



2013 Water Quality Report

Published in 2014

A message to our consumers

The Detroit Water and Sewerage Department (DWSD) provides its consumers with high quality water and is honored to provide this report to you. The Water Quality Report gives the sources of our water, lists the results of our tests, and contains important information about water and health.

The State and Environmental Protection Agency require us to test our water on a regular basis to ensure its safety. As a public utility, we are required to report to our customers annually on the quality of the drinking water we deliver to you. We met all the monitoring and reporting requirements for 2013.

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DWSD will immediately notify you if there is ever any reason for concern about our water. We are pleased to show you how we have surpassed water quality standards as mandated by the Environmental Protection Agency and the State of Michigan Department of Environmental Quality.

Communities Served by Detroit Water and Sewerage Department

DWSD supplies high-quality drinking water to approximately 40 percent of the state's population, serving 127 southeast Michigan communities. The system uses water drawn from three intakes. Two intakes are located in the Detroit River: one to the north near the mouth of Lake St. Clair and one to the south near Lake Erie. The third intake is located in Lake Huron. The Department has five water treatment plants. Four of the plants treat water drawn from the Detroit River intakes. The fifth water treatment plant located in St. Clair County uses water drawn from Lake Huron. Our Detroit customers are provided service from our four plants that treat water drawn from the Detroit River.

Lead

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. DWSD 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>.



Source water assessment

Your 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 Natural Resources and Environment in partnership with the U.S. Geological Survey, the DWSD, 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 contaminant sources. The 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.

DWSD has initiated source-water protection activities that include chemical containment, spill response, and a mercury reduction program. DWSD participates in a National Pollutant Discharge Elimination System permit discharge program and has an emergency response management plan. If you would like to know more information about this report or for a complete copy of this report please, contact the Water Quality Manager at **(313) 926-8102**.

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 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. 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.

City of Detroit Public Water System 2013 Regulated Detected Contaminants

REGULATED CONTAMINANT	TEST DATE	UNITS	HEALTH GOAL MCLG	ALLOWED LEVEL MCL	HIGHEST LEVEL DETECTED	RANGE OF DETECTION	VIOLATION	MAJOR SOURCES IN DRINKING WATER
INORGANIC CHEMICALS- ANNUAL MONITORING AT PLANT FINISHED TAP								
Fluoride	05/13/2013	ppm	4	4	0.71	0.58-0.71	no	Erosion of natural deposit; Water additive, which promotes strong teeth; Discharge from fertilizer and aluminum factories.
Nitrate	05/13/2013	ppm	10	10	0.69	0.38-0.69	no	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
Barium	6/09/2008	ppm	2	2	0.01	n/a	no	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
Selenium	6/09/2008	ppb	50	50	1.0	n/a	no	Discharge from petroleum and metal refineries; Erosion of natural deposits; Discharge from mines.
2013 DISINFECTION- BY- PRODUCTS MONITORING IN THE DISTRIBUTION SYSTEM								
REGULATED CONTAMINANT	TEST DATE	UNITS	HEALTH GOAL MCLG	ALLOWED LEVEL MCL	HIGHEST LEVEL LRAA	RANGE OF QUARTERLY RESULTS	VIOLATION	MAJOR SOURCES IN DRINKING WATER
Total Trihalomethanes (TTHM)	2013	ppb	N/A	80	33.4	2.2-39.9	no	By-product of drinking water chlorination
Haloacetic Acid (HAA5)	2013	ppb	N/A	60	14.2	2.0-20.5	no	By-product of drinking water chlorination
REGULATED CONTAMINANT	TEST DATE	UNITS	HEALTH GOAL MCLG	ALLOWED LEVEL MCL	HIGHEST LEVEL RAA	RANGE OF QUARTERLY RESULTS	VIOLATION	MAJOR SOURCES IN DRINKING WATER
Bromate	2013	ppb	0	10	0.7	ND-1.3	no	By-product of drinking water disinfection
2013 DISINFECTION RESIDUAL MONITORING IN THE DISTRIBUTION SYSTEM								
REGULATED CONTAMINANT	TEST DATE	UNITS	HEALTH GOAL MRDLG	ALLOWED LEVEL MRDL	HIGHEST LEVEL RAA	RANGE OF QUARTERLY RESULTS	VIOLATION	MAJOR SOURCES IN DRINKING WATER
Disinfectant Total Chlorine Residual	2013	ppm	4	4	0.83	0.47-0.99	no	Water additive used to control microbes
2013 VOLATILE ORGANIC CHEMICAL- MONITORING AT SPRINGWELLS PLANT FINISHED WATER TAP								
REGULATED CONTAMINANT	TEST DATE	UNITS	HEALTH GOAL MCLG	ALLOWED LEVEL MCL	HIGHEST LEVEL DETECTED	RANGE OF DETECTION	VIOLATION	MAJOR SOURCES IN DRINKING WATER
Xylene	11/12/2013	ppm	10	10	0.0009	ND-0.0009	no	Discharge from petroleum factories; Discharge from chemical factories
2013 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	MAJOR SOURCES IN DRINKING WATER
0.17 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.								
2013 MICROBIAL CONTAMINANTS – MONTHLY MONITORING IN THE DISTRIBUTION SYSTEM								
REGULATED CONTAMINANT	MCLG	MCL				HIGHEST % DETECTED IN ONE MONTH	VIOLATION	MAJOR SOURCES IN DRINKING WATER
Total Coliform Bacteria	0	Presence of coliform bacteria > 5% of monthly samples.				1.7	no	Naturally present in the environment.
E. Coli or Fecal Coliform 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 and animal fecal waste.

City of Detroit Public Water System

2013 Regulated Detected Contaminants Continued

2011 LEAD AND COPPER MONITORING AT THE CUSTOMER'S TAP								
REGULATED CONTAMINANT	TEST DATE	UNITS	HEALTH GOAL MCLG	ACTION LEVEL AL	90 TH PERCENTILE VALUE*	NUMBER OF SAMPLES OVER AL	VIOLATION	MAJOR SOURCES IN DRINKING WATER
Lead	2011	ppb	0	15	3.4	0	no	Corrosion of household plumbing system; Erosion of natural deposits
Copper	2011	ppm	1.3	1.3	0.065	0	no	Corrosion of household plumbing system; Erosion of natural deposits; leaching from wood preservatives.
* The 90 th percentile value means 90 percent of the homes tested have lead and copper levels below the given 90 th percentile value. If the 90 th 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.
2013 SPECIAL MONITORING								
CONTAMINANT	UNITS	MCLG	MCL	HIGHEST LEVEL DETECTED			SOURCE OF CONTAMINATION	
Sodium	ppm	N/A	N/A	5.93			Erosion of natural deposits	
These tables are based on tests conducted by DWSD in the year 2013 or the most recent testing done within the last five calendar years. DWSD conducts tests throughout the year only tests that show the presence of a substance or required special monitoring are presented in this table.								

Key to Detected Contaminants Tables

Symbol	Abbreviation	Definition/Explanation
MCLG	Maximum Contaminant Level Goal	The level of contaminant in drinking water below which there is no known or expected risk to health.
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.
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.
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.
mg/L	Milligrams per liter	A milligram = 1/1000 gram 1 milligrams per liter is equal to 1 ppm
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.
NTU	Nephelometric Turbidity Units	Measures the cloudiness of water.
ND	Not Detected	
TT	Treatment Technique	A required process intended to reduce the level of a contaminant in drinking water.
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.
TTHM	Total Trihalomethanes	Total Trihalomethanes is the sum of chloroform, bromodichloromethane, dibromochloromethane and bromoform. Compliance is based on the total.
LRAA	Locational Running Annual Average	
RAA	Running Annual Average	
n/a	not applicable	
>	Greater than	

2013 City of Detroit Tap Water Mineral Analysis

Parameter	Units	Max.	Min.	Avg.
Turbidity	N.T.U.	0.16	0.04	0.08
Total Solids	mg/L	181	129	151
Total Dissolved Solids	mg/L	168	114	138
Aluminum	mg/L	3.031	0.058	0.465
Iron	mg/L	0.670	0.000	0.174
Copper	mg/L	0.013	0.000	0.001
Magnesium	mg/L	8.51	7.23	7.83
Calcium	mg/L	35.1	24.5	27.7
Sodium	mg/L	7.84	4.95	5.78
Potassium	mg/L	1.12	0.85	0.95
Manganese	mg/L	0.003	0.000	0.000
Zinc	mg/L	0.0	0.0	0.0
Silica	mg/L	1.29	0.03	0.78
Sulfate	mg/L	31.19	21.07	27.49
Chloride	mg/L	15.00	9.00	10.74
Phosphorus	mg/L	0.40	0.19	0.30

Parameter	Units	Max.	Min.	Avg.
Free Carbon Dioxide	mg/L	10.88	1.46	6.82
Total Hardness)	mg/L	121	95	106
Total Alkalinity	mg/L	97	67	80
Carbonate Alkalinity	mg/L	0	0	0
Bi-Carbonate Alkalinity	mg/L	97	67	80
Non-Carbonate Hardness	mg/L	46	9	26
Chemical Oxygen Demand	mg/L	6.4	0.0	2.3
Dissolved Oxygen	mg/L	21.46	6.98	11.13
Ammonia Nitrogen	mg/L	0.10	0.00	0.01
Organic Nitrogen	mg/L	0.33	0.00	0.07
Nitrite Nitrogen	mg/L	0.00	0.00	0.00
Nitrate Nitrogen	mg/L	1.03	0.00	0.43
Fluoride	mg/L	0.87	0.00	0.60
pH		8.04	7.09	7.40
Specific Conductance @ 25 °C.	µmhos	278	198	231
Temperature	°C	25.0	2.2	14.7

Important tax lien information

Detroit water and sewer customers with a past due balance must pay their water and sewer bill, otherwise state law permits DWSD to place the amount of any unpaid water and sewer bill on the City of Detroit Property Tax Roll as a lien for collection purposes. DWSD has payment plan options available to assist customers. Please call (313) 267-8000 or visit any DWSD customer service center. Customers who are able to pay the past due balance in full within ten days of receipt of individual notification may do so online at www.dwsd.org.

Report running water

DWSD is committed to respond promptly to reports of running water in vacant buildings and or water main breaks. Citizens should call our 24-hour number (313) 267-7401, to report running water in or near vacant properties, or to report a water main break. Smart phone users may download the Detroit Delivers app from Google Play or online at www.dwsd.org.





2013 Water Quality Report

Detroit Water and Sewerage Department

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Detroit, Michigan 48226

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ATTENTION!

This is an important report on water quality and safety.

El Informe contiene información importante sobre la calidad agua en su comunidad.

Por favor, si esta información no es comprensible para usted, solicite a alguien que se la traduzca.



This report is available
on our website at
www.dwsd.org.

We welcome your
comments and opinions about
this report and will be happy
to answer any questions you
may have. Please direct
your comments or
questions to the

Public Affairs Group at:
(313) 964-9570
or you may email your
comments to:
public.affairs@dwsd.org

About water

The DWSD Speakers Bureau provides an invaluable, face-to-face opportunity for school students, community groups and others to learn about the quality and production of Detroit's drinking water. To schedule a speaker or a plant tour, call the Public Affairs Group at (313) 964-9570.

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, 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. The Environmental Protection Agency and Center for Disease Control 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.

Public participation

The Board of Water Commissioners meeting is held each month. There are also public hearings and meetings open to the public. To confirm dates and times or for information on other activities happening in the Department, please contact our Public Affairs Group at (313) 964-9477 or visit our website at www.dwsd.org.

Emergency

To report emergencies, such as running water, missing manhole covers, or water main breaks, call our 24-hour number at (313) 267-7401.