

2018
RESULTS

DETROIT WATER QUALITY REPORT



**Water & Sewerage
Department**

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NOTICE: This 2018 Water Quality Report contains important information about your drinking water. Please have someone translate this document for you if you are unable to read the report.

AVISO: Este Informe de calidad del agua de 2018 contiene información importante sobre su agua potable. Haga que alguien le traduzca este documento si no puede leer el informe.

إشعار : يحتوي تقرير جودة المياه لعام
على معلومات مهمة حول مياه الشرب. يرجى 2018
أن يقوم شخص ما بترجمة هذا المستند
لك إذا كنت غير قادر على قراءة التقرير

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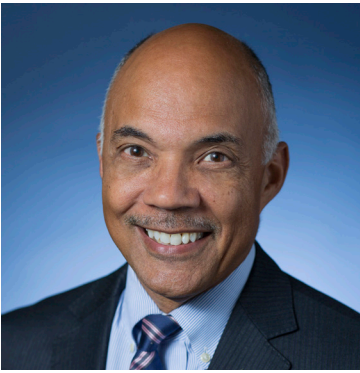
How to Report an Emergency

To report emergencies, such as water main breaks, flooded streets, missing manhole covers or leaking fire hydrants, call the DWSD 24-hour service line at **313-267-8000**. Mobile users may download the **Improve Detroit app** to take a photo and report an issue, or report it online at **detroitmi.gov/DWSD**.



Public Participation

The Board of Water Commissioners meet on the third Wednesday of each month at 2 p.m., unless otherwise noticed. Seven of the 12 meetings are at the Water Board Building, located at 735 Randolph Street. The other five meetings are on the third Wednesday at 6 p.m. at a location in the community, which will be noticed 30 days in advance of the meeting date. All meetings are open to the public. For more information, please contact the DWSD board liaison at **313-224-4704** or visit **detroitmi.gov/DWSD** for meeting dates, locations and agendas.



GARY A. BROWN

DIRECTOR
DETROIT WATER AND SEWERAGE DEPARTMENT

Dear Valued Customers,

As a lifelong Detroit resident, I have always been proud of our city's drinking water. Now as director of the Detroit Water and Sewerage Department, I am proud of our employees who work hard every day to deliver some of the best water in the world.

Our core job is to deliver clean water, transport wastewater and manage stormwater for Detroit, but our promise to you goes deeper. We're invested in our great city and committed to Detroit's future through infrastructure upgrades, green stormwater infrastructure and compassionate financial assistance programs. We are more than a utility – we are your community partner, dedicated to keeping your water flowing.

Whether you read about it in this report, or you see our employees hard at work in your neighborhood, please know we put our commitment into practice every

day. Over the next five years, we are investing \$500 million in water main and sewer upgrades and providing full lead service line replacement. This includes replacing the service line from the water main to the stop box (your turn-on/turn-off valve) and the lead service line from the stop box to inside your property. This unprecedented effort will help us provide safe, clean drinking water for generations to come.

We're also working in your neighborhood on green stormwater infrastructure projects to manage stormwater runoff from rain and snowmelt in an environmentally friendly way. The projects beautify our neighborhoods through bioretention areas and bioswales and reduce stormwater from going to the wet weather treatment facilities. This gives Detroit the unique opportunity to become known as the greenest city in America.

Of course, our most important asset is our customer base. That's why we strive to offer compassionate customer assistance programs so every customer has a path to avoid a water service interruption. The Water Residential Assistance Program (WRAP) and our 10/30/50 Plan are just two of the ways we help customers who are having trouble paying their water bills.

We encourage you to take a closer look at the hard work DWSD is doing throughout our city. You'll see the impact we are making, and promise to make in the future, on every customer we serve. You have my deepest promise that we are Working Hard for You – now and in the future.

Sincerely,



A Message to Our Customers

Drinking water quality is important to our community and the region. The Detroit Water and Sewerage Department (DWSD) and the Great Lakes Water Authority (GLWA) are committed to meeting state and federal water quality standards including the Lead and Copper Rule. This 2018 Water Quality Report highlights the performance of GLWA and DWSD water professionals in delivering some of the nation's best drinking water.

Together, we are committed to protecting public health and maintaining open communication with the community about our drinking water.

To stay informed, we encourage you to register for water alerts via email at detroitmi.gov/DWSD. Our water quality standards are mandated by the Environmental Protection Agency (EPA) and the Michigan Department of Environment, Great Lakes, and Energy (EGLE).



West Outer Drive, Detroit

HOW WE PROVIDE WATER SERVICES TO YOU

The Great Lakes Water Authority (GLWA) treats drinking water and transports it to the City of Detroit's distribution system through transmission lines. The Detroit Water and Sewerage Department (DWSD) delivers the treated water to the community through more than 2,700 miles of water mains within the city to the service line of your home or business.

The system uses source water drawn from three intakes. Two source water intakes are located in the Detroit River: one to the north, near the inlet of Lake St. Clair, and one to the south, near Lake Erie. The third intake is located in Lake Huron.

The GLWA has operated and managed five water treatment plants since 2016. Four of the plants treat source water drawn from the Detroit River intakes. The fifth water treatment plant, located in St. Clair County, uses source water drawn from Lake Huron. Detroit customers are provided service from four plants that treat source water drawn from the Detroit River.



DID YOU KNOW?

DWSD OFFERS 5 EASY WAYS TO PAY*



MAIL



ONLINE



IN-PERSON



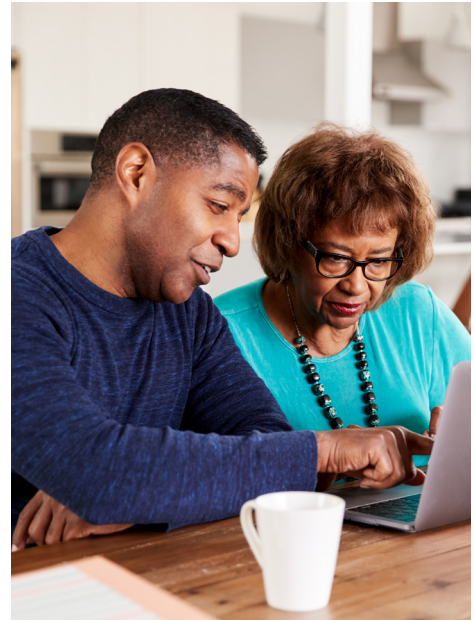
KIOSK



PHONE

Did you know there is help for you or a loved one?

If you or someone you know is unable to pay their water bill, DWSD is here to help. There is a path for every customer to avoid a water service interruption. DWSD offers the **10/30/50 Payment Plan** and **WRAP**, the Water Residential Assistance Program, and it partners with other government agencies and nonprofits that have financial assistance available. Visit www.detroitmi.gov/water or call **313-267-8000** to enroll in a program or inquire.



Did you know that if you and your neighbors clean above and around the catch basins (storm drains) on your street, especially after mowing the lawn or raking leaves, it can help reduce flooding?

Use rakes, brooms and shovels to place grass clippings, leaves, trash and other debris into the proper bins or bags. Do this not only near the catch basins, but safely halfway out into the street in front of your property. Help the seniors near you to do the same. Together, we can reduce street flooding in our neighborhoods.

Did you know because of innovation and new processes, most of the fire hydrants in the city are operational?

In partnership with the Detroit Fire Department, DWSD uses technology, including mobile apps, to inspect and track maintenance of the fire hydrants.

As of the end of 2018, more than 98% of the hydrants were working.

**MORE THAN
98 PERCENT
OF THE HYDRANTS**
WERE WORKING, AS OF THE END OF 2018

DWSD HAS REDUCED
WATER SERVICE
INTERRUPTIONS

44%
SINCE
2014

CAPITAL IMPROVEMENT PROGRAM



DWSD replaced the water main on Robson Street north of Grand River Avenue.

Over the next five years, DWSD is investing \$500 million through a Capital Improvement Program (CIP). These projects, which are the largest in decades, will help us maintain the city's water and sewer systems for future generations. The effort to upgrade Detroit's systems also reflects the city's mission to put more Detroiters to work.

The CIP's goal is to improve service delivery and quality of life in the neighborhoods by:

- Reducing water main breaks;
- Reducing street flooding and sewer system failures;
- Reducing future investment in new combined sewer overflow facilities (wet weather treatment);
- Increasing acres managed by green stormwater infrastructure;
- Coordinating with other public and private agencies to maximize dollars invested and minimize disruption from construction activity;
- Increasing job opportunities for Detroiters; and
- Upgrading and maintaining facilities, equipment and systems for effective operations.

25 OF WATER MAINS
MILES REPLACED IN 2018



173
LEAD SERVICE LINES
WERE REPLACED IN 2018



In 2018, DWSD started a Lead Service Line Replacement Program as part of its water main replacement projects.

Since the program launched in 2018, DWSD has upgraded 25 miles of water main, lined 22 miles of sewer collection piping and replaced 173 lead service lines. As part of a new neighborhood approach launched in summer 2018, DWSD began assessing the water and sewer systems by neighborhood, rather than by the number of water main breaks and basement backups which was a scattered approach across the city.

In 2018, DWSD assessed 75 miles of water main, including the fire hydrants and valves, and 85 miles of sewer collection piping in nearly 10 neighborhoods. In 2019, DWSD will begin construction of water and sewer upgrades, including green stormwater infrastructure, starting with Cornerstone Village on the eastside and

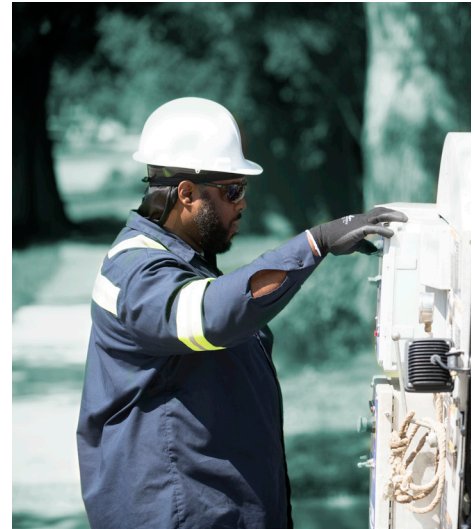


Innovation, improved maintenance program and a collaboration with the Detroit Fire Department have led to more than 98% of the fire hydrants working in Detroit.

North Rosedale Park on the westside.

With older housing in Detroit, it's possible the city has the most lead service lines of any in the Midwest, which is why the CIP includes full lead service line replacement. A service line is a pipe that takes water from the city's water main into your home or business. A good rule of thumb in Detroit is that if a house was built before 1950 it's likely to have a lead service line unless it was replaced at some point. Residential single family homes are the most common to have lead service lines because lead was only used for pipes that are 2-inches in diameter or less.

As part of its CIP, DWSD has chosen to replace full lead service lines when crews are on the street replacing the water main. This complies with the revised Michigan



DWSD has vastly improved its water and sewer systems maintenance programs including preventative maintenance pilot projects on water mains, catch basins, hydrants and sewer piping.

Lead and Copper Rule, which requires water utilities to remove full lead service lines at 5% per year unless an alternate schedule in an asset management plan is approved by EGLE (Environment, Great Lakes & Energy). DWSD started a Full Lead Service Line Replacement Program in 2018 where existing full lead service lines are replaced with copper with property owner/occupant permission. DWSD makes extraordinary efforts to communicate with customers prior to construction through door-to-door canvassing, letters, plus community and block club meetings. Residents will receive water pitchers, a six-month supply of filters as well as instructions for faucet flushing and aerator cleaning as precautionary measures during construction.

GREEN STORMWATER INFRASTRUCTURE

Green Stormwater Infrastructure (GSI) projects are continuing to appear in Detroit to help manage stormwater runoff from rain and snowmelt in a more environmentally friendly way. GSI is a way to handle stormwater using the natural processes of soils and plants by soaking up water where it falls before it can enter the city's combined sewer system. Reducing stormwater runoff with strategically placed GSI projects, such as bioretention areas and bioswales, has the added benefit of reducing street flooding.

DWSD continues to work with the Parks and Recreation Department with support from the General Services Department to integrate GSI in Detroit's parks. The goal is to help manage runoff from the parks and adjacent roads to help reduce street flooding. While managing stormwater runoff in a more natural way, GSI projects help beautify neighborhoods. DWSD also collaborates with the Detroit Land Bank Authority to utilize parcels that are now vacant to install green stormwater infrastructure. Most of the DWSD GSI projects, currently 15, are in the Upper Rouge Tributary, which is on the west side of the city.

One example: Viola Liuzzo Park, which was re-dedicated in September 2018, has three bioretention areas that include nine varieties of plants to help beautify the northwest Detroit neighborhood where the park is located. The bioretention areas are expected to retain an average of 280,000 gallons of stormwater annually and keep 710,000 gallons of stormwater from running off into the city's combined sewer system.

DETROIT CURRENTLY HAS

FIFTEEN

GREEN STORMWATER INFRASTRUCTURE PROJECTS

BUILT BY DWSD, WHICH MANAGE A TOTAL OF

24

MILLION GALLONS OF STORMWATER ANNUALLY.



UNDERSTANDING LEAD

When lead is present in water, it is primarily from corrosion of materials and components associated with service lines and home plumbing.

The water provided to DWSD customers contains a corrosion inhibitor, orthophosphate, to minimize lead release from lead service lines and other lead components. DWSD is responsible for providing high-quality drinking water, but cannot control the variety of materials used in plumbing components.

If present, elevated levels of lead can cause serious health and development problems, especially for pregnant women and young children. When your water has been sitting for several hours, you can minimize the potential for lead exposure by running water from your tap until the water is cold and then running the water for two more minutes before using for drinking or cooking. Always use cold water for drinking and cooking.

DWSD conducted Lead and Copper Rule sampling in 2016. The sampling results show that all the homes tested had lead levels below the Environmental Protection Agency (EPA) action level, which is 15 parts per billion (ppb). The Michigan Department of Environment, Great Lakes, and Energy (EGLE) certified that DWSD's 90th percentile for lead was 4 ppb, well below the EPA action level. In 2019, DWSD will conduct lead testing and the results will be published in this report in 2020.

If you are concerned about lead in your water, visit detroitmi.gov/leadsafe or call **313-964-9300**.

LEAD AND COPPER RULE

Through 2018, the federally mandated Lead and Copper Rule testing was required every three years. Data reported in this document is from 2016 and is still valid. In June 2018, the State of Michigan changed the testing method as well as how results will be reported, which is why results from the new 2019 test pool will appear to be elevated from 2016 and testing will be done every year versus every three years. DWSD wants to assure you this should not cause concern, since the testing and evaluation methods are different for 2016 and 2019. In Summer 2019, the Michigan Department of Environment, Great Lakes, and Energy (EGLE), Great Lakes Water Authority (GLWA), DWSD and other municipalities will share about the new testing method and what the community should expect.

For the latest results, see page 13.

WHERE'S YOUR WATER SERVICE LINE?

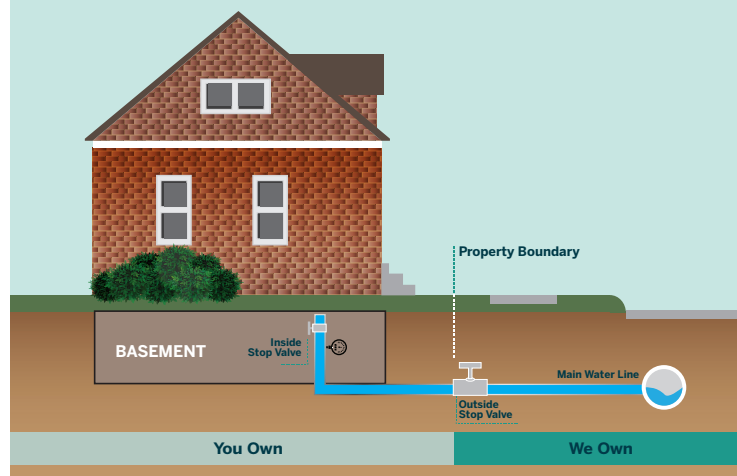
In most areas in Detroit, the water main is under the street. There are some areas where the water main is located under the right-of-way between the sidewalk and street. The service line that feeds water to your home or business comes from the water main to the meter inside your property.

WHO FIXES YOUR WATER SERVICE LINE?

Property owners are responsible for the water service line from the water meter to the stop box (turn-on/turn-off valve) near the sidewalk. DWSD is responsible for the portion from the stop box to the water main (see image below).

As of 2018, you may be eligible for a full service line replacement at DWSD's cost while the department is replacing the water main on your street if your service line is made of lead.

YOUR RESPONSIBILITY AND OURS THE WATER LINE FROM YOUR HOME



SUBSTANCES FOUND IN SOURCE WATER

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 materials and substances resulting from the presence of animal or 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 stormwater 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, which also can come from gas stations, urban stormwater runoff and septic systems; and

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

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

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

SOURCE WATER PROTECTION

Your source water comes from the Detroit River, situated within the Lake St. Clair, Clinton River, Detroit River, Rouge River and Ecorse River watersheds in the U.S., and parts of the Thames River, Little River, Turkey Creek and Sydenham watersheds in Canada.

The Michigan Department of Natural Resources, in partnership with the U.S. Geological Survey, DWSD and the Michigan Public Health Institute, performed a source water assessment in 2004 to determine the susceptibility of potential contamination in these watersheds. The susceptibility rating is on a seven-tiered scale from "very low" to "very high" based primarily on geologic sensitivity, water chemistry and contaminant sources.

The susceptibility of the 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 to meet drinking water standards.

The Great Lakes Water Authority (GLWA)-initiated source water protection activities include chemical containment, spill responses and a mercury reduction program. In 2016, Michigan Department of Environmental Quality (MDEQ), now the Department of Environment, Great Lakes, and Energy (EGLE), approved the GLWA Surface Water Intake Protection Program plan. The programs include the following seven elements: roles and duties of government units and water supply agencies, delineation of source water protection areas, identification of potential contaminant sources, management approaches for source water protection, contingency plans, siting of new sources and public participation.

For more information about the Source Water Assessment report, call GLWA at **313-926-8102**.

Key to the Detected Contaminants

> Greater Than	µmhos Microohms Measure of electrical conductance of water.
N/A Not Applicable	NTU Nephelometric Turbidity Units Measure of cloudiness of water.
ND Not Detected	pCi/L Picocuries Per Liter Measure of radioactivity.
ppm Parts Per Million (one in a million) The ppm is equivalent to milligrams per liter. A milligram = 1/1000 gram.	ppb Parts Per Billion (one in a billion) The ppb is equivalent to micrograms per liter. A microgram = 1/1000 gram.
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.
HAA5 Haloacetic Acids HAA5 is the total of bromoacetic, chloroacetic, dibromoacetic, dichloroacetic, and trichloroacetic acids. Compliance is based on the total.	RAA Running Annual Average The average of all analytical results for all samples during the previous four quarters.
LRAA Locational Running Annual Average The average of analytical results for samples at a particular monitoring location during the previous four quarters.	TT Treatment Technique A required process intended to reduce the level of a contaminant in drinking water.
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.	MRDL Maximum Residual Disinfectant Level The highest level of disinfectant allowed in drinking water. There is convincing evidence that additional of a disinfectant is necessary for control of microbial contaminants.
MCLG Maximum Contaminant Level Goal The level of contaminant in drinking water below which there is no known or expected risk to health.	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.
TTHM Total Trihalomethanes Total Trihalomethanes is the sum of chloroform, bromodichloromethane and bromoform. Compliance is based on the total.	

HEALTH CONCERNS

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, and 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 at **800-426-4791**.

The Great Lakes Water Authority (GLWA) voluntarily monitors monthly for the protozoans Cryptosporidium and Giardia. Samples collected at both the Belle Isle and the Southwest intakes contained one Giardia cyst each in March of 2018. Samples collected in July 2018 at the Southwest water intake contained one Cryptosporidium oocyst. The treated water at the Southwest water plant was then later tested and found not to contain cryptosporidium. All other

monthly untreated water samples collected in 2018 were absent for the presence of Cryptosporidium and Giardia.

Cryptosporidium is a microbial parasite found in surface water throughout the United States. Although Cryptosporidium can be removed by filtration, the most commonly used filtration cannot guarantee 100% removal. GLWA's monitoring of source water indicates the presence of these organisms. Current test methods do not enable the GLWA to determine if these organisms are dead or alive. Symptoms of infection include nausea, diarrhea and abdominal cramps. Most healthy persons can overcome the disease within a few weeks. However, immuno-compromised people (such as those with HIV/AIDS, undergoing chemotherapy or recent organ transplant recipients) are at a greater risk of developing a severe, life-threatening illness. Immuno-compromised persons should contact their doctor to learn about appropriate precautions to prevent infection. Cryptosporidium must be taken in through the mouth to cause disease and it may be passed by means other than drinking water.

REGULATED CONTAMINANTS

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	6/12/18	ppm	4	4	0.75	0.65-0.75	no	Erosion of natural deposit; Water additive, which promotes strong teeth; Discharge from fertilizer and aluminum factories.
Nitrate	6/12/18	ppm	10	10	0.43	0.34-0.41	no	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
Barium	5/16/17	ppm	2	2	0.01	0.01-0.01	no	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.

Disinfection Residual Monitoring in the Detroit Distribution System

Regulated Contaminant	Test Date	Unit	Health Goal MCLG	Allowed Level MCL	Highest Level Detected	Range of Detection	Violation	Major Sources in Drinking Water
Free Chlorine Residual	2018	ppm	4	4	0.84	0.53-0.85	no	Water additive used to control microbes.

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	2018	ppb	n/a	80	46.3	12-62	no	By-product of drinking water chlorination.
(HAA5) Haloacetic Acids	2018	ppb	n/a	60	15.4	5.4-19.7	no	By-product of drinking water chlorination.

Disinfectant By-Product Monitoring at the Waterworks Park Plant Finished Tap

Regulated Contaminant	Test Date	Unit	Health Goal MCLG	Allowed Level MCL	Highest Level RAA	Range of Quarterly Results	Violation	Major Sources in Drinking Water
Bromate	2018	ppb	0	10	0.7	0.0-2.8	no	By-product of drinking water ozonation.

Turbidity Monitored Every 4 Hrs 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
0.25 NTU	100%	no	Soil runoff

Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.

Special Monitoring

Contaminant	Test Date	Unit	MCLG	MCL	Highest Level Detected	Source of Contaminant
Sodium	6/12/18	ppm	n/a	n/a	6.36	Erosion of natural deposits.

These tables are based on tests conducted by GLWA in the year 2018 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 required special monitoring are presented in these tables.

Lead and Copper Monitoring at the Consumer's Tap in 2016

Data reported in this table is from 2016. For more information on the testing of Lead and Copper, please refer to page 7.

Regulated Contaminant	Test Date	Unit	Health Goal MCLG	Action Level AL	90 th Percentile Value*	Number of Samples Over AL	Violation	Major Sources in Drinking Water
Lead	2016	ppb	0	15	4	0	no	Corrosion of household plumbing system; Erosion of natural deposits.
Copper	2016	ppm	1.3	1.3	0.105	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.

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	0.65 ± 0.54	no	Erosion of natural deposits

UNREGULATED CONTAMINANTS

Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated monitoring is to assist EPA in determining the occurrence of unregulated contaminants in drinking water and whether future

regulation is warranted. Before EPA regulates a contaminant, it considers adverse health effects, the occurrence of the contaminant in drinking water, and whether the regulation would reduce health risk.

Unregulated Contaminants Monitored at the Plant Finished Taps

Regulated Contaminant	Test Date	Unit	Average Level Detected	Range of Detection	Health Advisory	MCLG	MCL	Source of Contaminant
Strontium	2015	ppb	106	98.7-124	4000	n/a	n/a	Erosion of natural deposits.
Total Chromium	2015	ppb	.28	0.21-0.42	n/a	100	100	Discharge from steel and pulp mills; Erosion of natural deposits.
Chromium +6	2015	ppb	.13	0.082-0.24	n/a	n/a	n/a	Discharge from steel and pulp mills; Erosion of natural deposits.
Vanadium	2015	ppb	.21	ND-0.66	n/a	n/a	n/a	Erosion of natural deposits.

Unregulated Contaminants Monitored in the Distribution System

Regulated Contaminant	Test Date	Unit	Average Level Detected	Range of Detection	Health Advisory	MCLG	MCL	Source of Contaminant
Strontium	2015	ppb	109	102-124	4000	n/a	n/a	Erosion of natural deposits.
Total Chromium	2015	ppb	.21	ND-0.45	n/a	100	100	Discharge from steel and pulp mills; Erosion of natural deposits.
Chromium +6	2015	ppb	.11	0.086-0.18	n/a	n/a	n/a	Discharge from steel and pulp mills; Erosion of natural deposits.
Vanadium	2015	ppb	.20	ND-0.53	n/a	n/a	n/a	Erosion of natural deposits.

LEVEL ONE ASSESSMENT

Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, waterborne pathogens may be present or that a potential pathway exists through which contamination may enter the drinking water system. Coliforms were found indicating the need to look for potential problems in water treatment or distribution. When this occurs, GLWA/DWSD are required to conduct an assessment to identify problems and to correct any problems that were found during these assessments.

During the past year, DWSD was required to conduct a Level 1 Assessment. The Level 1 Assessment was completed in July 2018. In addition, DWSD was required to take two corrective actions and completed these actions. The actions included re-training the water samplers on correct sterile technique and removing four sampling locations from service due to internal plumbing issues.

2018 CITY OF DETROIT TAP WATER MINERAL ANALYSIS

Parameter	Units	Max.	Min.	Avg.
Turbidity	NTU	0.20	0.03	0.09
Total Solids	ppm	179	79	132
Total Dissolved Solids	ppm	222	107	135
Aluminum	ppm	0.196	0.000	0.062
Iron	ppm	0.073	0.000	0.029
Copper	ppm	0.006	0.000	0.000
Magnesium	ppm	10.10	7.45	8.20
Calcium	ppm	34	25.9	28.4
Sodium	ppm	9.72	4.85	6.40
Potassium	ppm	1.36	0.90	1.10
Manganese	ppm	0.000	0.000	0.000
Lead	ppm	0.000	0.000	0.000
Zinc	ppm	0.00	0.00	0.00
Silica	ppm	2.9	0.08	2.0
Sulfate	ppm	32.1	18.7	25

Parameter	Units	Max.	Min.	Avg.
Phosphorus	ppm	0.59	0.0	0.36
Free Carbon Dioxide	ppm	16.6	0.0	6.9
Total Hardness	ppm	116	92	101
Total Alkalinity	ppm	80	62	72
Carbonate Alkalinity	ppm	0	0	0
Bi-Carbonate Alkalinity	ppm	80	48	71
Non-Carbonate Hardness	ppm	38	19	29
Chemical Oxygen Demand	ppm	5.8	0.0	1.8
Dissolved Oxygen	ppm	16.8	7.9	11.3
Chloride	ppm	15.3	8.5	10.7
Nitrate Nitrogen	ppm	1.0	0.0	0.23
Fluoride	ppm	0.84	0.35	0.64
pH	ppm	8.12	6.95	7.33
Specific Conductance @ 25 °C	ppm	272	208	226
Temperature	°C	26.0	1.1	12.7



**Water & Sewerage
Department**

This report is available on the
City of Detroit website at
detroitmi.gov/2018waterqualityreport

We welcome your comments and opinions
about this report. Please direct your comments
or questions to the DWSD Public Affairs Group.

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