

**2009 – 2010 SUPPLEMENT
For Calendar Year 2009
ANNUAL WATER QUALITY REPORT
BUFFALO WATER AUTHORITY
PWS ID # NY1400422**



Buffalo Water Authority
Managed By American Water

City of Buffalo-Division of Water
Managed by



AMERICAN WATER

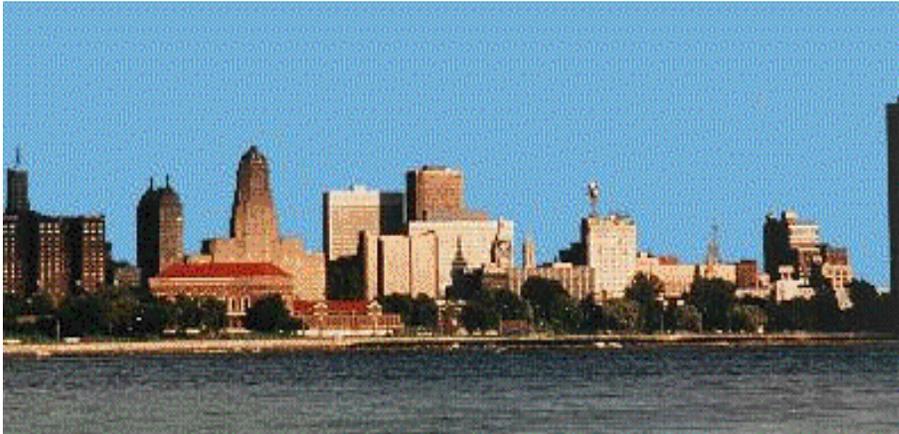
**Mayor of the City of Buffalo:
Byron W. Brown**

**Commissioner of Public Works:
STEVEN J. STEPNIAK**

Oluwole McFoy
Chairperson, Buffalo Water Board

Jeff McIntyre
Regional Manager, American Water

James Halliday
Project Manager, American Water



**Buffalo's Water Front
Water is Life ... Don't Waste It!**

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BUFFALO WATER BOARD INFORMATION

Buffalo Water Board

Oluwole McFoy
Chairperson

Donna Estrich
Vice Chairperson

Board Members

Gerald E. Kelly

William Sunderlin

Important Service Numbers

Billing Office	716 – 847 - 1065	For billing questions & service problems
Customer Service		
Dispatch	716 – 851 - 4747	To Report Leaks
	716 – 851 - 4748	
	716 – 851 - 4749	
Meter Installations	716 – 852 - 0197	
Meter Repair	716 – 851 - 4741	
Service Inspections	716 – 851 – 4782	Final reads on meter
Water Treatment Plant	716 – 851 – 4720	
Water Treatment Plant Laboratory	716 – 851 - 4704	Water quality complaints & questions
Water Treatment Supervisor	716 – 851 - 4726	
Erie County Dept. of Health	716 - 858 - 7677	For health issues
<i>City of Buffalo Web site: http://www.ci.buffalo.ny.us/</i>		

Billing & Customer Service
American Water
281 Exchange Street
Buffalo, NY 14204

Water Treatment Plant
American Water
2 Porter Avenue
Buffalo, NY 14201
PWS ID # NY1400422

Introduction

Este informe contiene información muy importante sobre su agua beber. Tradúzcalo ó hable con alguien que lo entienda bien

To comply with State regulations, the Buffalo Water Authority managed by American Water will be annually issuing a report describing the quality of your drinking water. The purpose of this report is to raise your understanding about drinking water and awareness of the need to protect our drinking water source. The following is the 16th annual water quality report prepared by the Buffalo Water Authority managed by American Water.

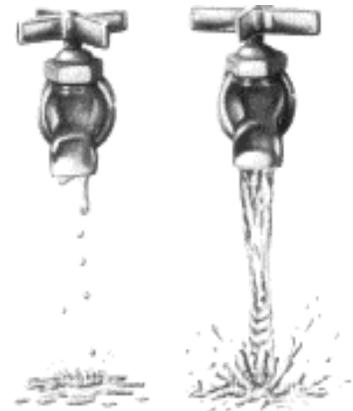
Last year, your tap water met all State drinking water health standards. We are proud to report that our system did not violate a maximum containment level or any other water quality standard. This report provides an overview of last years water quality. Included are details about where your water comes from, what it contains, and how it compares to State standards. We are pleased to provide you with this information because informed customers are our best customers.

During 2009, our system was in compliance with all applicable state drinking water operating, monitoring and reporting requirements.

If you have any questions about this report or concerning your drinking water, please contact:

Leonard Milioto
Water Treatment Supervisor
2 Porter Ave, Buffalo, NY 14201
Tel: (716) 851-4726, Fax: (716) 851-4672

We want you to be informed about your drinking water. If you want to learn more, please attend any regularly scheduled Water Board meetings, held the second Wednesday of each month at 9AM, Room 502 – City Hall.



**For Health Issues contact:
Erie County Health Department
95 Franklin Street
Buffalo, NY 14202
(716) 858-7677**

Abbreviations & Definitions

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

Anionic polymer: A long-chained, negatively-charged compound used to concentrate debris into sludge.

Backwash, Backwash Water: A backward flow of water through a filter bed, allowing trapped debris and floc to be cleared from the filter media.

Backwash Station: An area, just downstream from the equalization station, where backwash water, from the filter cleaning process, is pumped to the Thickener Tanks.

Chlorine: A highly reactive gas, used as a disinfectant in water treatment.

Clearwell: A finished water storage area. Filtered water enters the Clearwell from the filter beds. Clearwell water is pumped to the distribution system, once it is treated with orthophosphate.

Coagulant: A material, such as PACl (polyaluminum chloride), which will form a precipitate in water, and cause the agglomeration of finely divided particles into larger particles, which can then be removed by settling and/or filtration.

Coliform, Coliform bacteria: A group of bacteria that are normally abundant in the intestinal tracts of human and other warm-blooded animals and are used as indicators (being measured as the number of individuals found per 100 milliliter of water) when testing the sanitary quality of water.

Contaminant: Any physical, chemical, biological, or radiological substance or matter in water that may be harmful to human health or which degrades the palatability of water.

Decant: The draw off from the upper layer of liquid after the heaviest material has settled

Disinfection, Disinfectant: is a treatment, which destroys or renders inactive, harmful microorganisms (bacteria, viruses and cysts) to levels, deemed to be safe by public health standards; viable microorganisms may still be present.

Disinfection By-Products (DBP): Byproducts of the disinfection of water by chlorine and chlorine compounds. DBP are regulated by the EPA because they are considered harmful in concentrated amounts. Trihalomethanes (THM's) and Halogenated Acetic Acids (HAA's) are among the most regulated DBP's.

Distribution System: The system of pipes and valves supplying water to communities and industries.

Abbreviations & Definitions continued ...

Equalization Basin: An area upstream from the filter beds that collects backwash water from the filter cleaning process. The backwash contents from the equalization basin are directed into the backwash station.

Filter Beds: 40 rapid, anthracite sand, filters designed to remove undissolved or suspended particles from water by recirculating the water through anthracite media. Filtered water is directed into the Clearwell to await distribution demand.

Filter Aid: A nonionic polymer or a positively charged coagulant such as polyaluminum chloride used to “tighten” filters, and improve filtration. A filter aid is only used, when necessary.

Floc: The clumps or tufts formed when suspended particles combine with chemical substance or compound that promotes the combination, agglomeration, aggregation or coagulation of suspended particles in the water.

Flocculation Chambers: Chambers with large, slow moving paddles. The slow mixing action promotes floc formation.

Fluoride: Sodium silicofluoride, a fluoride compound added to drinking water, to promote dental health.

HAA (*Halogenated Acetic Acids*): Organic compounds, which are disinfection by-products of the chlorination of drinking water, currently the EPA lists HAA’s as a health advisory

Intake: A structure located in the Emerald Channel at the Northeastern portion of Lake Erie, just downstream from the Niagara River, which provides source water for Buffalo Water Authority’s water treatment process.

Low Lift Pumps: Centrifugal pumps that direct water from the raw water conduit to the underground flocculation and settling basins.

MCL (*Maximum contaminant level*): The highest level of contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology

MCLG (*Maximum contaminant level goal*): The level of contaminant in drinking water below which there is no known or expected risks to health, MGLGs allow for a margin of safety.

MRDL (*Maximum Residual Disinfectant Level*): The highest level of a disinfectant (chlorine) allowed in drinking water (4.0 ppm). There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

Abbreviations & Definitions continued ...

n/a (NA): Not any. NLS: No limit set. ND: Not Detected.

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

Ortho- phosphate: A chemical blend used as a TT (Treatment Technique) used to reduce the level of lead and copper contamination in drinking water.

Nonionic polymer: A long-chained, non-charged compound used to concentrate debris into sludge, and may also be used as a filter-aid, in the water treatment process

Pathogenic: Disease causing

ppb: Parts per billion, or micrograms per liter ($\mu\text{g/L}$).

ppm: Parts per million, or milligrams per liter (mg/L).

Polyaluminum Chloride (PACl) A coagulant used in water treatment, used to form floc and also used as a filter-aid, in the water treatment process. PACl 50 has 50% basicity.

Potable water: water of a quality suitable for drinking, which meets drinking water standards.

Rapid Mix (Chemical Induction Unit): A structure designed to mix chemicals in the treated water conduit.

Raw Water: Lake Erie water, used by the Buffalo Water Authority as its source water.

Raw Water Conduit: Large metal pipe bringing untreated lake water from the intake to the onshore screen house, then to the chemical treatment points at the water treatment plant.

Screen House: An onshore treatment building containing a series of large, traveling screens. These screens are designed to remove large objects and debris from lake water prior to chemical water treatment.

Sedimentation, Settling: The process of suspended solid particles settling out (going to the bottom of the vessel) in water.

Settling Basins: Large, underground basins allowing heavy floc to settle out of treated water, prior to filtration. The Buffalo Water Authority has 2 settling basins, north & south.

Sludge: Concentrated backwash floc. Sludge is directed to an onsite lagoon.

Source Water: See Raw Water.

Abbreviations & Definitions continued....

Thickening Tanks: An onsite backwash treatment facility designed to concentrate and separate filter backwash into its' sludge and decant components. The Thickening Tanks use a nonionic polymer and settling tubes to treat filter backwash.

TOC (Total Organic Carbon); SUVA (Specific Ultraviolet Absorption); DOC (Dissolved Organic Carbon); UV_{254} : A measure of the organic content of the water. This is a precursor to disinfection by-product when combined with the chlorination of drinking water

Treated Water Conduit: Large metal pipe directing chemically treated water to various stages of the water treatment process.

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

;

TTHM (Total Trihalomethane): Organic compounds, which are disinfection by-products of the chlorination of drinking water. Some people who drink water with TTHMs in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous system, and may have an increased risk of getting cancer.

Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system. State regulations require that turbidity must always be below 5 NTU. The regulations require that 95% of the turbidity samples collected have measurements below 0.5 NTU.

Washwater Tanks: Tanks, holding potable water, used to backwash filter beds.

Weir: is a structure that extends across the width of a channel and is used to impound, measure, or in some way alter the flow of water through the channel.

90th % Value: The value reported for lead & copper represents the 90th %. A % is a value on a scale of 100 that indicates the % of a distribution that is equal to or below it. The 90th % is equal to or greater than 90% of the lead & copper values detected at your water system.

History of Water Treatment

We live on a water planet, covering over 70% of the earth's surface. Oceans contain 97 % of the Earth's water (by volume), which is too salty for drinking, irrigation or industrial use. That leaves 3% of earth's total water that's considered fresh water. About 2.997% of this fresh water is trapped in polar ice caps and deep within earth surface, which is too costly to extract. That leaves only .003% of earth's total available water by volume available for human use. If the world's water were contained in 100 liters or 26 gallons, then what is readily available to us would amount to one-half teaspoon.

Long before humans learned to rub two sticks together to make fire or took a hammer and chisel in hand to carve out the first wheel, they thirsted for pure drinking water. Evidence from almost all historical periods suggests that people took measures to ensure a fresh drink of water. But sometimes that drink came with more than its thirst quenching qualities.

Early humans thought that the taste and look of the water determined its purity, and they did not consider that even the best tasting, clearest water could contain disease-causing organisms. We know now that just because water tastes good, it is not necessarily safe to drink. However, the efforts of these water treatment pioneers were not in vain. It was through their trials and errors that we now know how to make water safe to drink.

4000 years ago, in India and parts of China, the Hindu's devised the first recorded drinking water standards. It directed its people to heat foul water by boiling it and exposing it to sunlight and by dipping a piece of hot copper seven times into the water, then to filter and cool in an earthen vessel. This enlightened treatment not only produced aesthetically acceptable water, but a disinfected potable source. This treatment was a directive intended for individuals and families, not a community water supply.

After 1500 BC, the Egyptians first discovered the principle of coagulation. They applied the chemical alum for suspended particle settlement. Pictures of this purification technique were found on the wall of the tomb of Amenophis II and Ramses II.

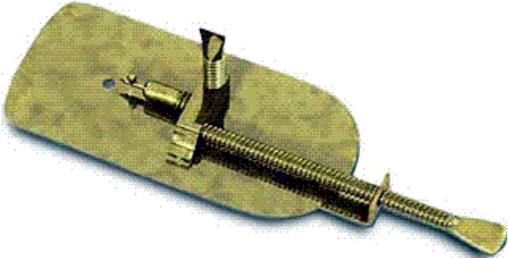


Image Caption: This ancient Egyptian clarifying device was found pictured on the wall of the tomb of Amenophis II at Thebes.

The inscription was carved in 1450 B.C.

History of Water Treatment (continued)

After the fall of the Roman Empire, science and technology took a serious plunge. Municipal water often became a source of disease and epidemics, due to a lack of adequate treatment and serious misconceptions concerning water quality. Only after the Dark Ages, due to advances in science and technology, was there a realization that clean looking water was not necessarily safe water.



Van Leeuwenhoek Microscope

Before the invention of the microscope, the idea of microscopic life was unimagined. Even with that tool it still took over 200 years before a connection between microbes and disease was made. In the mid 19th Century it was proven that cholera was spread by contaminated waters. By the late 19th Century, Louis Pasteur developed the particulate germ theory of disease, which finally established a cause and effect relationship between

microbes and disease.

Filtration of water was established as a method of clarifying water in the 18th Century. In 1832 the first municipal water treatment plant was built in Scotland. Unfortunately the aesthetic properties of the water were the major concerns of the time, while effective water quality standards remained absent until the late 19th Century.

In the US, municipal water systems originated as early as 1799, by 1860 over 400 were in service providing water to major cities and towns. Because water quality standards were lacking, these systems contributed to major outbreaks of disease by spreading pathogenic organisms.

In the 1890's effective water treatment techniques began to develop. Coagulation and rapid sand filtration were instituted, which significantly reduced both turbidity and bacteria in water supplies. Chlorination of water was eventually introduced in 1908. Finally a community's water supply could, in fact, be considered safe.

Buffalo's water system history began in 1827, when the Buffalo & Black Rock Jubilee Water Works was formed. It supplied well and spring water through an assemblage of wooden pipes. In 1852 the Buffalo Water Works Co. formed, and pumped its water from the Niagara River. The City of Buffalo purchased both companies in 1868 and began construction of an Intake and tunnel system in the Niagara River. This location proved unfortunate. River turbulence and shoreline pollution caused a public outcry for a new intake.

In 1913 this new intake was completed. It was located upstream from the original one, in Lake Erie's Emerald Channel. In 1914 Buffalo began chlorinating its delivered water, and in 1926 the Water Treatment Plant was built utilizing coagulation and filtration along with disinfection of its delivered water.

Source Water Assessment Program

A source water assessment was completed under the NYS DOH's Source Water Assessment Program (SWAP). The following is the Executive Summary of this report.

“The New York State Department of Health recently completed a draft Source Water Assessment of the raw water supply's source under the state's Source Water Assessment Program (SWAP). The purpose of this program is to compile, organize, and evaluate information regarding possible and actual threats to the quality of public water supply (PWS) sources. It is important to note that source water assessment reports estimate the potential: for untreated drinking water sources to be impacted by contamination. These reports do not address the safety or quality of treated finished potable tap water.

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 associate with exotic species (e.g. zebra mussels – intake clogging and taste and odor problems). The SWAP is based on the analysis of the contaminant inventory compiled for the drainage area deemed most likely to impact drinking water quality at this public water supply raw water 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 protozoa and disinfection byproduct precursor contamination. There is also a high density of sanitary wastewater discharges which results in elevated susceptibility for nearly all contaminant categories.

There is also noteworthy contamination susceptibility associated with other discrete contaminant sources, and these facility types include: Toxics Release Inventory facilities, Chemical Bulk Storage facilities, inactive hazardous waste sites, landfills and Resource Conservation and Recovery Act facilities.”

If you have any questions about the state's Source Water Assessment Program, please contact:

**Ms. Dolores Funke, P.E.,
Senior Public Health Engineer
Erie County Health Department at 858-6966.**

For a complete copy of this report, contact the Erie County Health Department at 716-858-7677.

Formation of the Great Lakes

One Billion Years Ago

About a billion years ago, a fracture in the earth running from what is now Oklahoma to Lake Superior generated volcanic activity that almost split North America. Over a period of 20 million years, lava intermittently flowed from the fracture creating mountains covering the regions now known as northern Wisconsin and Minnesota, and eastern Canada. Over time these mountains eroded, while occasional volcanic activity continued. Molten magma below the highlands of what is now Lake Superior spewed out to its sides, causing the highlands to sink and form a mammoth rock basin that would one day hold Lake Superior. Eventually the fracture stabilized and, over time, the rock tilted down from north to south.

5 Million Years Ago

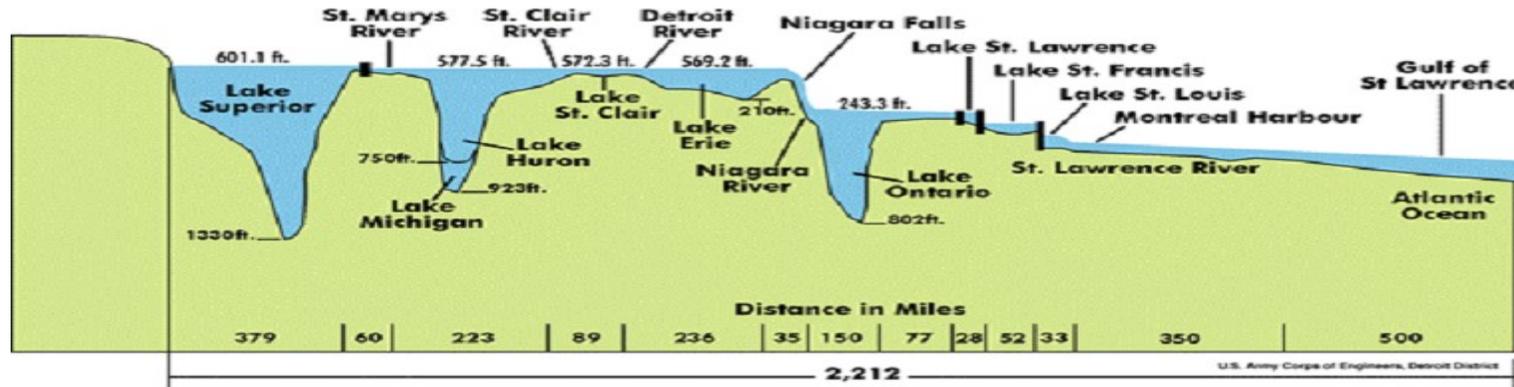
The region went from fire to ice with the arrival of the glaciers, which advanced and retreated many times over the last 5 million years. During the periods of glaciation, giant sheets of ice flowed across the land, leveling mountains and carving out massive valleys. Where the glaciers encountered more resistant bedrock in the north, only the overlying layers were removed. To the south, the softer sandstones and shales were more affected. As the glaciers melted and began receding, their leading edges left behind high ridges, some of which can be seen today in the cliffs of Door County, Wisconsin, and the Bruce Peninsula in Ontario.

Huge lakes formed between these ridges from the retreating ice fronts, and continually changed over time as the ice sheet moved northward. Early drainage from these lakes flowed southward through the present Illinois River Valley toward the Mississippi River, through the Trent River Valley between present lakes Huron and Erie and through the Lake Nipissing-Ottawa River Valley from Georgian Bay on Lake Huron downstream to Montreal, Quebec.

As the ice retreated about 7,000 years ago, the Saint Lawrence Seaway established itself as the outlet to the Atlantic Ocean.

About 4000 years ago lake levels dropped to current levels and present day river and stream inlets and outlets developed.

Formation of the Great Lakes One Continuous Channel Way



Four of the five Great Lakes are at different elevations, leading like a series of steps toward the Atlantic Ocean. The five individual lakes are connected to each other through channel ways, forming one system. Water continually flows from the headwaters of the Lake Superior basin through the remainder of the system.

The International Joint Commission, a binational agency established under the Boundary Waters Treaty of 1909 between Canada and the U.S., has the responsibility for regulation of flows on the St. Mary's and the St. Lawrence Rivers. These channels have been altered by enlargement and placement of control works associated with deep-draft shipping. Agreements between the U.S. and Canada govern the flow through the control works on these connecting channels.



Raw Water Source

IN GENERAL

The sources of drinking water (both tap and bottled) 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 materials, and can pick up substances resulting from the presence of animal or 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 EPA prescribe regulations which limit the amount of certain contaminants in water provided by public water systems. The State Health Department and FDA's regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.



The source of all Buffalo's water is Lake Erie.

Our water source is Lake Erie (a surface water source) which is the southernmost of the Great Lakes, bounded on the north by the Canadian province of Ontario, on the south by the U.S. states of Ohio, Pennsylvania, and New York, and on the west by the state of Michigan. During 2009, our system did not experience any restriction of our water source.

Lake Erie is the shallowest of the Great Lakes, with an average depth of only 62-ft. It also has the shortest detention time of the Great Lakes. Water remains in the lake for only 2.6 years before it is replaced by fresh water (as compared with 191 years in Lake Superior or 22.6 years in Lake Huron). It is also the siltiest of the Great Lakes. Its bottom consists of fine sand, easily upset during turbulent storms. The combination of its shallowness, short detention time and sandy unstable bottom bestows a great asset upon this body of water. The lake is able to quickly flush itself of harmful contaminants such as pesticides and other organic wastes. When Lake Erie becomes turbulent, fine particles of sand and silt become agitated and suspended throughout the lake. Organic contaminants will tightly cling to these particles and will be quickly flushed from the lake. Therefore water treatment begins as a natural process due to the structure and makeup of Lake Erie.

Lake Erie Facts and Figures

Lake Erie is the 11th largest world lake - (4th largest Great Lake by surface area)
Length: 241 miles; Width: 57 miles; Avg. Depth: 62'; Max Depth: 210'
Vol.: 116 miles³; Elevation: 569'; Shoreline: 871 miles; Surface area: 9,910 miles²
Drainage Basin Area: 30,140 miles²; Outlet: Niagara River & Welland Canal

Water Treatment



Buffalo's water intake is located in the northeastern region of Lake Erie, just before water enters the Niagara River. This region is known as the Emerald Channel, due to the sparkling clarity of its water. Water rushes into the intake through grates and collects in a circular pool where it drops 60 feet to a 12-foot diameter, mile-long tunnel burrowed under the lakebed. When necessary, chlorine may be added to the intake to control the spread of zebra and quagga mussels.

The water is gravity fed to an onshore screen house where traveling screens remove large objects such as sticks and other debris that can damage pumps. Gravity delivers the water through a conduit where

chlorine and fluoride, are added. Chlorine is used to disinfect the water, control zebra and quagga mussels and other organisms. Fluoride is added to guard against tooth decay.

Just prior to our Low Lift Pumps polyaluminum chloride-50 (PACl-50) is added. PACl-50 is a chemical coagulant designed to cause fine particles in the water to bind together forming floc. Pumps mix and direct the water to a rapid mix where additional coagulants may be added to enhance coagulation. The flow is directed to underground basins for flocculation and sedimentation.

At the flocculation area, the water is slowly mixed by mechanical paddles to enhance floc formation. This treated water then travels to the settling basins where the heavy floc is allowed to settle out by gravity. The water, still containing light floc, is directed over rapid sand filter beds where filtration occurs, removing fine floc. A filter aid (a polyaluminum chloride-50 (PACl-50)) is added, when necessary, to enhance filtration. This filtered water enters the Clearwell, where it is stored until needed in the distribution system.

The rapid sand filters occasionally need to be cleaned of trapped debris; this is done by backwashing the filters with potable water stored in our washwater tanks. To comply with EPA's Filter Backwash Recycle Rule the backwash water, containing filter bed debris, is recycled back to the raw water conduit after sludge production in the Thickening Tanks.

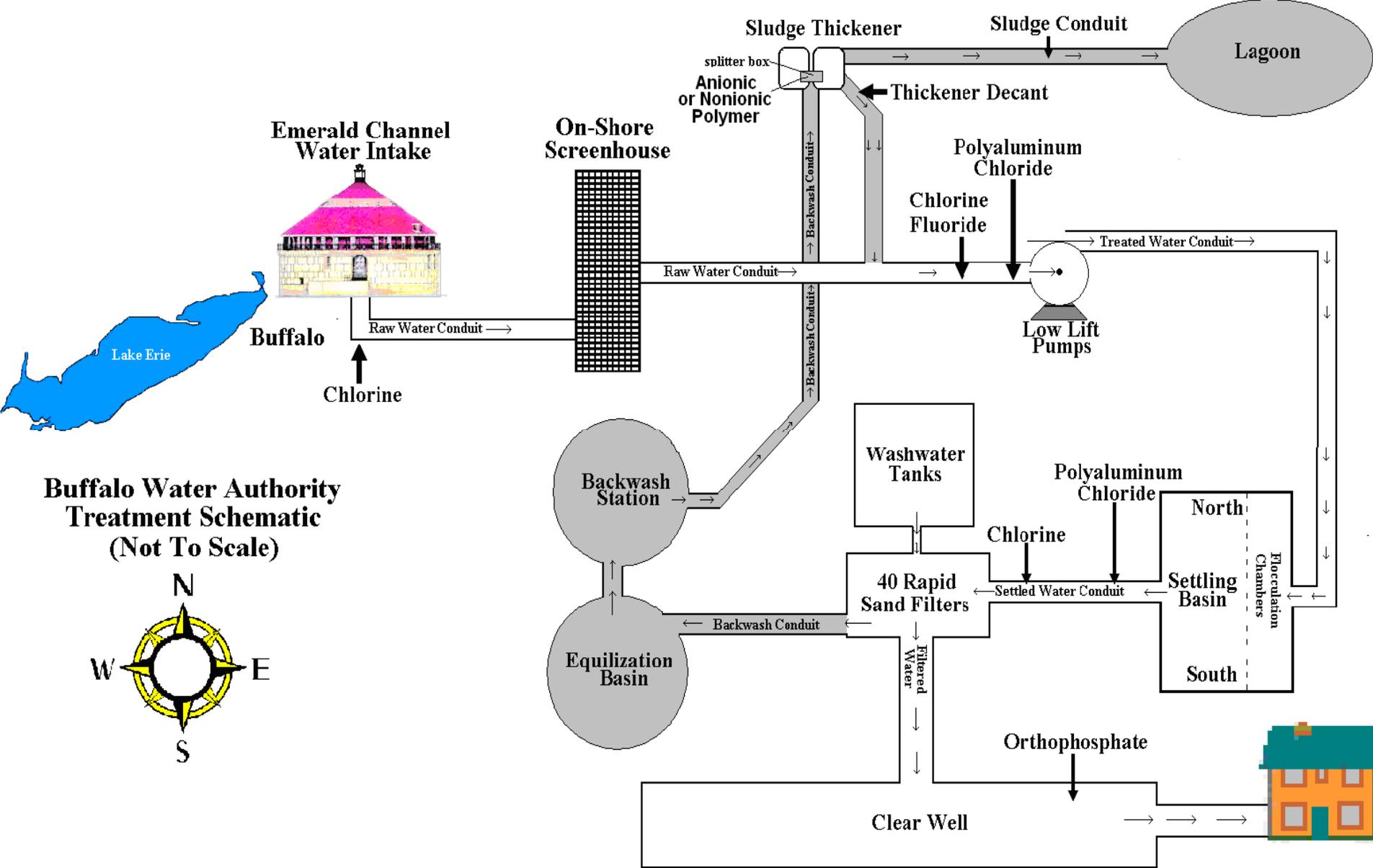
The Thickening Tanks concentrate the debris into sludge using a nonionic or anionic polymer (depending on water temperature) and settling tubes. The sludge portion is directed by pumps to an onsite lagoon where further processing takes place before removal to a landfill. The decant portion is directed over a weir at the top of the Thickening Tanks to the Raw water conduit, where the water treatment process begins.

As the potable water leaves the plant, a corrosion control additive (a sodium ortho/polyphosphate chemical blend) is used. This serves as a shield against lead leaching into the water from aged residential water pipes and service lines.

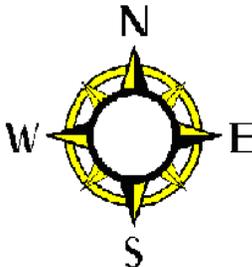
The Buffalo Water Authority is one of the many systems in New York State that adds a low level of fluoride to drinking water in order to provide consumer dental health protection. According to the United States Centers for Disease Control, fluoride is very effective in preventing cavities when present in drinking water at levels that range from 0.8 to 1.2 mg/l (parts per million). Our fluoride addition facility is designed and operated to meet this optimal range.

The quality and safety of the water is tested by an in house laboratory at every stage of the treatment process. The final product is pumped through the water mains to the community, where further tests are conducted from samples taken throughout the city, including private homes, businesses and public facilities ensuring that water continues to remain high in quality and safety, at your tap.

Water Treatment Schematic



Buffalo Water Authority
Treatment Schematic
(Not To Scale)



Water Distribution



Water is essential for all life. Besides drinking, bathing and recreation, water is used to fight fire, and has countless industrial applications. The City of Buffalo treated 23 billion gallons last year with an average of 63 million gallons each day to a population of approximately 276 thousand people, covering 46 square miles of piping network. On our highest single day, August 17th, we treated over 79 million gallons of water for distribution. This enormous network of pipes, valves, service connections and hydrants is maintained, day and night, throughout all seasons.

This water must be transported, after treatment, throughout the city. Pumps transport the treated water from a 28 million-gallon clear well, located below the filter beds, through two large conduits. The water travels through 800 miles of pipes and 25,000 valves to 80,000 service connections and 7,800 fire hydrants. In 2009 we have replaced or renovated approximately 5 miles of water mains.

Customer Costs

Our customer's billing rates are among the lowest in the state. **The average 2009 annual water bill was only \$323.16 per year.** The total quarterly bill includes the cost of water used and the service charge. Senior Citizens receive a significant discount.

Water Usage (Gallons)	Price per 1000 gal	
	Regular	Senior
Up to 74,805	\$2.54	\$1.53
Over 74,805– 269,299	\$2.38	\$1.42
Over 269,299	\$1.81	53¢

Quarterly Service Charge For 2009				
Meter Size	Regular Rate	Senior Rate	Meter Size	Regular Rate
5/8"	\$23.82	\$14.28	3"	\$357.24
3/4"	\$35.73	\$21.51	4"	\$595.38
1"	\$59.58	\$35.73	6"	\$1190.79
1 1/2"	\$119.10	\$71.55	8"	\$1931.07
2"	\$190.53	\$114.30	10"	\$2738.85
Senior rates not applicable for meters over 2"				

Facts About *Cryptosporidium*

Cryptosporidium is a parasite that lives and multiplies in the intestines of warm-blooded animals. Its eggs are shed through feces, where they can enter lakes, reservoirs and other sources of drinking water. When exposed to adverse conditions, these eggs can form a spore so rugged that they become impervious to even concentrated bleach.

Once the spore is ingested, an intestinal illness called *Cryptosporidiosis* may result. The incubation period may range from 1 - 12 days. *Cryptosporidium* can be spread by person-to-person, or animal-to person contact, and by drinking contaminated water.

Human *Cryptosporidiosis* was first reported in 1976. The primary symptom is acute diarrhea. Other symptoms include abdominal pain, vomiting, headache, loss of appetite and a low-grade fever.

Some persons infected with *Cryptosporidium* will not become ill, but others may be especially susceptible to *Cryptosporidiosis*. In most individuals with normal immune systems, symptoms generally persist for two weeks or less. But immunocompromised persons, including individuals receiving chemotherapy and kidney dialysis patients, persons on steroid therapy, and those with Crohn's disease or HIV/AIDS, may have severe and long-lasting illness.

Properly operated water treatment procedures are effective in providing a barrier to *Cryptosporidium* and other pathogenic microorganisms from reaching the distribution system. Due to their high resistivity to chlorine, normal disinfection methods are ineffective against these parasites. Proper filtration of these small tough organisms, including the coagulation and sedimentation processes, is the most important vehicle in their control and elimination.

Cryptosporidium is spread through contact with fecal matter. One can minimize the risk of acquiring and spreading this parasite by cleansing hands after fecal contacts such as after toilet use, diaper changing and picking up pet waste. Since cattle are a common source, avoid drinking raw milk, and cleanse hands after contact with any farm animals. Avoid drinking unfiltered water, and comply with any water advisory issued by local and state authorities. If uncertain about the quality of a water supply, exposing water to a rolling boil for at least one minute will kill *Cryptosporidium*.

Bottled water, unless distilled or certified for cyst removal may contain *Cryptosporidium*. Current standards for bottled water do not guarantee that it be *Cryptosporidium*-free.

If home water filters are used, filters should have a pore size of less than 2 microns. Home filters should be certified for cyst removal by the National Sanitation Foundation (NSF; Standard #53).

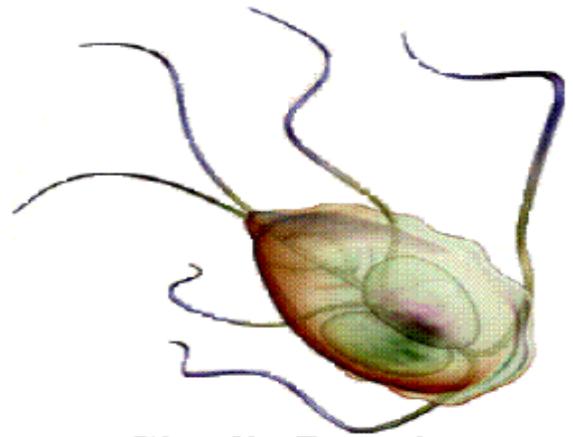


Cryptosporidium Oocyst

Facts About Giardia

Giardia is a microbial pathogen present in varying concentrations in many surface waters and ground water under the influence of surface water. It is removed/inactivated through a combination of filtration and disinfection or by disinfection.

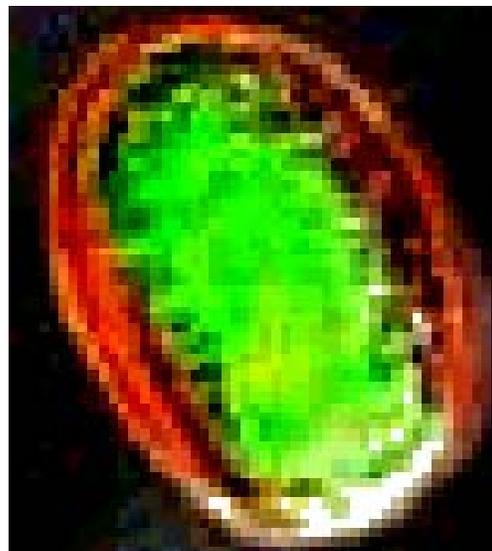
Ingestion of Giardia may cause giardiasis, an intestinal illness. People exposed to Giardia may experience mild or severe diarrhea, or in some instances, no symptoms at all. Fever is rarely present. Occasionally, some individuals will have chronic diarrhea over several weeks, with significant weight loss. Giardiasis can be treated with anti-parasitic medication. Individuals with weakened immune systems should consult with their health care provider about what steps would best reduce their risks of becoming infected. Anyone who thinks they may have been exposed to Giardiasis should contact their health care provider 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.



Giardia Parasite



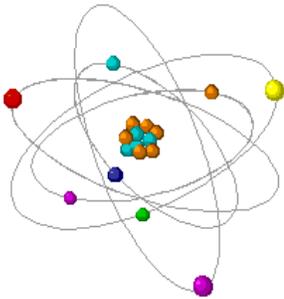
Giardia invading human intestines



Microscopic view of giardia

Facts About Radon

Radon is a naturally occurring radioactive gas that may cause cancer, and may be found in drinking water and indoor air. Some people who are exposed to radon in drinking water may have increased risk of getting cancer over the course of their lifetime, especially lung cancer.

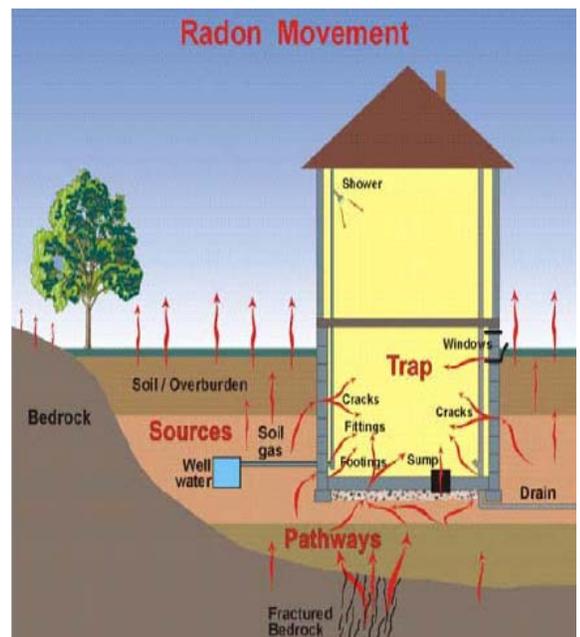


Radon in soil under homes is the biggest source of radon in indoor air, and presents a greater risk of lung cancer than radon in drinking water.

Radon's Physical Properties

Radon, in this text, refers to the specific isotope radon₂₂₂. Radon is a naturally occurring gas formed from the radioactive decay of uranium₂₃₈. Low concentrations of uranium and its other decay products, specifically radium₂₂₆, occur widely in the earth's crust, and thus radon is continually being generated, even in soils in which there is no man-made radioactive contamination. Radon is colorless, odorless, tasteless, chemically inert, and radioactive. A portion of the radon released through radioactive decay moves through air or water-filled pores in the soil to the soil surface and enters the air, while some remains below the surface and dissolves in ground water (water that collects and flows under the ground's surface). Because radon is a gas, when water that contains radon is exposed to the air, the radon will tend to be released into the air. Therefore, radon is usually present in only low amounts in rivers and lakes. If ground water is supplied to a house, radon in the water will tend to be released into the air of the house via various water uses. Thus presence of radon in drinking water supplies leads to exposure via both oral route (ingesting water containing radon) and inhalation route (breathing air containing both radon and radon decay products released from water used in the house such as for cooking and washing).

Radon itself also decays, emitting ionizing radiation in the form of alpha particles, and transforms into decay products, or "progeny" radioisotopes. It has a half-life of about four days and decays into short-lived progeny. Unlike radon, the progeny are not gases, and can easily attach to and be transported by dust and other particles in air. The decay of progeny continues until stable, non-radioactive progeny are formed. At each step in the decay process, radiation is released.



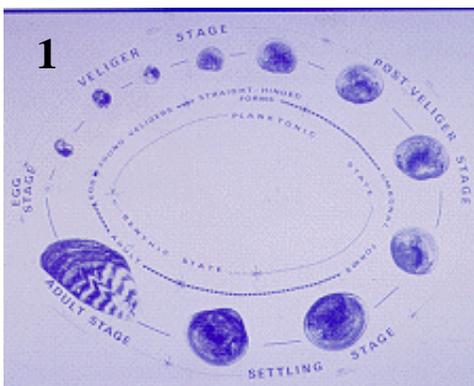
Zebra Mussels

The zebra mussel is a small freshwater shellfish native to the Black & Caspian seas of western Russia. They were introduced into European waters in the 18th Century. By 1986 the mollusks were transported to North America from freshwater European ports, through the discharge of ballast tanks from international shippers.

They are prolific breeders. Each female can produce up to 40,000 eggs each year. Using elastic-like fibers they can attach to any hard surface and quickly colonize large areas, reaching densities of more than 100,000 per square meter. They feed by filtering water containing microorganisms through their gill system.

Once the zebra mussels invaded Lake Erie they spread like wildfire. Their impact on Lake Erie has been profound. Nearly all particulate matter is strained from the lake's water. Uneaten suspended matter is bound with mucous and amassed among the shells in its immense colonies. Because of this filtering activity, the clarity of Lake Erie has greatly improved, allowing light to penetrate much deeper, and with much greater intensity than ever before.

Unfortunately this phenomenon has serious consequences to the lake's ecosystem and water quality. Besides severely affecting the aquatic food chain, this increase in light intensity causes the foul summertime taste and odor problem. The additional light entering the lake causes a steep acceleration in the blue-green algae growing cycle, the main source of taste and odor problems.



(1) Life cycle of the zebra mussel; (2) Zebra mussel close-up; (3) beach wash-up of zebra mussels

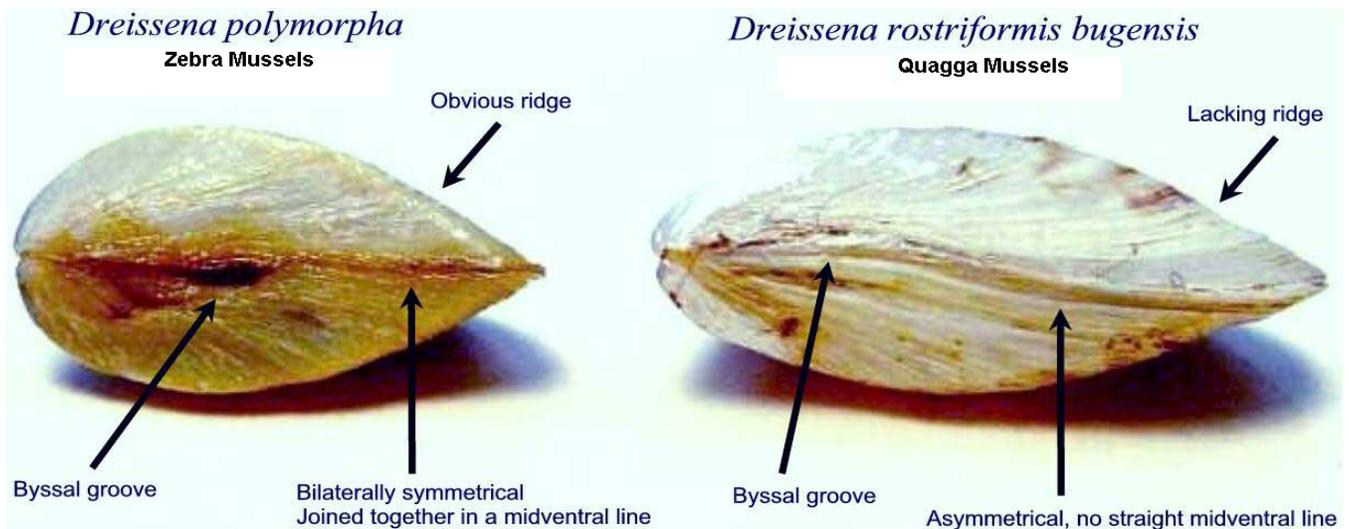
Quagga Mussels



Quagga mussels (*Dreissena bugensis*), a close relative of the zebra mussel, were first discovered in the Great Lakes region in September 1989, when one was spotted near Port Colborne, Lake Erie; however, the recognition of the quagga type as a distinct species did not occur until 1991. Their arrival to the Great Lakes region, like the zebra mussels, appears to be the result of ballast water discharge from transoceanic ships into the Great Lakes.

The quagga mussel shell is striped, as is that of the zebra mussel, but the quagga shell is paler toward the hinge. There is a large range of shell features, including a distinct species in Lake Erie that is pale or completely white. The quagga is slightly larger than the zebra mussel, about 20mm (0.8 in) wide, roughly about the size of an adult human's thumbnail. A fully mature female mussel is capable of producing up to one million eggs per year.

Quagga mussels feed all year, even in winter, when its cousin the zebra mussel, lies dormant. Some researchers believe that Lake Erie's dead zone is likely the partial work of the tiny quagga mussel's non-stop feeding, its ability to live in deep water (it has been found at depths up to 130m in the Great Lakes) and the excretion of phosphorous with its waste.



Metering Program

This program has been mandated by New York State's Department of Environmental Conservation. In general, the water meter project will either replace existing meters or "convert" all flat rate water service to metered accounts using the most automated water meters available. These meters can be read from outside the home and accurately bill you for the amount of water that has been used, in the same way that you are currently billed by other utilities.

FLAT RATE TO METERED BILLING CONVERSIONS IMPORTANT INFORMATION ABOUT YOUR NEW METER



Maintenance: Your new meter should register and run without any problems for fifteen years or more. The City of Buffalo owns and maintains the meter only and will replace any meter that fails due to mechanical problems at no charge to you. There is a charge for repairing meters, cables or remotes that are damaged willfully or through the neglect of the property owner. Meters must be protected from freezing if they are located in an unheated area.

Meter Reading: The remote reading device placed on the outside of your home allows us to accurately read the meter without entering your home. Please do not disturb the remote device or the wire between it and the meter, or place any objects directly in front of the remote device that would make access to this device difficult for the meter reader.

Meter Billing: The City of Buffalo currently reads and bills metered accounts quarterly. Metered customers are billed for the actual amount of water used during the quarterly period; bills are processed and mailed within approximately 30 days following the previous quarter. Plans are currently being reviewed to change to monthly billing for metered customers; you will receive information about this change in the future.

Billing Cycle: Depending upon the timing of your new meter installation, you may receive a flat rate bill for your property before the new-metered account is set up. If you have already received a flat rate bill, or receive one before the metered account is established, please disregard this bill. You will receive a notice from the billing department with information regarding any credits or monies owed on your flat rate account. Because of the time required to set up a new-metered account, it could take anywhere from 30 to 60 days to process this new account. Even though your first metered bill may be delayed, you will still only pay for the amount of water you actually used.

Water Conservation: Conservation is one of the primary goals of the metering program. In order to conserve water, people must know how much water they actually use. To conserve water, and to keep your bills low, fix any leaky fixtures in your house or building. Additional conservation tips have been made available to you to help you better understand this important measure.

If you have any questions regarding your bill, please contact our customer service department at 716-847-1065.

Water Conservation

Water is a vital and limited resource. It is crucial to conserve water. Between the years 1980 and 2000 Americans have more than doubled their water usage. In many areas severe shortages already exist. We must learn to conserve water now, to avoid severe shortages in the future.

By saving water you can also reduce your water, sewer, and utility bills while easing the burden on water storage, purification, distribution, and treatment.

There are four basic ways to save water:

Economize, Repair leaks, Install water- saving devices, and Reuse water.

Water Savings Tips

The following are some water saving suggestions that you may find useful:

- **Dishwashing:** Wash dishes in standing water after you wipe grease off dishes with a paper towel or cloth. Turn off faucet frequently, and you will save over 20 gallons of water a day. Soak pots and pans before washing.
- **Tooth brushing:** Don't let water run while you brush your teeth. Rinse your mouth with water in a glass and you will save over a gallon of water each time you brush.
- **Shower & Bath:** Plug the drain before you run water. Take shallow baths. Keep showers short with pressure at low force. Bathe small children together. Reuse bath water to use on lawns and shrubs, and for heavy cleaning jobs (e.g. floors, cars, etc.).
- **Sink:** Fill bowl with water instead of letting water run when you wash or shave. Try a faucet aerator to reduce the amount of water used.
- **Toilet:** Flush only when necessary. Don't use as a wastebasket for cigarette butts or disposable diapers. Install water saving displacement devices. " *When it's yellow, let it mellow, when it's brown, flush it down*"
- **Laundry:** More than 10% of all water used in the home is used in the washing machine. Use the load selector to match water level to size of load. Try to wash full loads whenever possible. Presoak heavily soiled items. If buying a new washing machine, choose one with conservation features.
- **Cleaning:** Use a pail or basin instead of running water. Use sponge mops instead of string mops (uses less water for mopping and takes less water to keep clean).
- **Lawn & Garden:** Water slowly and thoroughly during cool, shady, and windless times of the day. Let grass grow taller in hot weather. Use judicious amounts of mulch in the garden and around shrubs to conserve moisture. Plant shrubs that don't need a lot of watering.
- **Car Washing:** Wet car quickly, turn hose off, wash car from a bucket of soapy water, and rinse quickly with hose. Used water is fine for cleaning chrome, hubcaps, and wheels.

More Water Savings Tips

Leak Detection

- Check the small red (leak detection) dial, found between the 7 & 8 on the face of the new water meter. If this dial is turning when you think the water is not being used, this indicates a leak somewhere inside the house.
- Check for leaks from faucet. A slow drip can waste 15 to 20 gallons a day, fix it and save 6,000 gallons per year. Most leaks are caused by worn out washers, which often can be repaired by the homeowner.
- Check for leaks from toilet tanks by putting a few drops of food coloring in the tank. Without flushing; wait 10 to 15 minutes; if the color shows up in the bowl, you have a leak. It's possible to lose up to 100 gallons a day from an "invisible leak", that's more than 30,000 gallons per year. Nearly 90% of all residential leaks are caused by leaks from toilet tanks.
- Check for leaks from tub faucets and showers. Replacing old showerheads with low flow models can save 5 to 10 gallons per minute.

• Detect for leaks on service lines by listening for a "hissing" noise at your water meter when no water is being used inside the house. You could have a water line that goes to another building, such as:

- (1) Front house to rear building;
- (2) House to garage.

If you suspect a problem, you should contact your plumber to check this out.

Water Loss In Gallons					
Leak this Size	Loss Per Day	Loss Per Month	Leak this Size	Loss Per Day	Loss Per Month
•	120	3,600	●	6,640	199,520
•	300	10,800	●	6,964	209,520
•	693	20,790	●	8,424	252,720
•	1,200	36,000	●	9,585	296,640
•	1,920	57,600	●	11,324	339,720
•	3,095	92,880	●	12,750	361,600
•	4,295	128,880	●	14,952	448,560

* Note that water loss, due to leaks in a multi-family building, are multiplied by the number of units in the complex.

Consumer Tips

→Appearance

If your cold tap water appears brown or red it is probably mineral deposits (tuberculation) in your water caused by:

- Water main break
- Water or sewer workers flushing fire hydrants
- Vibrations caused by construction
- Children playing with fire hydrants

To report these problems, call the water dept. at 851-4704 or 851-4749. Once the reason has been identified and the disruption of the water main has ceased, run your cold water tap until it clears.

- If your water appears cloudy in winter or early spring it is most likely trapped air. Cold water has a much greater capacity to hold gas than warm water, and if this tendency is combined with a faucet aerator, your water may appear cloudy due to air bubbles. If the water is allowed to sit for a short while, the bubbles will eventually rise to the surface and dissipate.

→Taste & Odor

■After chlorination there remains a minute amount of chlorine in tap water known as residual chlorine. This residual is necessary to kill pathogenic organisms in the water. Many consumers dislike the inherent taste. The following are some ways to eliminate or improve this taste:

- Expose water, in a clear uncapped bottle, to sunlight for one hour, and the smell of chlorine will be removed.
- Cool water to less than 60°F in the summer. Cool water definitely tastes better. If the smell of chlorine is removed before cooling, the taste will be much better.
- Leave water in a kettle overnight. The smell of chlorine will be removed.
- Boil water for 5 minutes in a kettle with the lid off, cool to room temperature, then place in a refrigerator with the lid on, but not air tight, until cool.
- A well-maintained point-of-use charcoal filter will eliminate the smell of chlorine.

■Another common cause of taste & odor in tap water are PVC supply lines. PVC can impart a bitter medicinal taste to water that is allowed to stagnate within a supply line. To eliminate this problem, run the water until the taste & odors has dissipated or change the supply line to a material other than PVC.

■A non-functional drain trap can give the illusion of a sewage smell in tap water. This is due to the introduction of sewer gas from the drain whenever water is flowing through it. Repairing the drain trap will eliminate this problem.

(FAQ) Frequently Asked Questions

Water Quality Questions ...

1. My water appears milky, cloudy or white, when poured in a glass it clears from bottom to top, is it safe to drink?

Yes, your water is safe to drink. The cloudiness is simply air. Air-bound water is most frequently seen when the water temperature is colder than the ambient air. This effect may be enhanced when an aerator is attached to the faucet's tap. The presence of air-bound water is not harmful and no action needs to be taken to correct this phenomenon.

2. Why does my water appear brown or orange, when it is not used for a while?

This is probably due to rust within your internal plumbing at your residence. We suggest you let the water run for a few minutes, until it clears, before use.

3. Why is our whole neighborhood experiencing brown or orange water coming out of the tap?

Call the water department at 851-4704 or 851-4747. We will check to see if work is being done in your neighborhood. Often, when a nearby hydrant is being used, or vibration from construction activity is occurring, the flow of water in the main is upset or interrupted. This may cause minerals deposited on the walls of the main, to detach and become suspended in the water.

We suggest that you, and your neighbors, run the water for a time. The greater the water usage in your area, the faster the minerals deposited in your water will clear. If possible, run the water from the cold-water tap closest to your water meter. This may prevent these minerals from traveling to other faucets farther along your water pipes. Once the water clears, it may be necessary to remove, and clean any aerators that are attached to you faucets.

4. Why is there a black ring inside my toilet bowl?

This has nothing to do with water being delivered to your household. This is mildew caused by room temperature, facility usage and lighting. We suggest a chlorine-based bowl cleaner and more ventilation during showers.

Water Quality Questions continued ...

5. What are the particles that are clogging my aerator, dishwasher hoses, etc.?

Let's do a quick test to see what these particles are. Collect some of these particles and place them in a small cup. Slowly and carefully pour a small amount of household vinegar in this cup. If these particles dissolve in the vinegar, they are probably mineral deposits. It is quite natural to see small amounts of minerals coming from your water pipes.

But

*If the particles do not dissolve in vinegar, they may be plastic coming from the “**dip tube**” in your hot water tank. This broken down “dip tube” material closely resembles mineral deposits, but are much more abundant. When the plastic “dip tube” in a hot water tank begins to disintegrate it may wreak havoc in your plumbing. You will eventually notice a loss of hot water pressure, along with blocked aerators and hoses. The “dip tube” or perhaps the entire hot water tank may need to be replaced.*

6. I have a skin rash, is the water to blame?

You may have dry skin, or any number of different skin ailments (e.g. eczema), that become irritated when in contact with water. Water does not create these ailments, but the ailments may become worse when it comes in contact with water because instead of hydrating the skin, water may draw moisture away from your skin. Talk to your doctor or pharmacist regarding a remedy.

7. Why does my water taste and smell like algae, or grass or dirt?

During the end of summer through fall you may notice a foul taste and odor in your water. This is an after taste do to the presence of algae in Lake Erie. We do remove, filter and disinfect algae in the production of finished water, but often the aftertaste will remain (see Aesthetic Qualities for details). Despite the taste & odor, your water is perfectly safe to consume. We suggest you place a container of water in your refrigerator. The colder the water, the less noticeable the taste.

8. Why did all my fish die, after I put fresh water in my aquarium?

Tap water contains residual chlorine to keep it disinfected. This residual chlorine is deadly to fish. Before adding tap water to a fish tank it is necessary to dechlorinate the water. This can be achieved by adding a dechlorination agent, available at any pet supply store. You can also collect a quantity of water in an open container, and allow the chlorine to dissipate naturally.

Water Quality Questions continued ...

9. Why does my water smell like bleach?

This is a normal smell when using tap water. We add chlorine to water to keep it disinfected. At certain times of the year the chlorine smell is more noticeable. This is especially apparent when the water temperature is warmer than air temperature.

Chlorine, like all gases, will travel from a warm environment to a colder one. This phenomenon is the driving force of lake effect snow as well as chlorine gas in water.

If you find the chlorine smell objectionable, try placing a container of water in your refrigerator overnight. The chlorine will escape and the chlorine odor will be gone. This water should be kept in your refrigerator because it will no longer have chlorine in it to keep it disinfected.

Billing Questions ...

1. Why am I still receiving a water bill even though my water is turned off at the property I own?

You must fill out a disconnect request and pay the turn off fee at our Customer Service office at 281 Exchange Street (or request a disconnect request be mailed or faxed to you). Before the billing can be inactivated the meter must be removed. If you are a flat rate customer, your account will be researched back to the turn off date, and a new bill will be issued, if appropriate.

Note: Water turned off for repairs or nonpayment, are not considered disconnect requests, and will not be treated as such.

2. Why am I being billed for your frozen and ruined water meter?

Per city ordinance, whenever a water meter is placed in a property, it is the owner's responsibility to prevent the water meter from freezing. Examples to prevent water meters from freezing are placing insulation around the meter, or making sure the meter area is heated or away from drafts.

3. I don't think my meter has been read, how do I know if it was?

There will be an "E" next to the reading on your bill if the meter has not been read. The meter reading should only be estimated when the meter reader is unable to obtain a reading due to access problems or touchpad malfunction. Customers should be referred to the Meter Shop to investigate estimated readings.

4. I think my water bill is awfully high, how much water should I be using?

Although everyone is different, the average household should be using approximately four thousand cubic feet (4000 ft³) per person per year, which is about 30,000 gallons per year.

Billing Questions continued ...

5. I received a notice of high consumption and made arrangements with the Meter Shop to check for leaks. They found the leaks and I made the repairs. How can I prevent being surprised again?

Residential meters are read once every 3 months, or quarterly, yet a property owner can monitor their readings as often as they like, to prevent surprises like high water bills. The meter readings should be monitored by the owner at least monthly. In addition, all water meters have a low flow indicator located between the seven and eight on the face of the water meter. This little red triangle will be moving if water is running through the meter, if your not using water when it is moving, you should check all fixtures for leaks.

Tenant/Landlord Questions ...

... Tenant

1. My water just got turned off and I'm a tenant. I cannot reach my landlord, I have small kids; how do I get my water back on? Can I deduct the amount I pay for water restoration from my rent to the landlord?

A. Rest assured, we are available to assist you. In the event of an absentee or vacationing landlord, we will make payment arrangements, usually short-term in nature with you, the tenant. You may be required to make a down payment and pay the turn on fee before service can be restored once we confirm that you are not the actual owner.

For your convenience, we accept MasterCard, Visa, bank draft, money order or cash only. We do not accept personal checks once water service has been disconnected for non-payment. Restoration of the service will take place in 4- 24 hours, in most cases.

B. If you are unemployed, disabled, DSS client, you may qualify for a hardship agreement. Be sure to contact your direct- service agency counselor and find out what information you will need from us in order for them to assist you. Normally, social service agencies require that you provide them with an account printout. There is a \$3.00 charge for the print out that you will have to pay. Once you take the print out to DSS, they will determine the amount of your future award and give you an award statement. You must bring the DSS statement along with the turn on fee to our Exchange Street office in order to have service restored. We take into consideration the amount of the DSS award in developing your payment plan. Once we agree on payment terms, you must return your payment arrangement to DSS in order to finalize your award with them so that they will actually make a payment to us on your behalf. You must complete all follow up requirements for payment from DSS.

Tenant/Landlord Questions continued ...

2. Can I deduct the amount I pay for water restoration from my rent to the landlord?

Because we are not attorneys, it would be inappropriate of us to give legal advice; we can only suggest that you consult an attorney in such matters.

The office of the New York State Attorney General Office Andrew M. Cuomo has produced an excellent reference entitled, "Tenant's Rights Guide" that you can access on line at <http://www.oag.state.ny.us/realestate/habitability.html#30>. The website addresses the landlord's responsibility to provide vital services to tenants.

3. Is there an agency I can contact that will make my landlord pay the water bill?

Yes, you may contact the Erie County Environmental Health Inspector at 716-961-6800. You will be required to provide them with your name, address and the name and address of the landlord. Because a NO WATER call is considered an emergency and is also considered to be unsanitary, Erie County will attempt to contact your landlord by telephone and by mail after confirming the account information with AWS-COB-Division of Water. Erie County will give your landlord five days to have the water service restored. If the landlord fails to have the service restored in the time frame allotted, Erie County Environmental Health will petition the landlord to City of Buffalo Housing court. NOTE: You may have to move to temporary quarters for a time. Erie County will not provide legal advice. If you chose to pay the water bill and offset your rent to the landlord, we recommend that you consult an attorney in this matter.

4. I would like to make arrangements to pay the past due bill, but I want a tenant's agreement with the Division of Water. Can I sign a tenant's agreement?

Yes, with the assistance of Neighborhood legal services, we have developed, and adopted the kind of agreement you mention. The City of Buffalo's legal department and the Commissioner of Public Works, Streets and Sanitation have sanctioned the use of such an agreement.

5. I am a senior citizen and I am disabled, my water is turned off for non-payment but my landlord will not call me back. If I come in and make arrangements to pay the balance, will you give me a Senior Citizens & Disability discount?

Unfortunately, we cannot offer the Senior Citizens discount to tenants. Senior Citizen's discounts are available only to homeowners at their primary residences. Income properties do not qualify for the discount. There is no disability discount at this time.

6. I am a renter and I just received a final notice, is there a water energy assistance program (WEAP) similar to heating energy assistance program (HEAP) that can assist me?

No such funds have been identified in the Buffalo, New York area at this time.

Tenant/Landlord Questions continued ...

... Property Owners

1. I was just at a Tops Market paying other utility bills and saw a sign that says Erie County Water customers can pay their bills via Western Union payment services right there inside of the market. Why can't City of Buffalo water customers pay their bills at Tops?

Effective Wednesday, August 1, 2007 you may now pay your City of Buffalo Water bills at participating Western Union Agent locations in Tops markets and other retail stores. A complete listing of participating stores can be found on line at:

<http://www.buffalowaterauthority.com/payment.htm>

When paying at participating Western Union locations, please be sure to have your City of Buffalo Division of Water bill with you. Please note that Western Union payments have a processing time of 1-3 business days.

If your water service has been interrupted, you will need to present your receipt to the Exchange Street billing office and pay for a "turn on" fee before service is restored.

2. Why is my bill estimated when there is a black box attached to my house that allows your staff to read my meter any time you want to?

There could be several reasons why we cannot read your meter using the box located on the outside of your house. (1) There may be a break in the touch pad wire located on the outside of your house that is not allowing the black box to communicate with the meter located on the inside your house. (2) The actual meter located inside of your house may be defective. (3) The water department staff may not be able to get close enough to the box attached to your house if it is blocked by; trash, cars, dogs, bushes, locked gates, etc., in which case you should have received a door hanger advising you of this problem. In any of the aforementioned cases, your next bill will be estimated. You should contact the meter shop at 851-4741 to arrange for repairs.

Tenant/Landlord Questions continued ...

3. I am a senior citizen and have qualified for the STAR program, but when I got my water bill there was no discount. Why?

The Basic and Enhanced STAR school property tax exemptions program affects the amount you pay on Property Taxes not water bills. The Exemptions are homestead exemptions. Basic STAR is available to anyone who owns and lives in his or her own home. Enhanced STAR is available to homeowners whose incomes do not exceed the statewide standard. Qualifying for the Basic or Enhanced STAR program does not affect your water bill. For additional information on Basic and Enhanced Star school property tax programs, go on line to <http://www.orps.state.ny.us/star/index.cfm> and http://www.orps.state.ny.us/star/star_forms.cfm.

There is a special program within the City of Buffalo for seniors ages 65 and over that is administered by the City of Buffalo Tax Department, Room 105 City Hall. To obtain an application and to find out if you qualify call 716-851-5747. Applications for the Water Discount Program must be submitted not later than December 1st each year and will take effect in July of the following year. The 40% discount affects only the water portion of your bill.

4. Why am I still receiving a bill, my property is vacant? According to my meter, I haven't used any water.

Charges will continue until you have (1) paid your balance in full, (2) completed & returned the turn off application so that your account can be inactivated, (3) water is turned off at the curb by Division of Water staff (4) associated fees are paid, and (5) your meter is returned.

Note: If the water service valve or box is reported as defective, you will receive a violation letter advising you to engage a licensed plumber to repair or replace the service box or valve. This work must be completed before the service can be inactivated. By Water Board Regulations copied below, the property owner is responsible for the repair and maintenance of the service line and valve.

10085.7-Water Service Connections

(l) Maintenance of service pipes.

All user service connections, lateral or service pipes for public or private use and all necessary fixtures connected therewith shall be subject to the approval of the commissioner. Such pipe and connection are to be laid and kept in good repair and protected from frost by or at the expense of the applicant, who shall likewise pay for the fee for tapping of the main pipe. Such payment to be made by the person making the application for a supply of water at the time such application is made.

5. Why are homeowners held responsible for water bills when the tenants actually use or waste the water?

According to Water Regulations; 10085.12 & 10085.13, all water charges for the property are the responsibility of the property owner and there can be no abatement for leakage. Delinquent City of Buffalo Water bills, according to water regulations, become liens on the property and left unpaid may result in the loss of the property at the City's annual tax sale.

Tenant/Landlord Questions continued ...

6. As a property owner, I feel like I'm being robbed. Why do I have to pay two sewer bills?

You don't actually pay two sewer bills. On your tax bill there is a charge for sewer rent, which underwrites the maintenance and repair of the sewer system infrastructure. This amount is payable twice a year with your property tax bill. The sewer charges you pay on your combination water and sewer bill are for transporting waste from your toilet directly into the sewer system and are payable, in most cases, quarterly.

7. I just purchased this property and now I find out that the old owner never paid their bill and I owe \$500. Why do I have to pay the old owner's bill, I never used one drop of water?

All current and delinquent water bills are to be paid either prior to the closing or at the actual real estate closing. You may wish to check with your attorney to determine if he/she requested a final bill be sent to the previous owner. In any event, your attorney will have to investigate the matter for you. According to Water Board Regulations; 10085.12 (b), the property owner is liable for all current and past due charges for the property.

8. How can you turn my water off without first notifying me?

We must notify you according to water regulations. The following notifications occur:

(1) *All residential customers are sent a quarterly billing that indicates the current amount billed and arrears amount owed along with other charges. The disclosure regarding past due amounts (arrears) is located on the reverse side of your bill, bullet point #3 which says " Arrears CHARGES ARE PAYABLE IMMEDIATELY IN ORDER TO AVOID INTERRUPTION OF SERVICE"*

(2) *You are sent a reminder notice*

(3) *If you fail to pay the amounts billed, your property is physically tagged with a door hanger that is a bright florescent color which indicates the last day in which you have to make payment or payment arrangements that will cancel the scheduled interruption of service to your property. You may make mutually satisfactory payment arrangements over the phone with our Exchange Street billing office and pay by master or visa card or you may visit our Exchange Street location and pay your bill or a portion of it and make payment arrangements to ensure that your water service is not interrupted.*

Arrangements to avoid shut off may only be made through the billing office at 281 Exchange Street.

Water Service Questions ...

1. Why am I responsible for the leak in the street on my water line?

By Water Board Regulations in the City of Buffalo, the water service line from the main in the street up to and including the piping leading to the house is owned by the property owner. This is considered to be a private line from the city's water main to the house. It is the homeowner's responsibility to maintain the water line and keep it in good repair.

2. Who is responsible for water service box repairs?

The homeowner is responsible for the water service box and shut off valve. The service box and valve must be maintained and kept in good condition and the water service valve must be accessible for operation by the water department personnel. The water department will install new covers and replace broken bolts when the work does not require the excavation of cement or blacktop. The charge for this service is for the cost of material only and will be billed to the water account for the property. (See rate chart for costs)

3. Why do you have the fire hydrants running on my street?

During the summer months water personnel perform routine maintenance on the fire hydrants. The hydrants are operated to make sure that they are working properly. The water department also flushes sections of the water mains to remove the build up of sediment in the pipe to improve the flow for better fire protection and to improve water quality and pressures. While the hydrants are being flushed you may temporarily experience low water pressure and discolored water from the sediment that was in the pipe. If this happens run your cold-water faucet in the basement laundry tub or faucet closest to the incoming service for 15-20 minutes and this should clear up this problem. If this does not take care of the problem, you can call our 24-hour emergency number at 851-4747 for assistance.

4. How can I get my water shut off to my house so I can make repairs to my valves or pipes inside?

In your house, there should be a water shut off valve that turns off the water to the whole house. This valve is located in the water pipe that comes up from the floor or through the wall in the front part of the basement closest to the street. If you do not have a basement and have a crawl space instead, the shut off valve is usually near the front part of the house or where the water line comes up from the ground. Most houses have an access panel outside, or a trap door in the floor to access this valve. If the water shut off valve does not hold or the valve is broken and needs to be replaced to make the necessary repairs, you can call our dispatch office at 851-4747 to schedule a time for a service turn off crew to meet you on location and turn off your water at the service box near the street. There will be a nominal charge to cover the cost of our service crews to operate this valve.

(See rate chart for costs)

Water Service Questions continued ...

5. Should I have the water turned off to my house if it is going to be vacant?

If the house will be vacant for an extended period of time, or vacant during the winter months without heat, it is a good idea to have the water shut off at the curb valve to prevent freezing or potential flooding. If the property owner is unable to be on location when the water is shut off or if the service crew is unable to verify that the water is off completely, the property owner should make sure that the water is off completely in the house. The water pipes should be drained throughout the house to prevent frozen and burst pipes that will cause flooding or water damage.

6. How do I get my water shut off and my account inactivated if the house is going to be vacant?

Property owners wishing not to incur water and sewer minimum charges on a vacant property that has a meter should contact the customer service office and request that their meter be removed and the service turned off. The property owner will be required to complete a Notice of Request to Discontinue Water Service, provide proof of identity by way of a valid state ID or valid state driver's license and pay the applicable fee. The process of termination of service and account inactivation cannot be completed until (1) the meter located at the property has been removed from the property, (2) the outside shut-off valve has been turned off, (3) the fee for termination paid in full and (4) all outstanding balances are paid in full. Property owners will continue to receive billings until all requirements are met. You may initiate this process in person or via fax to our Exchange Street location only.

7. Why wasn't I notified that the water on the street was being shut off?

When the water is shut off for scheduled repair work to the water mains, valves or hydrants, written notices are delivered in advance of the shut down to all the houses that will be affected or you may be notified through the media. Unfortunately there are times when a broken water main forces us to perform an emergency shut down without prior notice. In the event of a water main break, the main must be shut down quickly to minimize the flooding of property, or further damage to the area. Whenever possible, the repair crew on sight will walk house to house to notify affected customers about the service interruption and information about the repairs. Most routine repair work can be completed and service restored within 3-4 hours, although some more involved repairs can take longer to complete.

8. Who is responsible for the water service failing and causing a leak when being shut off by the city water department?

By Water Board Regulations in the City of Buffalo, the water service line from the main in the street up to and including the piping leading to the house is owned by the property owner. This is considered to be a private line from the city's water main to the house. It is the homeowner's responsibility to maintain the water line and keep it in good repair. The service box and valve must also be maintained and kept in good condition and the water service valve must be accessible for operation by the water department personnel. The majority of service line failures occur on older galvanized lines that are buried and have deteriorated due to age. Due to the deteriorated condition of these older lines the service valve may not be able to handle the normal operation of the shut off valve and may start to leak. If a leak occurs following the operation of the shut off valve, the homeowner must engage a licensed plumber to repair the defective valve.

Water Service Questions continued ...

9. I hear a loud sound on my water pipes, what is it?

If you hear the sound of water running and no one is using water in the house, it could mean that you have a leak on the buried service line leading to your home. Start by checking that there are no toilets leaking.

You can check this by putting a few drops of food coloring in the tank to see if the dye shows up in the bowl. If you have a water meter you can also check the small red indicator on the dial to see if any water is going through the meter.

If you still believe that you have no internal leaks, you can call our 24-hour emergency number and a service crew will come to your property to “sound” your water service to help you to determine where the leak may be. There may be a leak on the city water main that is not showing above ground, and getting away in the sewer that could be the cause of the load sound. The service crew will be able to make that determination.

2009 System Improvements

To insure continuing quality and safety in our communities' water supply, the Buffalo Water Authority has made the following improvements to our treatment facility in 2009:

- South Basin Sluice Gates Operators (West side) rehabilitated.
- Continuing metering program. Metering encourages water conservation and curtails unaccounted water.
- Continuing leak detection: To reduce non-revenue water usage and optimize water treatment and pumpage.
- Security cameras at all critical system's controls installed at the Filter Plant.
- Continuing SCADA (system monitoring and control) upgrade at the Col. Ward Pump Station, which allows for monitoring and remote control of all water tanks and remote pump stations.
- Replaced high service pumps at Massachusetts Pumping Station. Increasing pumping efficiency.
- Filter media rehabilitation – More effective filter media will increase water quality and lower its cost.
- Pump & Motor rehabilitation – Distribution system: Better water pressure control will reduce water main breaks.
- Rehabilitation of chlorine system. Improving safety and disinfection control.

Future of Buffalo's Water System

The Buffalo Water Board plans the following improvements to our treatment & distribution systems in 2010

- Continue the Metering Program & Leak Detection
- Refurbished low lift pumps and switch gears.
- Grover Towers painting and repairs.
- South Basin baffles rehabilitation. Increasing coagulation efficiency, improving water quality.
- Continue filter rehabilitation including sweep repair: More effective filter media and controls will increase water quality and lower its cost.
- Homeland Security: Security upgrades including doors, windows, fencing, and surveillance cameras.
- Expanded reporting ability for turbidity monitoring system: allowing enhanced historical data logging.
- Ongoing installation of "Radio Read Meters" for commercial & industrial customers; improves efficiency of meter reading & billing.
- Increase in capital program to replace ageing water mains: improving water quality and flows.
- SCADA upgrade at the Filter Plant: Optimizing control over water treatment systems
- Back-up generators for our high lift service pumps to ensure continued water service during an electrical outage.
- Dechlorination station for backwash discharge to canal. This will result in a significant reduction in organic contamination entering our distribution system.
- ICP (Inductively coupled plasma atomic emission spectroscopy). Allowing the monitoring of metals (e.g.: aluminum, lead, etc.) in our distribution system and waste water discharge.
- Upgrade of our chlorine feed system, allowing greater control of our disinfection treatment and a higher degree of safety.

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 & copper, volatile organics compounds, total trihalomethanes, and synthetic organic compounds.

The following table depicts which compounds were detected in your drinking water. The State allows us to test for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of our data, though representative, are more than one year old. It should be noted that drinking water, including bottled water, might reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline (800-426-4791).

Although our drinking water met or exceeded state and federal regulations, 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).

2009 Table of Detected Contaminates: Inorganics								
Contaminant	Any MCL of TT violation?	Sample Date (or highest detected)	Max Level Detected	Unit	MCLG	MCL	Range	Likely Source of Contamination
FLUORIDE	No	10/3/08	1.35	ppm	N/A	2.2	0 - 1.35	Erosion of natural deposit; water additive that promotes strong teeth; Discharge from fertilizer and aluminum factories
NITRATE-N	No	8/6/09	0.22	ppm	10	10	N/A	Runoff from fertilizer use; Leaching from septic tanks, sewage, Erosion of natural deposits.
**SODIUM	No	5/23/07	11	ppm	N/A	**		Naturally-occurring, Road salt, Water softeners; Animal waste
SULFATE	No	5/23/07	23		N/A	250		Naturally-occurring mineral
ZINC	No	4/20/04	0.032		N/A	N/A		

** Water containing more than 20 mg/l of sodium should not be used for drinking by anyone on severely restricted sodium diets. Water containing more than 270 mg/l of sodium should not be used for drinking by people on moderately restricted sodium diets.

2009 Table of Detected Contaminates: Lead & Copper - Distribution

Contaminant	Any MCL of TT violation?	Sample Date (or highest detected)	Max Level Detected	Unit	MCLG	MCL	Range	Likely Source of Contamination
COPPER ⁽¹⁾	No: 90%=.074ppm	9/9/08	0.28	ppm	1.3	1.3	ND - 0.28	Corrosion of household plumbing; erosion of natural deposits; leaching from wood preservatives.
LEAD ⁽¹⁾	No: 90% = 6 ppb	7/3/08	7.6	ppb	0	15	ND – 7.6	Corrosion of household plumbing; erosion of natural deposits.

(1) Out of 58 homes tested, in 2008 none was above the AL of 15 ppb for Lead. The TT employed by the Buffalo Water Authority, intended to reduce lead contamination of drinking water is the addition of a poly/ortho-phosphate blend as a part of water treatment. This chemical serves to coat water lines, to prevent lead from leaching into the drinking water. Infants & children who drink water containing lead in excess of the AL could experience delays in their physical or mental development.

Children could show slight deficits in attention span and learning disabilities. Adults who drink this water over many years could develop kidney problems or high blood pressure. Infants & young children are more vulnerable to lead in drinking water than the general population.

Lead levels in your home might be higher than at other homes in the community as a result of materials used in your home's plumbing. If you are concerned about elevated lead levels in your home's water, you may wish to have your water tested, and you should flush your tap for 30 seconds – 2 minutes before using your tap water.

Additional information is available from the Safe Drinking Water Hotline (1-800-426-4791).

2009 Table of Detected Contaminates: Microbiological									
	Contaminant	Any MCL or TT violation?	Sample Date (or highest detected)	Max Level Detected	Unit	MCLG	AL	Range	Likely Source of Contamination
distribution	Heterotrophic Bacteria	No	12/15/09	150	count / ml	N/A	N/A	0 - 150	Naturally occurring
	Turbidity ⁽²⁾	No	6/9/09	1.98	NTU		TT >5.0 NTU	.06 - 1.98	soil runoff
Entry Point		No	1/1/09	0.65			TT: 95% samples not ≤0.5NTU	0.03 - 0.33	
	Heterotrophic Bacteria	No	4/20/09	5	count / ml		N/A	0 - 5	Naturally occurring

(2) Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system.

Our highest single distribution measurement for 2009 occurred on 6/9/09 (1.98 NTU). State regulations require that distribution turbidity must always be below 5.0 NTU.

The regulations also require that 95% of the effluent turbidity samples collected have measurements below 0.5 NTU. Although January was the month that had the highest effluent measurements, 100% of all measurements that month met TT for turbidity (0.5 ntu), and were in the acceptable range allowed and did not constitute a violation.

2009 Table of Detected Contaminates: Disinfection By-products formed by chlorination of tap water, and their precursors

	Contaminant	Any MCL or TT violation?	Sample Date (or highest detected)	Max Level Detected	Unit	MCLG	AL	Range	Likely Source of Contamination
Entry Point	TOC	No	6/23/09	3.4	ppm	N/A	TT = TOC & SUVA >2.0	1.67 - 3.4	Precursors to by-products of drinking water chlorination
	SUVA	No	1/12/09	1.23	L/mg-m			0.04 - 1.23	
	Total Chlorine	No	4/14/09	2	ppm		(MRDLG)	(MRDL)	
Free Chlorine	No	4/14/09	1.56	4.0		4.0	0.74 - 1.56		
Distribution		No	10/27/09	1.27				0.1 - 1.27	
	TTHM ⁽³⁾	No: RAA= 37.78 ppb	8/6/09	66.1	ppb	N/A	TT=80ppb	17.3 - 66.1	By-product of drinking water chlorination needed to kill harmful microorganisms. TTHM's are formed when source water contains large amounts of organic matter.
	HAA	No RAA= 16.0 ppb	8/6/09	22.1				TT=60ppb	8.8 - 22.1

- (3) Representative testing for TTHM included samples collected through 2009. Our highest detected reading occurred in August. (66.1 ppb), which was below the MCL of 80 ppb. Some people who drink water, containing TTHM in excess of the MCL over many years experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer.

The EPA's Safe Drinking Water Hotline is: (800-426-4791).

Other Properties of Tap Water 2009 - Entry Point								
Contaminant	Any MCL or TT violation?	Sample Date (or highest detected)	Max Level Detected	Unit	MCLG	AL	Range	Likely Source of Contamination
Total Solids	No	10/30/09	175	ppm	N/A	N/A	153 - 175	Naturally occurring minerals
Total Dissolved Solids	No	3/20/09	172				160 - 172	
Alkalinity (as CaCO3)	No	3/13/09	96.53				78.7 - 96.5	
Calcium Hardness (as CaCO3)	No	2/20/09	126				89 - 126	
pH	No	8/19/09	8.2	SU			7.4 - 8.2	Naturally occurring

Other Properties of Tap Water 2009 - Distribution								
Contaminant	Any MCL or TT violation?	Sample Date (or highest detected)	Max Level Detected	Unit	MCLG	AL	Range	Likely Source of Contamination
pH	No	12/4/09	8.2	SU	N/A	N/A	7.5 - 8.2	Naturally occurring

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.

2009 Raw Water Data

The following table shows the analyzed parameters of raw, untreated water originating in Lake Erie.

Parameters	Units	Avg.	Range	Max date	# of tests
Alkalinity as CaCO₃	PPM	92.10	83 - 99	7/13/2009	23
Calcium Hardness as CaCO₃		99.72	86.5 - 115	5/8/2009	23
Total Dissolved Solids		164.20	160 - 166	3/20/2009	5
Total Solids		155.40	112 - 210	9/25/2009	5
pH	SU	8.06	7.7 – 8.5	4/20/2009	1460
Turbidity	NTU	4.69	0.15 - 100	9/29/09	2555
Standard Plate Count	Colonies/1 ml	11.62	0 - 90	4/6/2009	112
Total Coliform	Colonies/100 ml	13.29	0 - 146	1/27/09	260
E.coli		5.23	0 - 18	1/12/09	260

Undetected Contaminants

According to State regulations, the Buffalo Water Authority routinely monitors your drinking water for various contaminants. Your water is tested for inorganic contaminants, nitrate, lead and copper, volatile organic contaminants, synthetic organic contaminants and total trihalomethanes. Additionally, your water is tested for coliform bacteria a minimum of 150 times a month. The contaminants detected in your drinking water are included in the Table of Detected Contaminants.

Below is a list of contaminants that were tested for in 2009, but were not detected in our drinking water:

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-Dibromo-3-chloropropane, 1,2-Dibromoethane, 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-Chlorotoluene, 4-Chlorotoluene, 4-Isopropyltoluene, Antimony, Arsenic, Barium, Benzene, Beryllium, Bromobenzene, Bromochloromethane, Bromodichloromethane, Bromoform, Bromomethane, Cadmium, Carbon tetrachloride, Chlorobenzene, Chloroethane, Chloromethane, Chromium, cis-1,2-Dichloroethene, cis-1,3-Dichloropropene, Cyanide, Dibromomethane, Dichlorodifluoromethane, Ethylbenzene, Hexachlorobutadiene, Isopropylbenzene, Lead, m,p-Xylene, Mercury, Methyl tert-butyl ether, Methylene chloride, Naphthalene, n-Butylbenzene, Nickel, n-Propylbenzene, o-Xylene, sec-Butylbenzene, Selenium, Styrene, tert-Butylbenzene, Tetrachloroethene, Thallium, Toluene, trans-1,2-Dichloroethene, trans-1,3-Dichloropropene, Trichloroethene, Trichlorofluoromethane, Vinyl chloride.

Is our water system meeting other rules that govern operations?

During 2009, our system was in compliance with all applicable state drinking water operating, monitoring and reporting requirements.

Closing

Thank you for allowing us to continue to provide your family with quality drinking water this year. We ask that all our customers help us protect our water sources, which are the heart of our community. Please call our treatment plant laboratory @ 716-851-4704 if you have questions about water quality.