL, TT, or AL)	Likely Source of Contamination
Copper	No	Jun-14	0.86 (0.0038 - 0.61)	0.16	mg/L	0	AL = 1.3*	Corrosion of household plumbing systems; Erosion of natural Deposits; Leaching from wood preservatives.
Lead	No	Jun-14	1.87 (nd - 20)	3.6	ug/L	0	AL = 15*	Corrosion of household plumbing systems; Erosion of natural deposits.

* AL (Action Level) – Only 10% of samples can exceed this level.

About Lead and Copper:

In order to deter the leaching of lead and/or copper from our customers pipes, OCWA has been mandated to implement corrosion control. Lead & Copper Sampling is required every 3 years. OCWA will sample again in 2017.

The method of corrosion control used on waters originating from Otisco Lake is the addition of orthophosphate. The adjustment of pH is the method used for Ontario water. OCWA's latest sampling period was in June of 2014 when OCWA sampled and tested customers' tap to make sure the corrosion controls were effective.

90th Percentile Values for Lead & Copper: The values reported for Lead and Copper represent the 90th percentile. The 90th percentile value is the concentration that 90% of the taps sampled were at or below. Since the Action Level for Lead is 15 ug/l, 90% of the taps tested had to be at or below this value. As you can see from the above chart 90% of the taps tested were at or below 3.6 ug/l in June of 2014. The Action Level for Copper is 1.3 mg/l. The observed 90th percentile for Copper was 0.16 mg/l. Of the 123 samples that OCWA tested in June of 2014, only one sample exceeded the action level for lead. No sample exceeded the action level for Copper.

The testing showed that our methods of corrosion control are working.

Lead in Drinking Water

"If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The Onondaga County Water Authority is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at *http://www.epa.gov/safewater/lead."*

Chromium 6 Health Information

Chromium is a common element in rocks, soil, water, plants and animals. It gets into surface or groundwater after dissolving from rocks and soil. Chromium is used to manufacture steel, to electroplate metal, and in the textile, tanning, and leather industries. Contamination of drinking water may occur if chromium gets into surface or groundwater after improper waste disposal in landfills or by industrial or manufacturing facilities using chromium.

Chromium is found in the environment in two principal forms: chromium (III) and chromium (VI). Chromium (III) compounds are the most common chromium compounds in the environment. Chromium (VI) compounds are less common in the environment and are typically associated with an industrial source. Depending on the conditions each form of chromium can be converted into the other form in the environment

Chromium (VI) is the more toxic form of chromium. There is strong evidence from human studies in many counties that occupational exposures to chromium (VI) in air cause lung cancer. There is weaker evidence from studies in China that long-term exposure to chromium (VI) in drinking water can cause stomach cancer. Chromium (VI) causes cancer in laboratory animals exposed almost daily to high levels in air (lung cancer) or drinking water (mouth and intestinal cancers) over their lifetimes. Adverse gastrointestinal-tract effects (oral ulcers, stomach or abdominal pain, diarrhea), other than cancer also

associated with long-term human exposures to oral doses of chromium (VI). In laboratory animals, repeated exposures of high doses of chromium (VI) has caused blood, liver and kidney damage in adults animals, and can adversely affect the developing fetus and the male and female reproductive organs. Chemicals that cause cancer or other adverse health effects in people or laboratory animals exposed to high levels also may increase the risk of such effects in people exposed to lower levels over periods. **Prepared by New York State Department of Health – Bureau of Toxic Substance Assessment, March 4, 2011.**

Table of Detected Contaminants
Turbidity at Entry Point

Contaminant	Water Source	Violation Yes/No	Date(s) of Sampling	Average Level found (Range)	Units Measured	MCLG	Regulatory Limit (TT)	Lowest % of Monthly tests Meeting limit	Likely Source of Contamination
Turbidity	Otisco	No	Every 4 hrs (Jun-14)	0.06 (0.03-0.10)	NTU	N/A	TT=0.3 NTU For systems that filter	100%	Soil run off
	Ontario	No	Every 4 hrs (Apr.-14)	0.04 (0.02-0.07)	NTU	N/A	TT=0.3 NTU For systems that filter	100%	

Clay WDs purchases water from the Onondaga County Water Authority (OCWA). Water may originate from Otisco Lake, which is treated by OCWA itself, or Lake Ontario, which is treated by the Metropolitan Water Board (MWB) and sold to OCWA. Customers may also get a mixture of these waters.

Water purveyors are required to measure turbidity as water leaves their plants. Turbidity is a measure of the cloudiness of the water. Turbidity is monitored, because it is a good indicator of water quality. High turbidity can hinder the effectiveness of disinfectants. Treatment plants that filter also measure it, because it is a good indicator of filter efficiency. Otisco Lake and Lake Ontario waters are filtered.

Health Effects of Turbidity: Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, and parasites, which can cause symptoms such as nausea, cramps, diarrhea, and associated headaches. Please pay special attention to the additional statements in this document regarding Cryptosporidium.

Table of Detected Contaminants
Inorganic Contaminants Found at Entry Point

Contaminant	Water Source	Violation Yes / No	Date(s) of Sampling	Average Level Found (Range)	Units Measured	MCLG	Regulatory Limit (MCL, TT or AL)	Likely Source of Contamination
Aluminum	Otisco	No	Mar-15 Sep-15	0.07 (0.03-0.12)	mg/L	N/A	N/A	Erosion of natural deposit. Residual Aluminum may be from a chemical used in the treatment process.
Barium	Otisco	No	Mar-15 Sep-15	0.037 (0.034-0.040)	mg/L	2	2	Erosion of natural deposits.
	Ontario	No	July-15	0.024	mg/L	2	2	
Calcium	Otisco	No	Mar-15 Sep-15	44.5 (40-49)	mg/L	N/A	N/A	Naturally occurring.
	Ontario	No	July-13	33.5	mg/L	N/A	N/A	
Chloride	Otisco	No	Mar-15 Sep-15	48 (44-52)	mg/L	N/A	250	Naturally occurring;

	Ontario	No	July-15	26	mg/L	N/A	250	Road salts.
Chlorite	Otisco	No	Daily*	0.25 (nd -0.43)	mg/L	N/A	1	By-product of drinking water disinfection at plants using Chlorine Dioxide.
Chlorine Dioxide Residual (1)	Otisco	No	Daily*	70 (nd-390)	ug/L	N/A	800(MRDL)	By-product of drinking water disinfection at plants using Chlorine Dioxide.
Chromium	Otisco	No	Mar-15 Sep-15	2.3 (1.4-3.1)	ug/L	100	100	Erosion of natural deposits.
	Ontario	No	Feb, May, Jul, Aug, Nov, 2015	1.0 (nd-1.6)	ug/L	100	100	
Chromium 6** (2)	Ontario	No	Feb, May, Aug, Nov, 2015	0.09 (0.07-0.10)	ug/L	N/A	N/A	Erosion of natural deposits; Industrial sources.
Copper	Otisco	No	Mar-15 Sep-15	0.0077 (0.0023-0.013)	mg/L	N/A	AL=1.3	Corrosion of household systems. Erosion of natural deposits and leaching from wood preservatives.
Fluoride (3)	Otisco	No	Daily	0.76 (0.19-0.92)	mg/L	N/A	2.2	Erosion of natural deposits; water additive that promotes strong teeth; discharge from fertilizer.
	Ontario	No	Daily	0.78 (0.56-0.96)	mg/L	N/A	2.2	
Free Chlorine Residual	Otisco	No	Every 4 hrs.	1.12 (0.72-1.67)	mg/L	N/A	4 (MDRL)	Erosion of natural deposits; water additives that promotes strong teeth; discharge from fertilizer.
	Ontario	No	Every 4 hrs.	0.89 (0.64-1.25)	mg/L	N/A	4 (MDRL)	
Magnesium	Otisco	No	Mar-15 Sep-15	12 (11-13)	mg/L	N/A	N/A	Naturally occurring.
	Ontario	No	Jul-13	8.97	mg/L	N/A	N/A	
Nickel	Otisco	No	Mar-15 Sep-15	0.98 (0.75-1.2)	ug/L	N/A	N/A	Erosion of natural deposits
	Ontario	No	Jul-15	1.4	ug/L	N/A	N/A	
Nitrate	Otisco	No	Mar-15 Sep-15	0.51 (0.40-0.61)	mg/L	N/A	N/A	Runoff from fertilizer use, leaching from septic tanks, sewage; Erosion of natural deposits.
	Ontario	No	Jul-15	0.39	mg/L	N/A	N/A	
Sodium (4)	Otisco	No	Mar-15 Sep-15	28.5 (26-31)	mg/L	N/A	See Health Effects***	Naturally occurring; road salts, water softeners and animal wastes.
	Ontario	No	Jul-15	17	mg/L	N/A	See Health Effects***	
Sulfate	Otisco	No	Mar-15 Sep-15	13 (13-13)	mg/L	N/A	250	Naturally occurring.
	Ontario	No	Jul-15	24	mg/L	N/A	250	

(1)* Chlorine Dioxide and Chlorite were tested for daily for 217 days in 2015. For 217 days in 2015 OCWA was adding Chlorine Dioxide as a preoxidant in order to control Zebra Mussels at the intake, provide adequate disinfection, and control the formation of undesirable disinfection by-products such as Trihalomethanes and Haloacetic acids. OCWA intends to add Chlorine Dioxide again during warm water conditions in 2016.

(2) Chromium 6:** Although it is not regulated, MWB took samples from the entrance point of its distribution representing water treated from Lake Ontario and had them tested for Chromium 6 at low detection levels. The results are shown in the table above. Also in 2015, OCWA took samples representative of all 3 of the source waters; Otisco, Ontario, and Skaneateles Lakes and had them tested for Chromium 6. This was done as part of the Unregulated Contaminant Rule. For more information on Chromium 6 see page 4.

(3) Information on Fluoride Addition; OCWA is one of many drinking water systems that provide drinking water with a controlled, low level of fluoride for consumer dental health protection. According to the United States Center for Disease Control, fluoride is very effective in preventing cavities when present in drinking water at a target dose. Until June of 2015 the optimal target dose was determined to be between 0.8 to 1.2 mg/l. During this period monitoring showed fluoride levels in your water were in the optimal range 93.5% of the time for Otisco Lake water and 100% of the time for Lake Ontario water. In June of 2015 on the optimal target dose of fluoride was changed to 0.7 mg/l. Since then monitoring showed fluoride levels in your water were within the 0.6 and 0.8 mg/L range 98.6% of the time for Otisco Lake water and 99.7% of the time for Lake Ontario water. To ensure that the fluoride supplement in your water provides optimal dental protection, the NYS Health Department requires that we monitor fluoride levels on a daily basis.

(4)* Health Effects of Sodium:** There is no MCL for Sodium. However, 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 diets.

TABLE OF DETECTED CONTAMINANTS
Organic Contaminants Found at Entry Point

Contaminant	Water Source	Violation Yes / No	Date(s) of Sampling	Average Level Found (Range)	Units Measured	MCLG	Regulatory Limit (MCL, TT or AL)	Likely Source of Contamination
Di(2-ethylhexyl) phthalate (DEHP)	Otisco	No	Jan, Apr, Jul, Oct, 2015	0.75 (0.66-0.86)	ug/L	0	6	Used plastic products such as polyvinyl chloride, plastic toys, vinyl upholstery, adhesives and coatings. Compound likely to be released to the environment during production and waste disposal of these products. Also used in inks, pesticides, cosmetics, and vacuum pump oil.
Dissolved Organic Carbon	Otisco	No	Monthly 2015	2.0 (1.7-2.5)	mg/L	N/A	N/A	Naturally occurring
	Ontario	No	Monthly 2015	1.6 (1.3-2.0)	mg/L	N/A	N/A	
Total Organic Carbon	Otisco	No	Monthly 2015	2.0 (1.5-2.6)	mg/L	N/A	N/A	Naturally occurring.
	Ontario	No	Monthly 2015	1.6 (1.3-1.9)	mg/L	N/A	N/A	
Total Trihalo Mathanes	Ontario	No	Monthly 2014	12.6 (8.5-18)	ug/L	N/A	80	By-product of drinking water chlorination needed to kill harmful organisms. TTHMs are formed when source water contains large amounts of organic matter.
Haloacetic Acids	Ontario	No	Jul & Aug 2013	6.35 (6.3-6.4)	ug/L	N/A	60	By-product of drinking water disinfection needed to kill harmful organisms.

******** See Terms & Abbreviations' for the list of Haloacetic Acids contaminants
***** See Terms & Abbreviations' for the listing of Trihalomethanes contaminants.

The frequency that various contaminants are tested for is regulated by the State and can vary from source to source. The State allows for some contaminants to be tested for less than once a year because the concentrations of these contaminants do not change frequently. Some of our data, though representative, is more than one year old. Some contaminants are monitored at the various sources more often than required.

Clay WDs Unregulated Contaminant Monitoring Rule 3 (UCMR3) Sampling

The UCMR3 is a requirement set by the EPA for public water systems to monitor for a list of 28 contaminants not presently regulated. Water systems must sample for these contaminants on an EPA set schedule and have these samples tested by a certified laboratory using EPA approved methods.

Below is a table showing the unregulated contaminants found. The samples were collected in March, June, and September, 2014. The sample sites represented an entry point to the distribution system and a point of maximum residence in the distribution system. A list of UCMR3 contaminants tested for but not found can be found at the end of this table. For more information please contact Greg Root, 652-3800, Ext. 146.

Contaminant	Water Source	Date(s) of Sampling	Average Level Found (Range)	Units Measured	MCLG	Regulatory Limit (MCL, TT or AL)	Likely Source of Contamination
Chlorate	Entry Point	Mar-14 Jun-14 Sept-14	98.0 (54-150)	ug/L	N/A	N/A	Agricultural defoliant or desiccant; disinfection byproduct; and used in production of chlorine dioxide
	Maximum Residence	Mar-14 Jun-14 Sept-14	107.7 (63-140)	ug/L	N/A	N/A	
Chromium	Maximum Residence	Mar-14 Jun-14 Sept-14	0.14 (nd-0.22)	ug/L	N/A	N/A	The amount measured when analyzing for "total chromium" is the sum of chromium in all of its valence states. The MCL for EPA's current total chromium regulation was determined based upon the health effects of chromium-6
Chromium-6	Entry Point	Mar-14 Jun-14 Sept-14	0.093 (0.085-0.10)	ug/L	N/A	N/A	Naturally-occurring element; used in making steel and other alloys; chromium-3 or -6 forms are used for chrome plating, dyes and pigments, leather tanning, and wood preservation
	Maximum Residence	Mar-14 Jun-14 Sept-14	0.107 (0.091-0.12)	ug/L	N/A	N/A	
Strontium	Entry Point	Mar-14 Jun-14 Sept-14	190 (180-200)	ug/L	N/A	N/A	Naturally-occurring element; historically, commercial use of strontium has been in the faceplate glass of cathode-ray tube televisions to block x-ray emissions
	Maximum Residence	Mar-14 Jun-14 Sept-14	183.3 (170-200)	ug/L	N/A	N/A	
Molybdenum	Entry Point	Mar-14 Jun-14 Sept-14	1.2 (1.1-1.3)	ug/L	N/A	N/A	Naturally-occurring element found in ores and present in plants, animals and bacteria; commonly used form molybdenum trioxide used as a chemical reagent
	Maximum Residence	Mar-14 Jun-14 Sept-14	0.93 (nd-1.2)	ug/L	N/A	N/A	
Vanadium	Entry Point	Mar-14 Jun-14 Sept-14	0.143 (nd-0.23)	ug/L	N/A	N/A	Naturally-occurring elemental metal; used as vanadium pentoxide which is a chemical intermediate and a catalyst
	Maximum Residence	Mar-14 Jun-14 Sept-14	0.177 (nd-0.23)	ug/L	N/A	N/A	

Unregulated Contaminants Not Detected During Testing

In 2014, Clay WDs was required to collect and analyze drinking water samples for unregulated contaminants. The following contaminants were tested for but not detected; 1,2,3-trichloropropane, 1,3-butadiene, chloromethane (methyl chloride),1,1-dichloroethane, bromomethane (methyl bromide), chloromethane (methyl chloride), 1,1-dichloroethane, chlorodifluoromethane (HCFC-22), bromochloromethane (halon 1011), 1,4-dioxane, cobalt, perfluorooctanesulfonate acid (PFOS), perfluorooctanoic acid (PFOA), perfluorononanoic acid (PFNA), perfluorohexanesulfonic acid (PFHxS), perfluoroheptanoic acid (PFHpA), and perfluorobutanesulfonic acid (PFBS).

Cryptosporidium and Giardia:

New York State law requires water suppliers to notify their customers about the risks of Cryptosporidium and Giardia. These pathogens are of concern because they are found in surface water and ground water under the influence of surface water throughout the United States. Filtration and disinfection are the best methods for use against them, but 100% removal or inactivation cannot be guaranteed. Cryptosporidiosis and Giardiasis are intestinal illnesses caused by these microscopic parasites. Symptoms of infection include nausea, diarrhea, and cramps. Most healthy people can overcome the disease within a few weeks.

In 2015, the presence of Cryptosporidium and Giardia was tested for in Lake Ontario and Otisco Lake as part of the routine plans of OCWA and the Metropolitan Water Board. Both the raw lake waters and the treated waters were tested. Additionally, OCWA also tested its recycled wash water, which is water that is reclaimed after filter backwashing and returned to the treatment plant influent stream for retreatment.

OCWA took a total of 36 Cryptosporidium and Giardia samples in 2015 representing water originating from Otisco Lake. Monthly samples were taken from the Raw (untreated) water and the Finished (treated)

water. The Recycled water was also sampled monthly. Cryptosporidium was not detected in any sample in 2015. Giardia was detected in February, March, and September's Recycled Water Sample. No other samples of the monthly Raw water, Finished water, or Recycled water had any Cryptosporidium or Giardia detected.

MWB took a total of 9 Cryptosporidium and Giardia samples in 2015 representing water originating from Lake Ontario. Raw water samples were taken monthly April through December. No Cryptosporidium or Giardia was detected in any of MWB's Raw water samples.

During 2015, No Cryptosporidium or Giardia was found in the Raw or Finished waters of Otisco Lake or Lake Ontario.

Some people may be more vulnerable to disease causing microorganisms or pathogens in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice from their health care provider about their drinking water. EPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium, Giardia and other microbial pathogens are available from the Safe Drinking Water Hotline (800-426-4791).

Individuals who think they may have Cryptosporidiosis or Giardiasis should contact their health care provider immediately. For additional information on Cryptosporidiosis or Giardiasis you may contact the Onondaga County Health Department, in writing at 421 Montgomery St., 12th Floor, Syracuse, NY 13202 or by calling 435-6600.

Bottled water may be a viable alternative, however the same degree of caution applied to your tap water should be used in selecting a bottled water supplier. To that end, a list of certified bottled waters for sale in New York (along with their sources) can be obtained from the New York State Department of Health by calling 1-800-458-1158.

The EPA's Surface Water Treatment Rule (SWTR) established water treatment standards specifically designed to ensure the removal or deactivation of Giardia and other microbial contaminants. The EPA is currently working on enhancing these standards to further ensure protection against exposure to Cryptosporidium from drinking water. The OCWA and MWB treatment plants are in full compliance with all current operational, monitoring, and reporting requirements. OCWA's internal performance standards are actually tougher than the law currently requires.

For example, the SWTR requires a treatment plant's finished water turbidity (a measure of clarity used to check filtration particulate removal) to be less than 0.30 NTUs 95% of the time. For 2015 the OCWA filtration plant finished water turbidity was less than 0.08 NTUs 95% of the time based on continuous four-hour sampling intervals. MWB's filtration plant finished water turbidity, for 2015, averaged less than 0.042 NTUs 95% of the time, again based on four-hour sampling intervals. Cryptosporidium regulations contain improved filtration performance requirements to ensure removal of any protozoans that may be present. Part of the enhanced filtration requirements involved lowering the turbidity criteria from the 0.50 to the 0.30 NTU range. Both the OCWA and MWB treatment plants are doing better than the regulated levels.

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.

DO I NEED TO TAKE SPECIAL PRECAUTIONS?

Some people may be more vulnerable to disease causing microorganisms or pathogens in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice from their health care provider about their drinking water. EPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium, Guardia and other microbial pathogens are available from the Safe Drinking Water Hotline (800-426-4791).

INFORMATION ON FLUORIDE ADDITION

OCWA is one of many drinking water systems that provide drinking water with a controlled, low level of fluoride for consumer dental health protection. According to the United States Center for Disease Control, fluoride is very effective in preventing cavities when present in drinking water at a target dose. Until June of 2015 the optimal target dose was determined to be between 0.8 to 1.2 mg/l. During this period monitoring showed fluoride levels in your water were in the optimal range 93.5% of the time for Otisco Lake water and 100% of the time for Lake Ontario water. In June of 2015 on the optimal target dose of fluoride was changed to 0.7 mg/l. Since then monitoring showed fluoride levels in your water were within the 0.6 and 0.8 mg/L range 98.6% of the time for Otisco Lake water and 99.7% of the time for Lake Ontario water. To ensure that the fluoride supplement in your water provides optimal dental protection, the NYS Health Department requires that we monitor fluoride levels on a daily basis.

WHY SAVE WATER AND HOW TO AVOID WASTING IT?

Unlike many areas in the country, OCWA has access to more than enough water to meet its current and future needs. Otisco Lake can safely yield 25 million gallons of water per day. Lake Ontario is a direct connection to the Great Lakes. The Great Lakes contain 25% of the world's fresh water. However, even with this abundance, water must be used wisely. It takes energy and resources to treat and deliver the water to the consumer.

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, then check the meter after 15 minutes, if it moved, you have a leak.

If you are interested in additional water saving tips, call our **CUSTOMER SERVICE DEPT.** at 652-3800 Ext. 146.

CLOSING.

The Uniform Water District is pleased to provide this information in accordance with the State's Public Health Law requiring water suppliers to provide an annual water quality report. The statement includes information on water quality; quantity, treatment, conservation and State Health Dept. supplied public education information. This information formerly available on request will now be mailed directly to consumers on an annual basis. Meeting for the Water Budget is held at the first Town Board meeting in November 2016.

Frequently Asked Questions

What is the pH of my water?
OCWA's pH is 7.3 to 8.3, slightly basic.

Is my water Hard or Soft?
The hardness of OCWA's water ranges from 100 to 190 ppm. That is equal to about 6 to 11 grains per gallon. It is considered moderately hard. Hardness is a measurement of calcium carbonate in the water and is not a health concern.

Will having a water softener installed improve the water quality in my home?
No, softening does not improve the sanitary quality of water. Softeners mostly remove calcium carbonate. They will stop 'spotting' or 'scaling' which may occur on certain surfaces, and under certain conditions, when water puddles or droplets are allowed to evaporate. Water softeners may increase water usage because it takes more soft water to rinse away soap. It is ultimately a matter of personal preference.

What can I do about dirty or rusty water?
Water that is dirty or rusty can be caused by changes in flow inside the pipes. Usually, this is due to a sudden increase in flow, but sometimes, also by a change of direction. Leaks, hydrant usage or, changes in valve positioning can rile things up and cause these problems. If the problem doesn't clear up in a short period of time call us and we will try to help. OCWA will investigate and correct the cause of the problem and flush its piping if necessary. You may then be instructed to flush the piping in your own home. The water should clear up after running it a bit.

What about Taste or Odor Problems?
Algae most commonly cause tastes and odors, which are: earthy, musty, grassy, or fishy. At the Otisco Lake and Lake Ontario plants water is filtered through granular activated carbon. At times, powdered activated carbon can also be added to adsorb the offensive tastes and odors and then the carbon and the algae both are filtered out. Algae blooms are common in the warm and sunny months and the carbon dosage is always being monitored and adjusted. Occasionally, some tastes and odors do get through. Customer complaints about taste and odor are taken very serious. Tastes and odors originating with algae have no adverse health effects.

What about chlorine taste and odor?
Chlorine dissipates as it travels down the pipeline. In order to ensure that customers living far from the treatment plant get water that is adequately disinfected, the dosage of chlorine received by customers living close to the plant is higher. OCWA tries to accommodate everyone, but in the case of a person very sensitive to chlorine living very close to the plant, this may not be possible. In order to remove the chlorine yourself, here are a few things you can do:

- Fill a pitcher and let it stand in the refrigerator overnight.
- Fill a glass or jar with water and let it stand in sunlight for 30 minutes.
- Pour water between containers about 10 times.
- Heat the water to about 100 degrees Fahrenheit.
- Chlorine kills organisms that may cause disease. If you remove the chlorine, be sure to refrigerate the water to limit regrowth**.**

Terms & Abbreviations

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

Chlorine Residual – the amount of chlorine in water available for disinfection**.**

Disinfection By-product (DBP) – Chemical compounds that result from the addition of chlorine to water containing organic substances.

HAA5 (Haloacetic Acids) – the combined concentration of the following five contaminants; Dibromo-, Dichloro-, Monobromo-, Monochloro-, and Trichloro –, acetic acids**.**

Inorganic Contaminant – chemical substances of mineral origin, such as iron or manganese**.**

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 possible.

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.

mg/l – (milligrams per liter) corresponds to one part of liquid in one million parts of liquid (parts per million – **ppm**).

Microbiological Contaminant – Very small organisms, such as bacteria.

N/A – not applicable.

nd – not detected at testing limits.

NTU – Nephelometric Turbidity Unit - a measurement of particles in water.

Organics – substances containing the element carbon. These can be naturally occurring or man made, and can include pesticides, solvents, and by-products of disinfection.

pCi/L – picocuries per liter; units of concentration of radioactive substances.

Radionuclides– Contaminants giving off ionizing radiation**.**

TTHM – (Total Trihalomethanes) – the combined concentration of the following four contaminants; Bromodichloromethane, Bromoform, Chloroform, and Dibromochloromethane.

TON (Threshold Odor Number) – The greatest number dilutions of a sample with “odor-free” water yielding a definitely perceptible odor.

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

ug/l – (micrograms per liter) corresponds to one part of liquid in one billion parts of liquid (parts per billion – **ppb**).

SWAP Summary for OCWA

The NYS DOH has evaluated OCWA's susceptibility to contamination under the Source Water Assessment Program (SWAP), and their findings are summarized in the paragraphs below. It is important to stress that these assessments were created using available information and only estimate the potential for source water contamination. Elevated susceptibility ratings do not mean that source water contamination has or will occur for OCWA. OCWA provides treatment and regular monitoring to ensure the water delivered to consumers meets all applicable standards.

Otisco Lake Source (water produced by OCWA):
This assessment found a moderate susceptibility to contamination for OCWA's Otisco Lake source of drinking water. The amount of row crops in the assessment area results in a medium susceptibility to pesticides. No permitted discharges are found in the assessment area. There is also noteworthy contamination susceptibility associated with other discrete contaminant sources, and these facility types include: mines. While lakes are not generally considered to have a high natural sensitivity to phosphorus in SWAP, this lake already shows algae problems. Therefore, additional phosphorus contribution would likely result in further water quality degradation.

Lake Ontario Source (water purchased from Metropolitan Water Board):
Lake Ontario Source (water purchased from Metropolitan Water Board): The Great Lakes' watershed is exceptionally large and too big for a detailed evaluation in the SWAP. General drinking water concerns for public water supplies which use these sources include: storm generated turbidity, wastewater, toxic sediments, shipping related spills, and problems associated with exotic species (e.g. zebra mussels-intake clogging and taste and odor problems). The summary below is based on the analysis of the contaminant inventory compiled for the drainage area deemed most likely to impact drinking water quality at this PWS intake.

This assessment found a moderate susceptibility to contamination for this source of drinking water. The amount of agricultural lands in the assessment area results in elevated potential for pesticides contamination. Non-sanitary wastes may increase contamination potential. There is also noteworthy contamination susceptibility associated with other discrete contaminant sources, and these facility types include: mines.

Water Sources and Treatment

Customers of the Clay WDs receive water from the Onondaga County Water Authority (OCWA) that originates from Otisco Lake or Lake Ontario. Customers located in certain areas may get a mixture of these waters or their source water may vary with changes in seasonal demand. In 2015 OCWA supplied approximately 39.1 million gallons per day to its 340,000 residential customers located in suburban Onondaga County, and parts of Madison, Oneida, Oswego, and Cayuga counties. OCWA also supplies water daily to thirty large industrial customers and two municipal wholesale water customers. OCWA can also supply water on an intermittent or emergency basis to seven additional municipal water systems.

OCWA treats and delivers water from Otisco Lake; the easternmost and smallest finger lake. In 2015, approximately 18.7 million gallons per day or 47.8 % of OCWA's water came from Otisco Lake. The customers receiving water originating from Otisco Lake are mostly located in the southern and western half of Onondaga County.

OCWA buys water wholesale from the Metropolitan Water Board at a number of different supply connections. MWB treats water originating from Lake Ontario near the City of Oswego. In 2015, approximately 19.3 million gallons per day or 49.4% of OCWA's water came from Lake Ontario. The

customers receiving water originating from Lake Ontario are mostly located in the northern and eastern half of Onondaga County. OCWA customers in Madison, Oneida, Oswego, and Cayuga counties receive all their water from Lake Ontario.

The first step in water treatment is to protect the source. OCWA has been conducting ongoing watershed inspection, monitoring, and educational programs for a number of years. These programs are in conjunction with the State and Onondaga County Departments of Health. OCWA and MWB monitor lake conditions on regular intervals prior to treatment.

The New York State Department of Health has completed a Source Water Assessment Program in order to better recognize potential sources of contaminants in every water source used throughout the State. This assessment can be found in this report under the heading SWAP Summary for OCWA.

OCWA has 2 intake pipes located in Otisco Lake. The water entering these pipes is immediately disinfected with either Sodium hypochlorite or Chlorine dioxide to discourage the growth of zebra mussels. The water then travels, by gravity, approximately 5 miles to OCWA's Water Treatment Plant located in Marcellus, NY. Water first enters the Rapid Mix tank where a coagulant (polyaluminum chloride) and a taste and odor control chemical (powdered activated carbon) is added. After 30 seconds of mixing, the water enters the Contact Basins where the calm conditions allow the coagulant to make the small particles adhere together forming larger particles. Some of these particles settle and are cleaned out later. The contact time in these basins also allows the powdered activated carbon (used only when needed) to adsorb organic taste and odor causing chemicals. After about 1 hour of contact time the water enters the filters. Particles are removed as the water passes through one of six multimedia filters. These filters consist of granular activated carbon, silica-sand, and hi-density sand. The filters are washed periodically and the water used to do this is collected in lagoons and allowed to settle. It is then recycled back to the start of the treatment plant to be treated again. After filtration, the water is again disinfected with Sodium Hypochlorite and fluoride is added. The water is stored in large tanks located at the treatment plant to provide adequate contact time for the chlorine to work. Once the water leaves the tanks orthophosphate is added to provide a coating for the pipes in the distribution system and in your home. This is done in order to prevent the leaching of lead and copper from your pipes and into your water.

The Metropolitan Water Board pumps water from Lake Ontario through an 8 foot diameter intake it shares with the City of Oswego. Upon entering the Raw Water Pumping Station, lake water is treated with carbon dioxide to suppress pH thereby increasing the effectiveness of chemical coagulation. Potassium permanganate is applied seasonally to raw water for taste and odor control and to discourage the growth of zebra mussels. The water is pumped approximately 2 miles to MWB's treatment plant. Water entering the plant is treated with sodium hypochlorite (disinfectant) and polyaluminum chloride (coagulant) and is flash mixed. The water then enters three contact basins where slow mixing allows small particles to accumulate and form larger, more readily filtered particles. After about 2 hours of contact time, the water flows into dual media filters consisting of granular activated carbon and filter sand whereby particulate contaminants are removed. After filtration three treatments are applied: fluoride to reduce tooth decay, sodium hypochlorite to disinfect and sodium hydroxide for corrosion control.

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.