

# Annual Water Quality Report

Water Testing Performed in 2015

Presented By:  
The Charter Township of Orion



PWS ID: 5035

Orion Township is providing its water customers with the annual Water Quality Report. Testing is performed between January 1 and December 31, 2015

If you should have any questions about this report, please contact C. William Ireland, Director of the Department of Public Works, at (248) 391-0304, ext. 118.

### Stormwater Management

In 1999, the U.S. Environmental Protection Agency (U.S. EPA) published phase II regulations for stormwater discharges. Smaller communities and public entities that are part of a contiguous urban area and have separate stormwater sewer systems such as the Charter Township of Orion are subject to these requirements. (The Phase I regulations took effect in 1990 and applied to communities with a population greater than 100,000). As part of Phase II regulations, the Charter Township of Orion was required to obtain a National Pollutant Discharge Elimination (NPDES) permit. One of the conditions of the NPDES permit is to develop a public education program. Therefore, Orion Township will be periodically advertising events concerning stormwater management on its Web site ([www.oriontownship.org](http://www.oriontownship.org)). The township will also be working with the Clinton River Watershed Council and other local communities on various educational programs concerning stormwater management. Please visit the Clinton River Watershed Council Web site at [www.crwcc.org](http://www.crwcc.org) or call (248) 601-0606 for event updates and educational materials.

### Where Does My Water Come From?

Orion Township customers are fortunate because we enjoy an abundant water supply from the Great Lakes Water Authority. Orion Township receives its water from the Water Treatment Plant north of Port Huron. The plant draws surface water from Lake Huron into the plant for treatment through a 16-foot-diameter tunnel, which extends five miles out into Lake Huron. The average depth of the pipe is 190 feet, and at the intake it is 45 feet above the bottom of the lake. The water is then treated and pumped through the systems to Orion Township and other communities. Tests are conducted by GLWA on a regular basis to ensure the water's safety, as required by the State of Michigan and the U.S. EPA. The GLWA also has four other surface water treatment plants that are interconnected and could provide water to Orion Township should the need arise.

Your source water 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 Detroit Water and Sewerage Department, and the Michigan Public Health Institute performed a source water assessment in 2004 to determine the susceptibility of potential contamination. The susceptibility rating is a 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.

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

Contaminants that may be present in source water include:

Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.

Inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.

Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.

Organic chemical contaminants, including synthetic and volatile organics, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff and septic systems.

Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, EPA prescribes regulations, 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."

## Lead In Drinking Water

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

“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. EPA/CDC guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline (800-426-4791).”

Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your home's plumbing. If you are concerned about elevated lead levels in your home's water, you may wish to have your water tested and flush your tap for 30 seconds to 2 minutes before using tap water. Additional information is available from the Safe Drinking Water Hotline (800-426-4791).

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at (800-426-4791).

## Cross Connection

Orion Township is working to make sure that you have the safest drinking water by eliminating potential cross connection to the public water system. What is a cross connection? It is an arrangement of piping which could allow undesirable water, sewage or chemical solutions (pollutants) to enter your drinking (potable) water system as a result of backflow. A pollutant may enter the potable water system when the pressure of the pollution source exceeds the pressure of the potable water source or when a sudden loss of pressure occurs in the water system and backsiphonage occurs.

Examples of potential sources of pollution from a residential customer are garden hoses, sprinkler systems, swimming pools, hot tubs and boiler systems. Based on their frequency of use, garden hoses create the greatest concern for cross connections in the residential setting. Several cases of pollution/contamination have been caused by misuse of the garden hose - hoses left submerged in swimming pools, attached to chemical sprayers, and laying on the ground with exposure to cesspools, garden chemicals, and animal feces. Water softeners, solar heating systems, private wells, toilets, and water – operated sump drain devices are also sources of cross connection in a residential home, and any residence that has one or more of these situations is seriously jeopardizing its own potable water systems and that of the community if it is served by a public water supply system.

Community water supplies are continuously jeopardized by cross connections unless appropriate valves, known as backflow prevention devices are installed and tested. Backflow prevention devices are added to the potable water line and are used to prevent cross connection from occurring. Beginning January 2, 2011, the minimum frequency that backflow devices must be tested is every three (3) years. Orion Township notifies those commercial facilities and residential accounts when testing of devices is required and the date the test reports are due. Testing of cross connection prevention must be completed by a Michigan state certified tester.

Cross Connection Test Reports are available on our website and [oriontownship.org](http://oriontownship.org) under the Public Works Department, or for more information, please call 248-391-0304 ext 116.

## Summer Water Usage & Outside Water

### Leaks

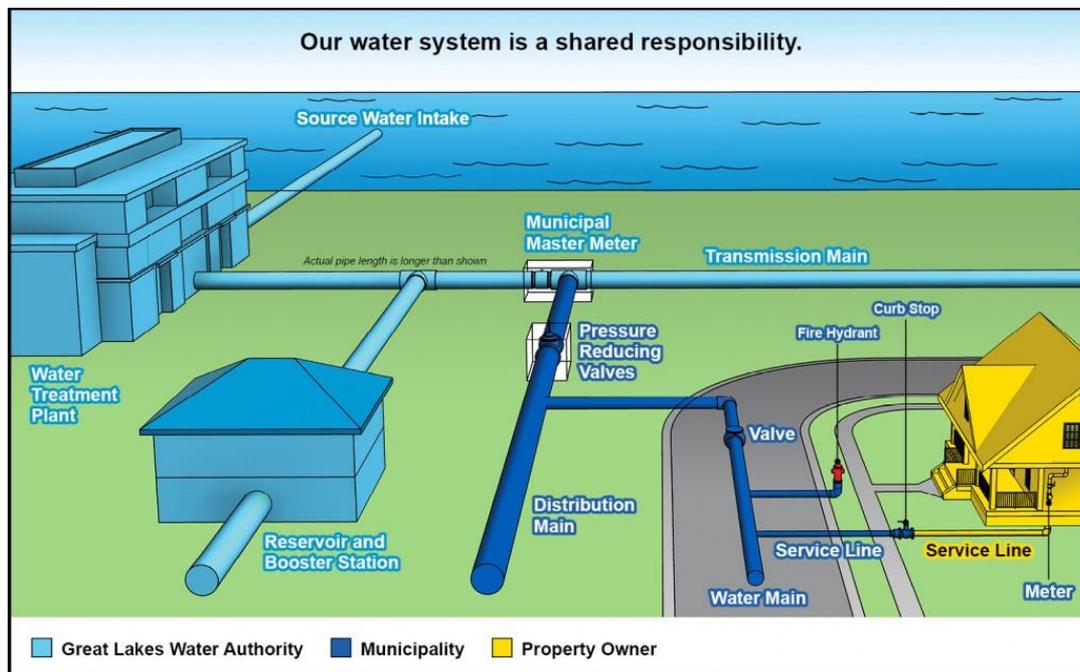
When warm weather arrives and your outside water usage begins to increase you should anticipate a higher water bill for the two bills that cover the summer months. Watering lawns and gardens, power washing such items as your house, lawn furniture, boats and also filling a pool will increase your water usage. With increased water usage, there will also be the possibility of outdoor water leaks. Most common are irrigation leaks that can be hard to detect and most often are not discovered until a bill is received reflecting high usage. Our department is frequently asked if the water bill can be adjusted due to an outdoor water leak. **For any type of leak, once water has gone through the water meter, water billing cannot be adjusted.**

We recommend if you are concerned about how much water your household is using, monitor your water usage. This can be easily done by writing down all the numbers on your water meter before and after heavy water usage. You can call our office with those numbers and we can give you an estimate of how many units of water you have used. Because our department only reads meters every three months in conjunction with billing, if you keep a diary of your water meter reads you can track your usage and possibly determine a leak before you receive a high bill. If you are interested in reducing your water usage, there are resources online that can provide water conservation tips around your home.

Lake Huron Water Treatment Plant  
2015 Regulated Detected Contaminants Tables

Regulated Contaminant	Test Date	Unit	Health Goal MCLG	Allowed Level MCL	Highest Level Detected	Range of Detection	Violation	Major Sources In Drinking Water	
<b>Inorganic Chemicals - Monitoring at Plant Finished Water Tap</b>									
Flouride	5/11/2015	ppm	4	4	0.43	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; Erosion of natural deposits	
<b>Disinfection By-Products - Monitoring in Distribution System Stage 2 Disinfection By-Products</b>									
Regulated Contaminant	Test Date	Unit	Health Goal MCLG	Allowed Level MCL	Highest LRAA	Range of Detection	Violation	Major Sources In Drinking Water	
Total Trihalomethanes (TTHM)	2015	ppb	n/a	80	45	34	no	By-product of drinking water chlorination	
Haloacetic Acids (HAA5)	2015	ppb	n/a	60	18	15	no	By-product of drinking water disinfection	
<b>Disinfectant Residuals Monitoring in DWSD Distribution System by Treatment Plant</b>									
Regulated Contaminant	Test Date	Unit	Health Goal MRDGL	Allowed Level MRDL	Highest RAA	Quarterly Range of Detection	Violation	Major Sources In Drinking Water	
Total Chlorine Residual	Jan - Dec 2015	ppm	4	4	0.82	0.71 - 0.91	no	Water additive used to control microbes	
<b>2015 Turbidity - Monitored every 4 hours at Plant Finished Water Tap</b>									
Highest Single Measurement Cannot Exceed 1 NTU		Lowest Monthly % of Samples Meeting Turbidity Limit of 0.3 NTU (minimum 95%)					Violation	Major Sources In Drinking Water	
0.2 NTU		100%					no	Soil runoff	
<i>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.</i>									
<b>2015 Microbiological Contaminants - Monthly Monitoring in Distribution System</b>									
Regulated Contaminant	MCLG	MCL		Highest Number Detected		Violation	Major Sources In Drinking Water		
Total Coliform Bacteria	0	Presence of Coliform Bacteria > 5% of monthly		In one month: 0		no	Naturally present in our environment		
E. coli or Fecal Coliform Bacteria	0	A routine sample and a repeat sample are total		Entire Year: 0		no	Human waste and animal fecal waste		
<b>2014 Lead and Copper Monitoring at Customers' Tap</b>									
Regulated Contaminant	Test Date	Unit	Health Goal MCLG	Action Level AL	90th Percentile Value *	Number of Samples over AL	Violation	Major Sources In Drinking Water	
Lead	2014	ppb	0	15	0	0	no	Corrosion of household plumbing system; Erosion of natural	
Copper	2014	ppb	1300	1300	33.9	0	no	Corrosion of household plumbing system; Erosion of natural deposits; Leaching from wood preservatives	
* The 90% 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.									
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 quarter and because the level is low, there is no requirement for TOC removal.							Erosion of natural deposits	
<b>2015 Special Monitoring:</b>									
Contaminant	MCLG		MCL		Level Detected		Source of Contamination		
Sodium (ppm)	n/a		n/a		4		Erosion of natural deposits		

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.
mg/L	Milligrams per liter	A milligram = 1/1000 gram 1 milligrams per liter is equal to 1 ppm
MRDL	Maximum Residual Disinfectant Level	The highest level of disinfectant allowed in drinking water. There is convincing evidence that the 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. MRDLG's do not reflect the benefits of the use of disinfectants to control microbial contaminants.
n/a	Not Applicable	
NTU	Nephelometric Turbidity Units	Measures the cloudiness of water.
pCi/L	Picocuries Per Liter	A measure of radioactivity. Picocurie (pCi) means the quantity of radioactive material producing 2.22 nuclear transformations per minute.
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, dibromochloromethane and bromoform. Compliance is based on the total.



## WATER QUALITY MATTERS

We all play a role in maintaining the quality of our drinking water. The Great Lakes Water Authority, local municipalities and customers are connected through a complex water infrastructure system that is designed to protect public health.

The Great Lakes Water Authority operates five water treatment plants that treat water drawn from Lake Huron and the Detroit River to meet Safe Drinking Water Act requirements. Our commitment to deliver the best water quality possible is evident in our use of proven treatment techniques and a comprehensive monitoring program. We set target treatment standards that are stricter than state regulatory requirements and test more frequently during treatment.

The 126 communities that receive drinking water from Great Lakes Water Authority operate a local distribution system that includes a network of water mains, fire hydrants and sometimes booster stations and pressure reducing valves. These communities keep water flowing through local piping at the right pressure, maintain pipes and valves, flush and maintain fire hydrants, monitor the distribution system for specific contaminants, and address customer concerns.

The nearly 4 million customers that receive GLWA water rely on this service each day to drink, cook, clean, flush toilets, wash clothes and water their lawns. Customers have a responsibility to maintain the plumbing in their homes and to follow steps to support good water quality. These steps include running water if it hasn't been used for a while, cleaning faucet aerators and shower heads, and flushing hot water heaters.

### Billing & Payment

Water/Sewer bills are mailed to customers on a quarterly basis. Payment can be made in person at the Township Treasurer's office, put in our drop box located at the Township's front entrance, or mailed to Orion Township Water & Sewer Dept., 2525 Joslyn Rd, Lake Orion, MI 48360.

Online payments are also accepted. Please visit [www.orientownship.org](http://www.orientownship.org) and click on the Public Works Department for more information.

If you would like your bill sent electronically please send an email to [mcarroll@orientownship.org](mailto:mcarroll@orientownship.org) with your request.

You may also view your bill online at [accessmygov.com](http://accessmygov.com)

### Final Bills

If you are moving please contact The Public Works Department to order a final bill. If you are a new resident or business owner please contact our office to set up your new account.

**FOR NIGHT, WEEKEND OR  
HOLIDAY  
WATER OR SEWER  
EMERGENCIES  
PLEASE CALL 248-858-4911**

### MICHIGAN'S UTILITY COLOR CODE

RED		Electric
YELLOW		Gas, Oil, Steam or Petroleum
ORANGE		Communications
BLUE		Potable Water
PURPLE		Reclaimed Water Irrigation
GREEN		Sewer & Drain Lines
WHITE		Proposed Excavation
PINK		Temporary Surveying

The colorful flags used to mark underground utility lines can be very attractive to young children. Remind children not to remove the utility flag markings. If the utility flags are pulled out, do not attempt to place them back into the ground. Never assume you remember where the flags were located.

### SUMMER WATERING RESTRICTIONS

Watering restrictions have been adopted from the beginning of May until the end of September for all those connected to the Orion Township water system

This includes all commercial accounts, churches, homeowner association sprinkler accounts and residential accounts with automatic sprinkler systems.

The following restrictions shall apply:

Watering may only be done between the hours of 12:00 a.m. (midnight) and 5:00 a.m.

We would appreciate everyone's help and cooperation in following the mandatory watering restrictions.

If the restrictions are not followed, your water service could be discontinued.

### **Orion Township Water & Sewer Department 248-391-0304**

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