CITY OF ST. CLAIR SHORES

WATER QUALITY REPORT 2016

TIPS TO REDUCE YOUR WATER BILL

You can manage your water bill by monitoring your own water consumption and water loss. Here's a few ways to save both water and money:

STOP THOSE LEAKS!

Check your indoor water using appliances and faucets ... especially the toilet. Place food coloring or the colored tablets available at the Water Department in CIty Hall or DPW for your toilet tank. Don't flush for 5 to 10 minutes. If you see colored water in the bowl you have a leak.

REPLACE YOUR OLD TOILET

Believe or not, your toilet is the largest water user inside your home. If your home was built before 1992 and the toilet has never been replaced, then it is very likely that you do not have a water efficient 1.6 gallon per flush toilet. It's time to replace it.

REPLACE YOUR CLOTHES WASHER

Your clothes washer is the second largest water user in your home. EnergyStar™ rated washers that have a Water Factor at or lower than 9.5 use 35 to 50 per cent less energy per load.

PLANT THE RIGHT PLANTS & WATER ONLY WHEN NEEDED

Most water is wasted in your garden by watering when your plants or grass does not need it or by not maintaining your irrigation system. Select plants that are appropriate for local climate conditions.

Saving water is smart for you, your pocketbook and the City. Working in partnership, we CAN reduce our water consumption and water loss.

AN OPEN LETTER TO THE RESIDENTS & BUSINESS OWNERS OF ST. CLAIR SHORES

The City of St. Clair Shores is pleased to present the ***Water Quality Report 2016*** to you, our water and sewer customers. This report provides a snapshot of important information about your drinking water. ***The good news: the City of St. Clair Shores has the cleanest, most affordable water in the country.*** We not only provide you with safe tap water, but are also proud to say that the water we supply meets or surpasses all Federal and State standards for water quality and safety.

WHAT IS THE GLWA?

January 1, 2016 marked the launch of a regional water authority in Southeast Michigan. The City of Detroit, the counties of Macomb, Oakland, and Wayne, and the State of Michigan have officially united to form the Great Lakes Water Authority (GLWA). The new GLWA gives suburban water and sewer customers a powerful voice in the management and direction of one of largest water and wastewater utilities in the nation. The GLWA is comprised of six board members: two from the City of Detroit, and one each from Macomb, Oakland and Wayne counties, plus one representing the State of Michigan. GLWA begins management and control of regional water and wastewater services, while Detroit, like suburban communities throughout the region, will retain control of water and sewer services within the City limits. More information on the GLWA can be found at www.glwater.org.

WHAT DETERMINES MY BILL?

The City of St. Clair Shores bills water by unit **-one unit equals 100 cubic feet or 748 gallons.** As you know, we buy all of our water from the GLWA. Every penny that you pay on your water/sewer bill is used to buy water from the GLWA and maintain our seventy-plus-year old water system. Like the roof on your home or your car, our water system needs constant maintenance.

WHAT IS THE CITY DOING TO REDUCE MY WATER BILL?

Reducing your water bill really comes down to water consumption and water loss.

WATER CONSUMPTION:

As you know, our Water Services Contract with the GLWA includes two ordinances designed to help the City regulate its peak hour water consumption to assure the lowest possible rates from the GLWA. The first ordinance restricts water consumption during a water supply emergency. The second ordinance restricts irrigation to odd/even numbered days. When followed, these actions result in a large savings to the City because it keeps our water rates from the GLWA and a large savings to the customer because it keeps your water bills down.

WATER LOSS:

The water that we purchase from the GLWA also goes through a metering system similar to what you have in your home or businesses. Water loss is the result of the amount of water we buy from the GLWA minus the amount of water we sell to our residents and businesses. Our Water Department continually and successfully works toward reducing water loss numbers. In the last few years, our water loss has decreased from over 20% to less than 10%. Leak detection remains one of our top priorities. In fact, a Water Department employee "listens" to the water system with electronic listening devices to monitor the system and find leaks during the low consumption period. We are constantly maintaining valves and hydrants, replacing seals, nuts and bolts. We recently replaced old, worn-out, stopped or slow-reading water meters with new state-of-the-art meters that are not only more accurate, but electronically alerts the Water Department of a leak.

4 Million Gallon Water Storage Reservoir

The Water Department operates a four million gallon drinking water storage reservoir. The daily monitoring, calibration and operation of the reservoir allows the City to purchase and store water from the GLWA during low demand hours at a lower cost. This water is then distributed to our water customers during high demand hours. This operation has lowered our peak hourly demand from the GLWA resulting in an annual savings of $300,000 to $500,000. The tank operation also regulates the water pressure throughout our distribution system. Decreased pressure variations have helped to reduce the number of water main breaks.

19600 PLEASANT AVE. • ST. CLAIR SHORES • MICHIGAN • 586.445.5374

SOURCE WATER & CONTAMINANTS

LEAD: Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.

COPPER: Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's disease should consult their personal doctor.

ABOUT OUR SYSTEM.....

The St. Clair Shores Water Department maintains and provides 24 hour service for...

- 220 miles of water main
- 1, 708 fire hydrants and hydrant valves
- 1,625 main gate valves

Our residents, businesses and public facilities consume approximately three billion gallons of water a year.

The mission of the Water Department is to provide clean, healthy, uninterrupted water service while maintaining adequate pressures and volumes for Emergency use.

St. Clair Shores drinking water comes from the world's largest fresh water supply - the Great Lakes. St. Clair Shores receives water from two facilities maintained by the GLWA the Northeast and Lake Huron treatment plants. The surface water treatment plants filter and treat water before it's released into the GLWA water system transmission lines and delivered to our distribution system and finally to you, our valued customer.

A very important fact we must realize is that the quality of our drinking water is directly affected by our own property water runoff and the release of improperly disposed of materials into the stormwater system. Keeping grass clippings from the streets and catch basins and using environmentally safe lawn and garden fertilizer products helps sediment and algae problems.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. **More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's (EPA's) Safe Drinking Water Hotline at 800.426.4791.**

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material, and can pick up substances from the presence of animals or from human activity.

Contaminants that may be present in source water include:

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

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

Some people may be more vulnerable to contaminants in drinking water than is 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 about drinking water from their health care providers.

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. St. Clair Shores is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested.

Information on lead in drinking water, testing methods and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline at 800.426.4791 or at the EPA's website at http://www.epa.gov/safewater.

DETROIT RIVER INTAKES

Your source water for the Northeast Treatment Plant comes from the Detroit River, situated within Lake St. Clair, Clinton River, Detroit River, Rouge River, Ecorse River, in the U.S. and parts of the Thames River, Little River, Turkey Creek and Sydenham watersheds in Canada. The Michigan Department of Environmental Quality in partnership with the U.S. Geological Survey, the GLWA and the Michigan Public Health Institute performed a source water assessment in 2004 to determine the susceptibility of potential contamination. The susceptibility rating is on a seven-tiered scale from "very low" to "very high" based primarily on geologic sensitivity, water chemistry, and contamination sources. Their susceptibility of our Detroit River source water intakes were determined to be highly susceptible to potential contamination. However, all four Detroit water treatment plants that use source water from the Detroit River have historically provided satisfactory treatment of this source water to meet drinking water standards.

LAKE HURON INTAKE

Your source water from the Lake Huron Water Treatment Plant comes from the lower Lake Huron watershed. The watershed includes numerous short, seasonal streams that drain to Lake Huron. The Michigan Department of Environmental Quality in partnership with the U.S. Geological Survey, the GLWA and the Michigan Public Health Institute performed a source water assessment in 2004 to determine the susceptibility of potential contamination. The susceptibility rating is seven-tiered scale ranging from "very low" to "very high" based primarily on geologic sensitivity, water chemistry, and contaminant sources. The Lake Huron source water intake is categorized as having a moderately low susceptibility to potential contaminant sources. The Lake Huron Water Treatment Plant has historically provided satisfactory treatment of this source water to meet drinking water standards.

PROTECTION FOR BOTH INTAKES

GLWA has initiated source-water protection activities that include chemical containment, spill response, and a mercury reduction program. GLWA participates in a National Pollutant Discharge Elimination System permit discharge program and has an emergency response management plan. In 2015, GLWA received a grant from The Michigan Department of Environmental Quality to develop a source water protection program for the Detroit River intakes. The programs includes seven elements that include the following: roles and duties of government units and water supply agencies, delineation of a source water protection area, identification of potential of source water protection area, management approaches for protection, contingency plans, siting of new sources and public participation. If you would like to know more information about the Source Water Assessment report or to request a complete copy of this report please, contact the City of St. Clair Shores Water Department at 586.445.5374.

FREQUENTLY ASKED QUESTIONS

SLC Meter Service installed a new meter at my business. Is SLC Meter Service an authorized company in the City?

Yes, SLC Meter service is an authorized company contracted by the City. They are currently servicing and testing meters throughout the City.

Why has the stop box (water shut off) on my lawn risen up out of the ground?

The stop boxes are made to telescope up and down with the frost in the ground to protect the line from breaking during a frost. If you are concerned, the stop box can be lowered by one of our Water Service employees. Call the Water Maintenance Department at 586.445.5374 to make an appointment.

The valves by our meter are not working or are leaking. Who is responsible tor the repair?

The valves - located before and after the meter - are part of the homeowner's plumbing system and are the homeowner's responsibility to maintain. These valves should be exercised regularly to ensure that they are working properly in the event of a broken pipe or line, inside your home requiring immediate water shut down. If you believe you have a leak on the meter itself. Contact the Water Maintenance Department at 586.445.5374.

I am concerned about hydrants running during a water main break repair or during the hydrant flushing program. Why does this happen?

The City continues to operate hydrants during a water main break repair or a flushing to remove the sediment or mineral deposits from the main. This ensures the best water quality possible to residents.

The manager at my business received a letter regarding cross connection or backflow prevention. Where can I get more information?

All questions and concerns should be addressed directly to H2O Compliance Services, Inc. at 866.328.7727.

HOUSEHOLD HAZARDOUS WASTE GUIDE...

Cleaning products like aerosols, bathroom and drain cleaners and car supplies like starting fluids and repair products are all considered household hazardous waste. Many ingredients in these products are corrosive or reactive. If the are not disposed of properly, they can harm people, wildlife and the environment. Chemicals in them can actually contaminate our rivers, lakes and drinking water.

TIPS FOR HANDLING TOXICS...

- **Store household hazardous wastes in their original containers and make sure the labels are readable.**
- **Save money and reduce waste by purchasing only what you need and use.**
- **Let solvents and paint thinners set in a closed jar to let dirt and paint settle to the bottom. You can reuse the top portion and dispose of less waste!**

HAZARDOUS WASTE ACCEPTED BY MACOMB COUNTY HEALTH DEPT:

Automotive Products...

- Used motor oil and filters
- Battery acid
- Gasoline
- Brake fluid
- Transmission fluid
- Cleaners, wax, polish
- Antifreeze

Lawn/Garden Products...

- Pesticides
- Fertilizers
- Weed killers
- Poisons

Household Products...

- Oven cleaner
- Drain cleaner
- Rat/ant poison
- Degreasers
- Non-narcotic medications
- Solvents
- Oil-based paint
- Nail polish/remover
- Muriatic acid
- Photography chemicals
- Aerosols
- Coleman lighter fluid
- Pool chemicals
- Fluorescent tubes
- Mercury products

For more information, contact the Macomb County Hazardous Waste Hotline at 586.466.7923

SAFE DRINKING WATER IS A SHARED RESPONSIBILTY

Drinking water quality is important to our community and the region. The City of St. Clair Shores and the Great Lakes Water Authority (GLWA) are committed to meeting state and federal water quality standards including the Lead and Copper Rule. With the Great Lakes as our water source and proven treatment technologies, the GLWA consistently delivers safe drinking water to our community. The City of St. Clair Shores operates the system of water mains that carry this water to your home's service line. This year's Water Quality Report highlights the performance of GLWA and the City of St. Clair Shores water professionals in delivering some of the nation's best drinking water. Together, we remain committed to protecting public health and maintaining open communication with the public about our drinking water.

Safe drinking water is a shared responsibility. The water that the GLWA delivers to your community does not contain lead. Lead can leach into drinking water through home plumbing fixtures, and in some cases, customer service lines. Corrosion control reduces the risk of lead and copper from leaching into your water. Orthophosphates are added during the treatment process as a corrosion control method to create a protective coating in service pipes throughout the system, including in your home or business. The City of St. Clair Shores performs required lead and copper sampling and testing in our community. Water consumers also have a responsibility to maintain the plumbing in their homes and businesses, and can take steps to limit their exposure to lead.

The Water Department is required to test for lead and copper on a 3-year cycle. The last regulated test was conducted in 2014 and therefore our next regulated sampling period will be in 2017. However due to the very unfortunate circumstances in the City of Flint and the concerns expressed by our residents it was decided to do an additional testing cycle in February 2016. Below are the passing results.

The City of St. Clair Shores and the Great Lakes Water Authority are committed to safeguarding our Water supply and delivering the highest quality drinking water to protect public health. Please contact the Water Department at 445-5374 ext. 201 with any questions or concerns about your water.

2016 Special Lead and Copper Monitoring at Customers Tap

Regulated Contaminant	Test Date	Health Goal MCLG	Action Level (AL)	90th Percentile Value*	Number of Samples Over the AL	Violation Yes/No
Lead	2016	0	15 ppb	<2.0 ppb	0	No
Copper	2016	0	1.3 ppm	0.130 ppm	0	No

*The 90th percentile means 90% of the homes tested have Lead and Copper levels below the given 90th percentile value. If the 90th percentile value is above the AL, then additional requirements must be met.

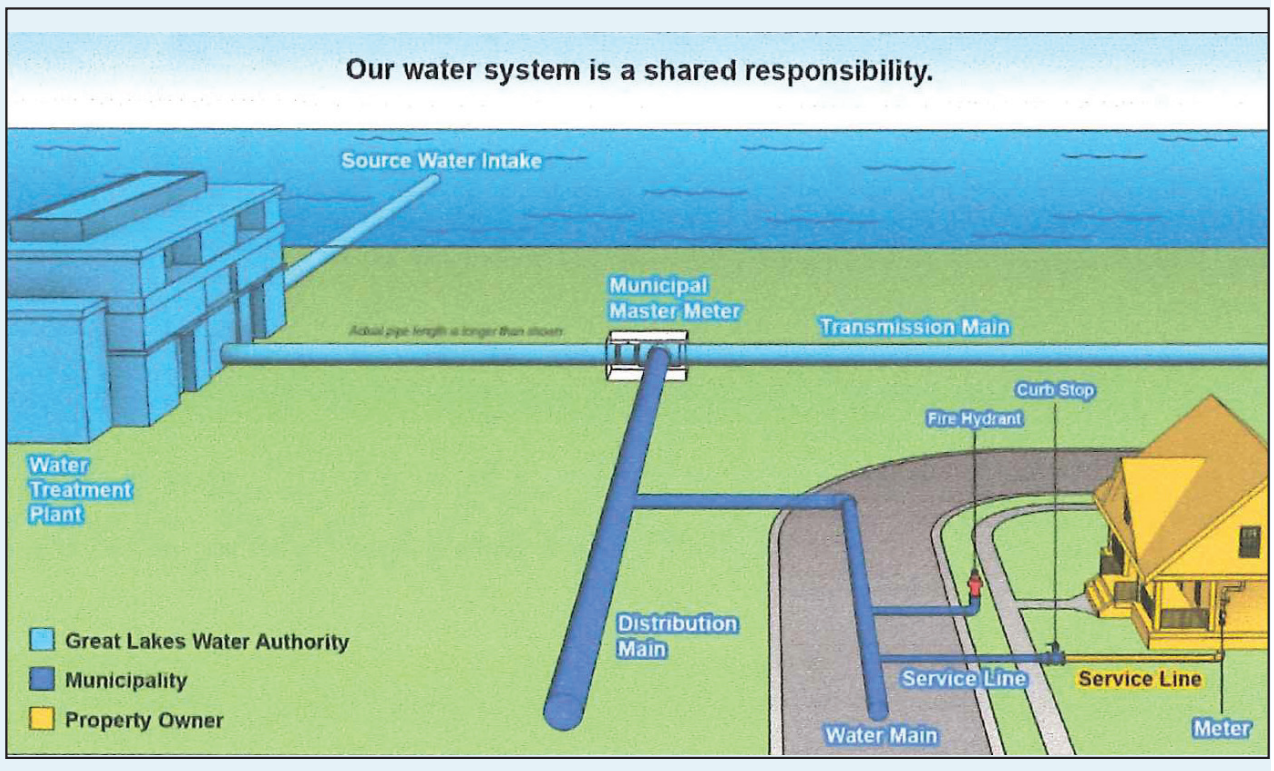
LEAD & COPPER QUESTIONS & ANSWERS

What portion of the water service line is the homeowner's responsibility?
The homeowner is responsible for the portion of the line from the curb stop (shut off valve) in their yard (typically 1-foot in from the sidewalk towards the house) in to the home.

How does lead get into drinking water?
Drinking water provided by the GLWA does not contain lead. Lead may enter drinking water as a result of the corrosion or wearing a way of materials in the water system and household plumbing that contain lead. These materials can include lead-based solder, brass and chrome-plated brass faucets and fixtures, and lead service lines connecting homes to water mains. Corrosion control practices reduce the risk of lead leaching from pipes by creating a protective film or coating inside the pipe. The GLWA, formerly DWSD, has used orthophosphate to control corrosion since 1996.

What are the major sources of lead exposure?
The most common cause of lead poisoning is from contaminated paint chips and dust. Lead was used in household paint until 1978 leaving lead contamination in homes and surrounding soils. Leaded gasoline, used until the mid-1980s, has also contributed to increased lead levels in soil. Lead was used in drinking water service lines until 1950 in some areas and in household plumbing until 1986. Lead can leach from these pipes when corrosive water runs through them.

How does copper get into drinking water?
Like lead, copper can leach out of plumbing materials if corrosive water flows through the pipe. The protective film created by the addition of orthophosphates can also reduce the risk of copper leaching from pipes.



How does orthophosphate work to prevent lead and copper from leaching out of pipes?
Orthophosphate forms a protective layer on the inside of plumbing materials to prevent lead and other metals from dissolving in the water. This protective layer binds with internal metal surfaces of plumbing to prevent lead from leaching into the drinking water. Orthophosphate is a substance that is used in the food and beverage industry and is safe for human consumption. GLWA feeds a maintenance dose of 1.0 part per million (ppm) orthophosphate. This is the equivalent of four drops of orthophosphate in 55 gallons of water.

How long has GLWA been implementing a corrosion control program?
GLWA, formerly DWSD, began using orthophosphate to control corrosion in 1996. Orthophosphate is considered to provide the best level of corrosion control protection based upon a corrosion control study performed in the 1990's.

How does GLWA determine the optimal amount of orthophosphate to add during treatment?
The optimal amount of orthophosphate was determined based on a detailed corrosion control study conducted in the 1990's, which included a desktop study, a pipe loop study, pilot distribution system testing, which included water quality parameter testing. The Michigan Department of Environmental Quality determined optimal water quality parameters that must be maintained to ensure optimum corrosion control will continue in the GLWA system. A minimum of 7.0 pH must be maintained at the treatment tap with no more than 9 days in a 6-month period in non-compliance. A minimum orthophosphate dosage of 0.9 mg/L must be maintained at each of the five water plants on a daily basis, and an orthophosphate residual leaving the water plant should not fall below 0.8 mg/L for more than 9 days in a 6-month period.

How frequently does my community test for lead and copper in the drinking water?
Communities must follow the testing schedule established in the 1991 Lead and Copper Rule of the Safe Drinking Water Act. The frequency of testing is dependent on past compliance with the rule, and the number of samples required is dependent on the size of the community. Communities that have successfully met the Lead and Copper Rule requirements are required to test every 3 years. If requirements have not been met, there are EPA guidelines that must be followed to re-establish compliance. We are subject to all rule changes.

How does my community select homes to test for lead and copper?
Homes that are at the greatest risk of leaching lead and copper are targeted for the voluntary sampling program. This primarily includes single family homes with lead piping, lead service lines and/or copper piping installed with lead solder. Most communities send sampling kits to the same homes each testing period and send kits to more homes than required since the program is voluntary for residents asked to participate and not all residents choose to participate each sampling period.

Where can I find the most recent results for my community's lead and copper testing?
Communities publish an annual Water Quality Report by July 1st of each year. This report contains information about your drinking and source water, any monitored contaminants found in the drinking water over the past year, and if state and federal drinking water standards have been met. "Lead and Copper Monitoring at the Customers' Tap" is one of the detected contaminant tables provided in the report. It is also important to note that the lead and copper results should provide a system-wide picture of lead and copper in the high risk homes tested in your community but do not reflect conditions in a specific household. The Water Quality Report can be found at http://www.scsmi.org.

What is the 90th percentile of reported lead levels from sampling?
The purpose of lead and copper testing is to determine if the corrosion control program is effective. The 90th percentile of sampling result is used as the threshold to determine if there is a problem. To remain in compliance, 90% or more of the samples must be below the lead action level. This value is calculated by listing all sample results in order from lowest to highest and then selecting the result of the sample in the 90th percentile slot. For example, if there are 20 samples, it would be the value of the 18th highest samples.

What is the household action level for lead and what happens if it is exceeded?
If the contaminant concentration for the 90th percentile sample is above the action level of 15.0 parts per billion (ppb) for lead and 1.3 parts per million (ppm) for copper, the community must inform the public about steps to protect their health. The community must replace lead service lines under their control until the lead level falls below the action level again. More frequent monitoring and optimization of corrosion control treatment will also be required until Lead and Copper Rule requirements are met.

Do I need to test my water quality if I have a lead service line?
Testing is the only way to confirm if lead is present in your drinking water. If effective corrosion control is in place and you are taking steps to maintain water quality in your home, this may provide you with confidence that your home does not have a lead problem. If you are concerned, a lead test can cost between $10.00 and $75.00. A list of local certified drinking water laboratories who perform lead and copper testing can be found at MDEQ (website) http://www.michigan.gov/deq

What should I do if I know I have a lead service line but my water quality results indicate lead levels are below the action level?
If you have a lead service line and analytical results of the water in your home reveal lead levels are below the action level, corrosion control treatment is effectively managing the risk of lead leaching into your water. You should continue to follow practices to minimize exposure to lead:

- Run your water for 3 to 5 minutes if it hasn't been used for 6 hours or more. Household water usage activities such as showering, washing clothes and running the dishwater are effective methods for flushing the pipes.
- Always use cold water for drinking, cooking and preparing baby formula.
- Periodically remove and clean the faucet screen/aerator.
- Consider installing a filter on any tap water faucet used for drinking, cooking, brushing teeth, etc.

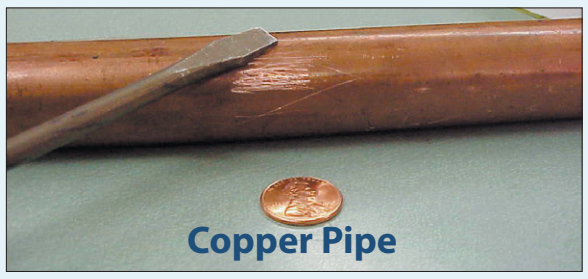
How can I tell if my plumbing fixtures have lead or lead solder in them?
If your home was built before 1986, your home's plumbing likely contains faucets and pipes with some lead content and lead solder. Brass and chrome-plated brass faucets and fittings contain some lead.
Brass fixtures and copper pipes can be joined with lead solder. The Safe Drinking Water Act (SDWA) has reduced the maximum allowable lead content -- that is, content that is considered "lead-free" -- to be a weighted average of 0.25% calculated across the wetted surfaces of pipes, pipe fittings, plumbing fittings, and fixtures and 0.2% for solder and flux. There is no federal requirement for lead-free product testing or third party certification. However, consumers can increase their confidence level by purchasing products certified as meeting Safe Drinking Water Act lead-free requirements. Information can be found at: http://www.nsf.org/newsroom_pdf/Lead_free_certification_marks.pdf

How do I determine what material my service line is made of?
Service lines can be made of copper, lead or galvanized steel. Local construction practices and ordinances impacted the type of pipe material used in communities at specific times. In general, lead pipe was used less frequently during World War II and not used after 1950.
Two simple tests can be performed using a screwdriver and magnet to help determine which material was used in your service line. Locate where the service line comes into your house. This should be near your main water shutoff valve and water meter. Use the flat edge of a screwdriver to scratch through any corrosion that may have built up on the outside of the pipe. If the scraped area is:

- Shiny, silver in color, and looks like a nickel, it is made of lead. The magnet will not stick to lead.
- Copper in color and looks like a penny, it is made of copper. The magnet will not stick to a copper pipe.
- Dull gray in color and the magnet sticks to the surface, it is galvanized steel.

Lead Pipe

Galvanized Steel Pipe


Copper Pipe

Plastic Pipe

If corrosion control is working, how can there still be higher levels of lead in the first draw sample in the morning, after water has sat in the pipe?
Orthophosphate treatment is meant to reduce the amount of lead in your drinking water by forming a passivating layer. It does not remove lead from the water but binds with the lead plumbing material, reducing the amount of lead dissolved in the water. The longer water is in contact with lead plumbing materials the more likely lead will become dissolved in the water.

HOW TO READ THESE TABLES

The tables on the next few pages show the results of our water quality tests. Every regulated contaminant we detected in the water, even in the smallest traces, is listed here. None of the tests performed indicate contaminant levels above allowable limits. The tables contain the name of each substance, the highest level allowed by regulation (MCL), the ideal goals for public health (MCLG), the amount detected, and the usual sources of such contamination.

The tables do not list hundreds of contaminants we tested for, but did not detect.

The City of St. Clair Shores is proud of our historical relationship to Lake St. Clair and supports efforts to not only protect the source of our drinking water, but also recognize our stewardship of one of the world's greatest supplies of fresh water. Participation in City Council meetings - typically held on the first and third Mondays of each month at 7:00 pm at City Hall - is an excellent opportunity for community involvement in matters that address drinking water quality and storm, sanitary and lake water issues.

If you have any questions regarding this report or would like further information, contact the Water Department at **586.445.5374**. Our offices are located at 19600 Pleasant Avenue, St. Clair Shores, MI 48080.

KEY TO DETECTED CONTAMINANTS TABLES

Symbol	Abbreviation	Definition/Explanation
>	Greater than	
AL	Action Level	The concentration of a contaminant, which, if exceeded, triggers treatment or other requirements which a water system must follow.
HAA5	Haloacetic Acids	HAA5 is the total of bromoacetic, chloroacetic, dibromoacetic, dichloroacetic, and trichloroacetic acids. Compliance is based on the total.
LRAA	Locational Running Annual Average	
MCL	Maximum Contaminant Level	The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.
MCLG	Maximum Contaminant Level Goal	The level of contaminant in drinking water below which there is no known or expected risk to health.
MRDL	Maximum Residual Disinfectant Level	The highest level of disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.
MRDLG	Maximum Residual Disinfectant Level Goal	The level of a drinking water disinfectant below which there is no known or expected risk to health. MRLDG's do not reflect the benefits of the use of disinfectants to control microbial contaminants.
n/a	not applicable	
ND	Not Detected	
NTU	Nephelometric Turbidity Units	Measures the cloudiness of water.
pCi/L	Picocuries Per Liter	A measure of radioactivity
ppb	Parts Per Billion (one in one billion)	The ppb is equivalent to micrograms per liter. A microgram = 1/1000 milligram.
ppm	Parts Per Million (one in one million)	The ppm is equivalent to milligrams per liter. A milligram = 1/1000 gram.
RAA	Running Annual Average	
TT	Treatment Technique	A required process intended to reduce the level of a contaminant in drinking water.
TTHM	Total Trihalomethanes	Total Trihalomethanes is the sum of chloroform, bromodichloromethane, dibromoochloromethane and bromoform. Compliance is based on the total.
µmhos	Micromhos	Measure of electrical conductance of water
°C	Celsius	A scale of temperature in which water freezes at 0° and boils at 100° under standard conditions.

Collection and sampling result information in the table provided by Detroit Water and Sewerage Department (DWSD) Water Quality Division, ML Semegen.

2015 REGULATED DETECTED CONTAMINANTS TABLES

The results represent a combination of contaminants reported by the Northeast and the Lake Huron treatment plants.

Regulated Contaminant	Test Date	Unit	Health Goal MCLG	Allowed Level MCL	Highest Level Detected	Range of Detection	Violation yes/no	Major Sources in Drinking Water
Inorganic Chemicals – Monitoring at Plant Finished Water Tap								
Fluoride	5/11/2015	ppm	4	4	0.46	n/a	No	Erosion of natural deposits; Water additive, which promotes strong teeth; Discharge from fertilizer and aluminum factories.
Nitrate	5/11/2015	ppm	10	10	0.30	n/a	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits

Disinfection By-Products – Monitoring in Distribution System Stage 2 Disinfection By-Products

Regulated Contaminant	Test Date	Unit	Health Goal MCLG	Allowed Level MCL	Highest LRAA	Range of Detection	Violation yes/no	Major Sources in Drinking Water
Total Trihalomethanes (TTHM)	2015	ppb	n/a	80	28.5	10.8 - 28.5	No	By-product of drinking water chlorination
Haloacetic Acids (HAA5)	2015	ppb	n/a	60	19	6 - 19	No	By-product of drinking water disinfection

Disinfectant Residual – Monitoring in Distribution System by Treatment Plant

Regulated Contaminant	Test Date	Unit	Health Goal MRDGL	Allowed Level MRDL	Highest RAA	Range of Detection	Violation yes/no	Major Sources in Drinking Water
Total Chlorine Residual	Jan-Dec 2015	ppm	4	4	0.82	0.65-0.91	No	Water additive used to control microbes

2015 Turbidity – Monitored every 4 hours at Plant Finished Water Tap

Highest Single Measurement Cannot exceed 1 NTU	Lowest Monthly % of Samples Meeting Turbidity Limit of 0.3 NTU (minimum 95%)	Violation yes/no	Major Sources in Drinking Water
0.2 NTU	100%	No	Soil Runoff
Turbidity is a measure of the cloudiness of water. We monitor it because it is a good indicator of the effectiveness of our filtration system			

2015 Microbiological Contaminants – Monthly Monitoring in Distribution System

Regulated Contaminant	MCLG	MCL	Highest Number Detected	Violation yes/no	Major Sources in Drinking Water
Total Coliform Bacteria	0	Presence of Coliform bacteria > 5% of monthly samples.	0	No	Naturally present in the environment.
E.coli Bacteria	0	A routine sample and a repeat sample are total coliform positive, and one is also fecal or E.coli positive.	0	No	Human waste and animal fecal waste.

Regulated Contaminant	Test Date	Unit	Health Goal MCLG	Allowed Level MCL	Level Detected	Violation yes/no	Major Sources in Drinking Water
Combined Radium Radium 226 and 228	5/13/2014	pCi/L	0	5	0.86 + or - 0.55	No	Erosion of natural deposits

Regulated Contaminant	Treatment Technique	Typical Source of Contaminant
Total Organic Carbon (ppm)	The Total Organic Carbon (TOC) removal ratio is calculated as the ratio between the actual TOC removal and the TOC removal requirements. The TOC was measured each month and because the level was low, there is no requirement for TOC removal.	Erosion of natural deposits

2015 Special Monitoring

Contaminant	MCLG	MCL	Level Detected	Source of Contamination
Sodium (ppm)	n/a	n/a	4.96	Erosion of natural deposits

Collection and sampling result information in the table provided by Detroit Water and Sewerage Department (DWSD) Water Quality Division, ML Semegen.

City of St. Clair Shores Water Department - Lead and Copper Results (2014 Regulated Sampling)

2014 Lead and Copper Monitoring at Customers' Tap

Regulated Contaminant	Test Date	Unit	Health Goal MCLG	Action Level AL	90th Percentile Value*	Number of Samples Over AL	Violation yes/no	Major Sources in Drinking Water
Lead	2014	ppb	0	15	0 ppb	0	No	Corrosion of household plumbing system; Erosion of natural deposits.
Copper	2014	ppm	1.3	1.3	0.068 ppm	0	No	Corrosion of household plumbing system; Erosion of natural deposits; Leaching from wood preservatives.

*The 90th percentile value means 90 percent of the homes tested have lead and copper levels below the given 90th percentile value. If the 90th percentile value is above the AL additional requirements must be met.

City of St. Clair Shores Water Department – Unregulated Contaminants (2015 Special Monitoring)

Unregulated contaminants are those for which the EPA has not established drinking water standards. Monitoring helps EPA to determine where these contaminants occur and whether it needs to regulate those contaminants. Below is the report of unregulated contaminants detected during quarterly sampling and analysis performed during 2015.

Unregulated Contaminant	Test Date	Units	Average Level Detected	Range of Detection	Use or Environmental Source
Strontium	Feb May Aug Nov 2015	ppb	103.58	97-107	Naturally-occurring element; historical commercial use has been in the faceplate glass of cathode-ray tube televisions to block x-ray emissions
Vanadium	Feb May Aug Nov 2015	ppb	0.396	<0.2-0.58	Naturally-occurring elemental metal; used as a vanadium pentoxide which is a chemical intermediate and a catalyst
Chromium-6	Feb May Aug Nov 2015	ppb	0.152	0.12-0.24	Naturally-occurring element; used in making steel and other alloys; used for chrome plating, dyes, and pigments, leather tanning, wood preservation
Chromium (Total)	Feb May Aug Nov 2015	ppb	0.33	<0.2-0.48	Naturally-occurring element; used in making steel and other alloys; used for chrome plating, dyes, and pigments, leather tanning, wood preservation

The results represent a combination of the connection point and the distribution system sample points as required.

FREQUENTLY ASKED QUESTIONS

Who do I contact to have my water turned on?

Contact the Water Billing Office at 586.447.3317.

How long will my water be turned off if the City needs to repair a water main break?

It's not possible to predict how long the water will be turned off in order to repair a water main break. It depends on the individual circumstances, but be assured that the crews will not leave the site until the repair is complete and the water is back on.

My property was damaged by a water main break repair. When will it be restored?

The City tries to restore areas damaged by water main break repairs in the early spring, as soon as the weather conditions permit.

Why is the water pressure low in one area of my home?

Check your faucets and shower heads. Generally low water pressure is an indication that they are clogged by mineral deposits inside the aerators or screens. Remove and clean these areas to alleviate the problem.

What are the white particles in the water?

White particles in the water are usually caused by the hot water heater " dip tube." These tubes are constructed of PVC and tend to break down over time causing particles to become evident in aerators and screens.

Why is there another water main break in front of my home?

Due to the age of our water system, occasionally a water main will break again even though it has been repaired and property restored previously.

Why is the water cloudy?

Water appears cloudy from oxygen in the water. As the air dissipates, the water clears.

WHAT ARE CROSS CONNECTIONS?

A cross connection is arrangement of piping which could allow undesirable water, sewage, or chemical solutions to enter your drinking (potable) water system as a result of backflow. Cross connections with potable piping systems have resulted in numerous cases of illness and even death.

Historically, cross connections have been one of the most serious public health threats to a drinking water supply system, and many times are present in a residential water system.

Cross connections with potable piping systems are prohibited by state plumbing codes. Additionally, Michigan water utilities are required to have a cross connection control inspection program of their water customers to eliminate and prevent cross connections. Common commercial and industrial users posing a public health threat include:

- industries with private wells;
- industries with chemically treated boilers;
- plating operations, chemical processing plants;
- funeral home, mortuaries;
- marina facilities;
- hospitals, nursing homes;
- research laboratories;
- car washes, laundromats, and
- school facilities.

Most utilities have made inspections of these facilities and have had corrective actions taken where necessary. However, due to a lack of staff and resources, many utilities cannot effectively carry a residential cross connection inspection program. Consequently, residential water users could remain a potential health threat to the public water supply system and to other system customers.

The City uses the services of H2O Compliance Services, Inc. to monitor our cross connection program. They test the backflow devices of our commercial accounts and provide the business owners with the latest information from the DEQ. They can be contacted at 866.328.7727

What hazards threaten the homeowner?

Many common household uses for water pose a public health threat to potable water supply system whether the home is supplied by municipal water or by a private well. Principal areas of water use in the home that pose a threat due to cross connections are:

- a hose connection to a chemical solution aspirator to feed lawn/shrub herbicides, pesticides and fertilizers;
- lawn irrigation systems;
- chemically treated heating systems;
- water softeners;
- hose connections to a water outlet or laundry tub;
- swimming pools;
- solar heating systems;
- private non-potable water supplies;
- non-code (siphonable) ball cock assemblies in toilets, and
- water-operated sump drain devices.

The list of potential cross connection hazards is by no means complete. A private residence that has one or two of these situations is seriously jeopardizing its own potable water system and that of the community if it is served by a public water supply system.

What can be done?

Homeowners as well as plant managers, business persons, administrators and school officials all must share the responsibility to protect potable water piping systems from contamination through cross connections. Each should contact either the City or the Macomb County Health Department for assistance in locating and correcting cross connection hazards. In many instances involving residential cross connections, the installation of a hose bib (faucet) vacuum breaker can prevent backsiphonage of contaminants and provide adequate protection of the homeowner's water system and consequently, the utility's water system.

This means equipping each outside hose connection and hose connections in the basement and laundry room with a simple and inexpensive vacuum breaker. These devices can be obtained from hardware stores or plumbing supply shops for about $10 each. In other instances, more elaborate protective devices may be necessary. For those situations, assistance in determining what device is appropriate may be needed.

Questions concerning cross connection control and backflow prevention may be directed to the:

- Michigan Department of Environmental Quality (MDEQ) Resource Management Division **517.241.1242**
- Michigan Department of Licensing and Regulatory Affairs. Bureau of Construction Codes Plumbing Division **517.241.9330**.