



CITY OF NOVI 2020 ANNUAL CONSUMER CONFIDENCE REPORT ON WATER QUALITY

Drinking water quality is important to our community and the region. The City of Novi 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, along with proven treatment technologies, the GLWA consistently delivers safe drinking water to our community. The City of Novi 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 Novi 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.

About our system

The City of Novi purchased 2,303,774,000 gallons of treated water from the Great Lakes Water Authority (GLWA) in 2020, and currently has approximately 15,000 customer accounts on the Novi water distribution system. GLWA withdraws source water from Lake Huron and the Detroit River. There are two intakes in the Detroit River: one near Belle Isle, and one at the south near Lake Erie. A third intake is located at the south end of Lake Huron. Intake water is conveyed to five large water treatment plants for physical and chemical treatment. The City receives most of its water from GLWA's Lake Huron Water Treatment Plant located in St. Clair County near Port Huron, with a smaller portion of water provided to the City from the Springwells Water Treatment Plant in Dearborn, which draws water from the Belle Isle intake. All GLWA treatment facilities operate year-round on a 24 hours a day, seven days a week basis. GLWA uses chlorine to disinfect source water and adds fluoride to improve drinking water customers' dental health. Novi and GLWA are committed to safeguarding our water supply and delivering the highest quality drinking water to protect public health. Together, we remain committed to protecting public health and maintaining open communication with the public about our drinking water. Please be assured that if water quality is compromised, we will notify our customers immediately.

How do we know our water is safe?

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).

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 can 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.

DETECTED CONTAMINATION TABLES

The tables and information contained on the following pages are based on tests conducted by GLWA and the City of Novi of treated water supplied by the Lake Huron Water Treatment Plant and Springwells Water Treatment Plant. GLWA conducts many tests throughout the year; however, only tests that detect the presence of a contaminant are shown. The State does allow monitoring for certain contaminants at a frequency of less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. For this reason, although all of the data is representative of water quality, some data sets are more than one year old.

2020 Lake Huron Water Treatment Plant Regulated Detected Contaminants Tables

2020 Inorganic Chemicals - Annual Monitoring at Plant Finished Tap								
Regulated Contaminant	Test Date	Unit	Health Goal MCLG	Allowed Level MCL	Highest Level Detected	Range of Detection	Violation	Major Sources in Drinking Water
Fluoride	3-10-2020	ppm	4	4	0.72	n/a	no	Erosion of natural deposit; Water additive, which promotes strong teeth; Discharge from fertilizer and aluminum factories.
Nitrate	3-10-2020	ppm	10	10	0.30	n/a	no	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
Barium	5-16-17	ppm	2	2	0.01	n/a	no	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.

2020 Disinfection Residual - Monitoring in the Distribution System								
Regulated Contaminant	Test Date	Unit	Health Goal MRDLG	Allowed Level MRDL	Highest Level RAA	Range of Quarterly Results	Violation	Major Sources in Drinking Water
Total Chlorine Residual	2020	ppm	4	4	0.77	0.70-0.85	no	Water additive used to control microbes

2020 Disinfection By-Products - Stage 2 Disinfection By-Products Monitoring in the Distribution System								
Regulated Contaminant	Test Date	Unit	Health Goal MCLG	Allowed Level MCL	Highest Level LRAA	Range of Quarterly Results	Violation	Major Sources in Drinking Water
(TTHM) Total Trihalomethanes	2020	ppb	n/a	80	45.5	13 - 52	no	By-product of drinking water chlorination
(HAA5) Haloacetic Acids	2020	ppb	n/a	60	19.25	9.4 - 25	no	By-product of drinking water chlorination

2020 Turbidity - Monitored Every 4 Hours at the 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	Major Sources in Drinking Water
0.10 NTU	100%		no	Soil Runoff
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.				

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 is measured each quarter and because the level is low, there is no requirement for TOC removal.	Erosion of natural deposits

Radionuclides - Monitored at the Plant Finished Tap in 2014							
Regulated Contaminant	Test Date	Unit	MCLG	MCL	Level Detected	Violation	Major Sources in Drinking Water
Combined Radium Radium 226 and 228	5/13/14	pCi/L	0	5	0.86 ± 0.55	no	Erosion of natural deposits

2020 Special Monitoring						
Contaminant	Test Date	Unit	MCLG	MCL	Highest Level Detected	Source of Contaminant
Sodium	3-10-2020	ppm	n/a	n/a	4.91	Erosion of natural deposits

2020 Springwells Water Treatment Plant Regulated Detected Contaminants Tables

2020 Inorganic Chemicals - Annual Monitoring at Plant Finished Tap								
Regulated Contaminant	Test Date	Unit	Health Goal MCLG	Allowed Level MCL	Highest Level Detected	Range of Detection	Violation	Major Sources in Drinking Water
Fluoride	3-10-2020	ppm	4	4	0.63	n/a	no	Erosion of natural deposit; Water additive, which promotes strong teeth; Discharge from fertilizer and aluminum factories.
Nitrate	3-10-2020	ppm	10	10	0.37	n/a	no	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
Barium	5-16-2017	ppm	2	2	0.01	n/a	no	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.

2020 Disinfection Residual - Monitoring in the Distribution System								
Regulated Contaminant	Test Date	Unit	Health Goal MRDLG	Allowed Level MRDL	Highest Level RAA	Range of Quarterly Results	Violation	Major Sources in Drinking Water
Total Chlorine Residual	2020	ppm	4	4	0.70	0.60-0.79	no	Water additive used to control microbes

2020 Disinfection By-Products - Stage 2 Disinfection By-Products Monitoring in the Distribution System								
Regulated Contaminant	Test Date	Unit	Health Goal MCLG	Allowed Level MCL	Highest Level LRAA	Range of Quarterly Results	Violation	Major Sources in Drinking Water
(TTHM) Total Trihalomethanes	2020	ppb	n/a	80	45.5	13 - 52	no	By-product of drinking water chlorination
(HAA5) Haloacetic Acids	2020	ppb	n/a	60	19.25	9.4 - 25	no	By-product of drinking water chlorination

2020 Turbidity - Monitored Every 4 Hours at the 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	Major Sources in Drinking Water
0.21 NTU	100%		no	Soil Runoff

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.

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 is measured each quarter and because the level is low, there is no requirement for TOC removal.	Erosion of natural deposits

2020 Special Monitoring						
Contaminant	Test Date	Unit	MCLG	MCL	Highest Level Detected	Source of Contaminant
Sodium	3-10-2020	ppm	n/a	n/a	5.37	Erosion of natural deposits

These tables are based on tests conducted by GLWA in the year 2020 or the most recent testing done within the last five calendar years. GLWA conducts tests throughout the year only tests that show the presence of a substance or require special monitoring are presented in these tables.

2020 Lead and Copper Monitoring at Customers' Tap									
Regulated Contaminant	Test Date	Unit	Health Goal MCLG	Action Level AL	90 th Percentile Value	Number of Samples Over AL	Range of Individual Samples Results	Violation Yes/No	Major Sources in Drinking Water
Lead	2020	ppb	0	15	1	0	0 - 6	No	Lead services lines, corrosion of household, plumbing including fittings and fixtures; erosion of natural deposits"
Copper	2020	ppm	1.3	1.3	0.1	0	0.0 – 0.1	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.

In 1992, the City of Novi began testing homes with plumbing systems that may contribute lead and copper to the household's tap water. The results of lead and copper testing have all been below EPA-prescribed action levels. Additional information is available from the **Safe Drinking Water Hotline (800) 426-4791**.

Treatment Technique							
Regulated Contaminant	MCL	Treatment Technique (TT) Standard	Treatment Technique (TT) Violation yes/no	Reason for violation	Action Taken	Major Sources in Drinking Water	Health Effects
Lead	TT	No more than (9) days in a six (6) month period below the established minimum.	No	n/a	n/a	Corrosion of household plumbing system; Erosion of natural deposits.	Infants and children who drink water containing lead 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	TT	No more than (9) days in a six (6) month period below the established minimum	No	n/a	n/a	Corrosion of household plumbing system; Erosion of natural deposits; Leaching from wood preservatives.	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.

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 City of Novi 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 <http://www.epa.gov/safewater/lead>.

Safe drinking water is a shared responsibility. The water that GLWA delivers to our 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 Novi 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 City of Novi is not aware of any lead service lines existing within the water distribution system. Of the 14,646 service lines, none of them are known to contain lead, or galvanized pipe previously connected to a lead service line.

Unregulated Contaminant Monitoring Rule (UCMR)

Unregulated contaminants are those for which the EPA has not established drinking water standards. Monitoring helps the EPA determine where certain contaminants occur and whether those contaminants need to be regulated. Beginning in July of 2008 - April 2009, The Great Lakes Water Authority began monitoring quarterly for unregulated contaminants under the Unregulated Contaminant Monitoring Rule 2 (UCMR 2). More information about this program is available at the following link, <https://www.epa.gov/dwucmr/fourth-unregulated-contaminant-monitoring-rule>.

Beginning in February 2015, the City of Novi began monitoring quarterly for unregulated contaminants under the Unregulated Contaminant Monitoring Rule. Below is a summary of the results for the UCMR 3 completed in 2015 and the UCMR 4 completed between 2018-2020 for any contaminant above the detection level.

UCMR 3 Unregulated Contaminant Monitoring Rule (2015)					
Unregulated Contaminant	Test Dates	Unit	MRL	Range of Detection	Average Result
Chromium	2015 (Feb, May, Aug, Dec)	ppb	0.2	0.2-0.3	0.23
Chromium, Hexavalent	2015 (Feb, May, Aug, Dec)	ppb	0.03	0.10-0.26	0.19
Strontium	2015 (Feb, May, Aug, Dec)	ppb	0.3	92-100	97.4
Vanadium	2015 (Feb, May, Aug, Dec)	ppb	0.2	0.3-0.6	0.4
Testosterone	2015 (Feb, May, Aug, Dec)	ppb	0.0001	0.0001	0.0001
4-Androstene-3,17-dione	2015 (Feb, May, Aug, Dec)	ppb	0.0003	0.0005	0.0005
UCMR 4 Unregulated Contaminant Monitoring Rule (2018-2020)					
Bromochloroacetic acid	2019 (Nov), 2020 (Feb, May, Aug)	ppb	0.3	0.393 - 2.91	1.697
Bromodichloroacetic acid	2019 (Nov), 2020 (Feb, May, Aug)	ppb	0.5	3.71 – 5.42	4.421
Chlorodibromoacetic acid	2019 (Nov), 2020 (Feb, May, Aug)	ppb	0.3	0.747 – 1.37	1.076
Dibromoacetic acid	2019 (Nov), 2020 (Feb, May, Aug)	ppb	0.3	0.348 – 0.513	0.412
Dichloroacetic acid	2019 (Nov), 2020 (Feb, May, Aug)	ppb	0.2	1.66 – 10.1	5.319
Monobromoacetic acid	2019 (Nov), 2020 (Feb, May, Aug)	ppb	0.3	0.36 – 0.435	0.398
Monochloroacetic acid	2019 (Nov), 2020 (Feb, May, Aug)	ppb	2.0	2.03 – 2.03	2.030
Trichloroacetic acid	2019 (Nov), 2020 (Feb, May, Aug)	ppb	0.5	0.584 – 13.4	8.273

More information about contaminants and potential health effects can be obtained by visiting the EPA's website at <http://www.epa.gov/dwucmr/third-unregulated-contaminant-monitoring-rule> or by calling the Environmental Protection Agency's Safe Drinking Water Hotline (800-426-4791).

Key to Detected Contaminants Tables		
Symbol	Abbreviation	Definition/Explanation
Symbol	Abbreviation	Definition/Explanation
AL	Action Level	The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
°C	Celsius	A scale of temperature in which water freezes at 0° and boils at 100° under standard conditions.
>	Greater than	
HAA5	Haloacetic Acids	HAA5 is the total of bromoacetic, chloroacetic, di-bromoacetic, dichloroacetic, and trichloroacetic acids. Compliance is based on the total.
Level 1	Level 1 Assessment	A Level 1 assessment is a study of the water system to identify potential problems and determine (if possible) why total coliform bacteria have been found in our system.
LRAA	Locational Running Annual Average	The average of analytical results for samples at a particular monitoring location during the previous four quarters.
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. MCLGs allow a margin of safety.
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. MRDLG'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	The average of all analytical results for all samples during the previous four quarters.
SMCL	Secondary Maximum Contaminant Level	
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.
µohms	Microohms	Measure of electrical conductance of water

As part of the 1998 Amendment to the Federal Safe Drinking Water Act, the Consumer Confidence Report (CCR) Rule became effective September 1998. The CCR Rule requires all community water systems in the United States to prepare an annual water quality report and to deliver it to all of the water system's customers. The CCR Rule was published in the Federal Register August 19, 1998 and can be found at the U.S. EPA's website: <http://water.epa.gov/drink/info/ccr/regulations.cfm>

Special Health Information

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).

Information on Source Water

A majority of Novi's 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.

In 2015, GLWA received a grant from the Michigan Department of Environmental Quality to develop a source water protection program for the Lake Huron Water Treatment Plant intake. The program 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 and education. If you would like to know more information about the Source Water Assessment or the SWIPP please, contact GLWA at 313-925-8102

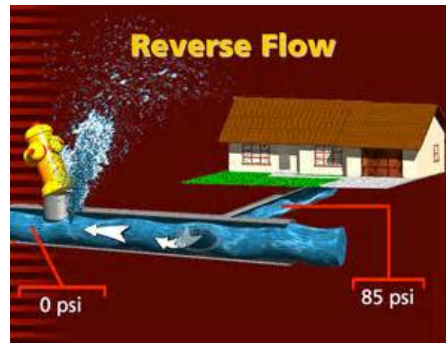
A smaller portion of Novi's source water comes from the Detroit River, situated within the Lake St. Clair, Clinton River, Detroit River, Rouge River, Ecorse River in the U.S. and parts of the Thames River, Little River, Turkey Creek and Sydenham watersheds in Canada. The Michigan Department of Environmental Quality in partnership with the U.S. Geological Survey, the Detroit Water and Sewerage Department, and the Michigan Public Health Institute performed a source water assessment in 2004 to determine the susceptibility of GLWA's Detroit River source water for potential contamination. The susceptibility rating is based on a seven-tiered scale and ranges from very low to very high determined primarily using geologic sensitivity, water chemistry, and potential contaminant sources. The report described GLWA's Detroit river intakes as highly susceptible to potential contamination. However, all four GLWA water treatment plants that service the city of Detroit and draw water from the Detroit River have historically provided satisfactory treatment and meet drinking water standards.

GLWA has initiated source-water protection activities that include chemical containment, spill response, and a mercury reduction program. GLWA participates in the National Pollutant Discharge Elimination System permit discharge program and has an emergency response management plan. In 2016, the Michigan Department of Environmental Quality approved the GLWA Surface Water Intake Protection Program plan. The programs include seven elements that include the following: roles and duties of government units and water supply agencies, delineation of a source water protection areas, identification of potential sources of contamination, management approaches for protection, contingency plans, siting of new water sources, public participation and public education activities. If you would like to know more information about the Source Water Assessment report please, contact GLWA at 313 926-8102.

News from Novi's Water & Sewer Division

Cross Connection Control Program

The City of Novi has a commercial and residential Cross Connection Control Program (CCCP) in place to protect the drinking water supply by eliminating the risk of contamination through connections to private plumbing systems. Without proper protection, water can be forced to flow backwards into the public water supply in certain situations, such as a fire fighting event or water main break that creates an abnormally low pressure in the water main. This is a requirement of the Michigan Department of Environment, Great Lakes & Energy (EGLE), and is in place to protect the public drinking water supply. Per the guidelines of the EGLE, the City has established a residential CCCP that is being implemented throughout five districts throughout the City. As a resident of the City, you or your property manager, if applicable, will be contacted to provide information as required to fulfill the requirements of the program. For further information, please visit the City's website at <http://cityofnovi.org/City-Services/Public-Services/Cross-Connection-Control.aspx>



We invite public participation in decisions that affect drinking water quality. The Novi City Council occasionally takes action regarding the City's water distribution system, and City Council meetings are held twice a month on Monday nights at 7:00 pm in the Council Chambers located in the Novi Civic Center, 45175 W Ten Mile Rd., Novi, MI 48375. Contact the City Clerk's office at 248-347-0456 or visit the City's website at www.cityofnovi.org for specific Council meeting dates and agendas.

If you would like to know more about this report, please contact Scott Roselle, Water & Sewer Manager, (248) 735-5661 or sroselle@cityofnovi.org. Additional copies of this report are available online and at the Novi Civic Center and Novi Public Library.

City of Novi Water Division (248) 735-5661

EPA Safe Drinking Water Hotline: (800) 426-4791

United States Environmental Protection Agency website: www.epa.gov/safewater/