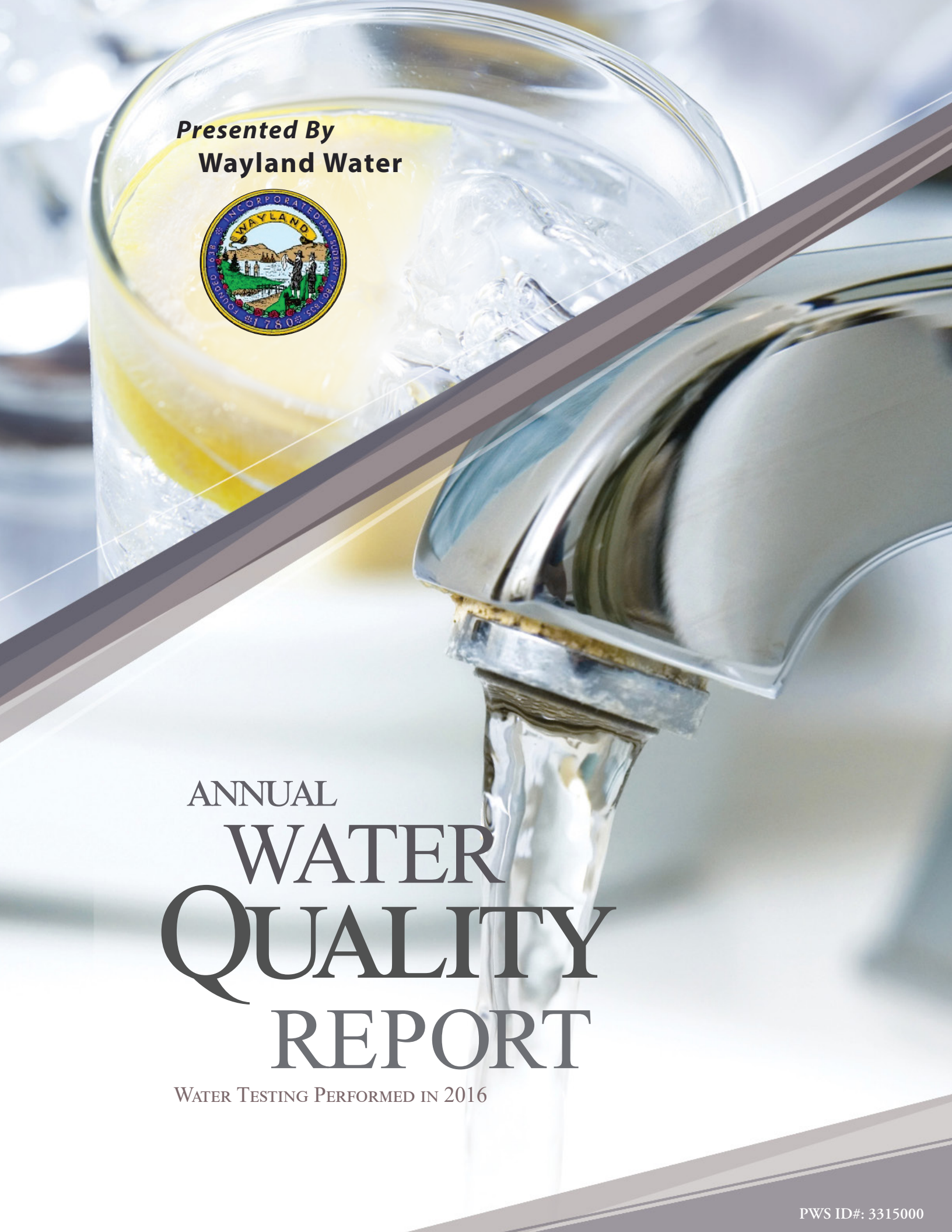


Presented By
Wayland Water

ANNUAL WATER QUALITY REPORT

Water Testing Performed in 2016

PWS ID#: 3315000

We've Come a Long Way

Once again we are proud to present our annual water quality report covering the period between January 1 and December 31, 2016. In a matter of only a few decades, drinking water has become exponentially safer and more reliable than at any other point in human history. Our exceptional staff continues to work hard every day—at any hour—to deliver the highest-quality drinking water without interruption. Although the challenges ahead are many, we feel that by relentlessly investing in customer outreach and education, new treatment technologies, system upgrades, and training, the payoff will be reliable, high-quality tap water delivered to you and your family.

Source Water Assessment Program

A Source Water Assessment Plan (SWAP) is now available at our office. This plan is an assessment of the delineated area around our listed sources through which contaminants, if present, could migrate and reach our source water. It also includes an inventory of potential sources of contamination within the delineated area and a determination of the water supply's susceptibility to contamination by the identified potential sources.

According to the Source Water Assessment Plan, our water system had a susceptibility rating of medium. If you would like to review the Source Water Assessment Plan, please feel free to contact our office during regular office hours.

Treatment Process

The Baldwin Pond Treatment Plant uses a process called Ultra Filtration. This type of filtration has several advantages over traditional water filtration:

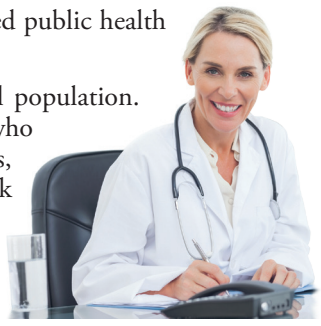
- Removes pathogens and turbidity
- Provides an absolute barrier against bacteria, viruses, and parasites
- Compared to conventional disinfection treatment, retains no deactivated pathogens in the water

This process involves a number of steps starting with ozonation. Raw water is pumped into the Treatment Plant from a combination of three groundwater wells. Once in the plant, the raw water is dosed with ozone to oxidize the iron and manganese that is naturally present in the groundwater. Next, potassium hydroxide is added to adjust the pH of the raw water and polyaluminum chloride to aide in flocculation of the iron and manganese particles. Then the raw water enters the ozone contact tank where the oxidation and flocculation takes place. After 70 minutes of travel time, the water enters one of two 500-micron prefilters to remove larger particles. When this process is complete, the raw water enters the Ultra Filtration Units. After filtration, the water travels to the clear well where sodium hypochlorite is added for disinfection and sodium fluoride is added to prevent tooth decay.

The Water Division continues to operate five (5) other wells that all have a similar chemical treatment process, without the filtration step. Water is pumped out of the ground at which point potassium hydroxide is added to adjust the pH. Sodium hypochlorite is added for disinfection and sodium fluoride is added to help prevent tooth decay.

Important Health Information

Manganese is a naturally occurring mineral found in rocks, soil, groundwater, and surface water. Manganese is necessary for proper nutrition and is part of a healthy diet, but it can have undesirable effects on certain sensitive populations at elevated concentrations. The U.S. EPA and MADEP have established public health advisory levels for manganese to protect against concerns of potential neurological effects.



Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised persons such as those with cancer undergoing chemotherapy, those who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants may be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The U.S. EPA/CDC (Centers for Disease Control and Prevention) 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 or http://water.epa.gov/drink/hotline.

Substances That Could Be in Water

To ensure that tap water is safe to drink, the Department of Environmental Protection (MADEP) and the U.S. Environmental Protection Agency (U.S. EPA) prescribe regulations limiting the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) and Massachusetts Department of Public Health (DPH) regulations establish limits for contaminants in bottled water that 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 these contaminants does not necessarily indicate that the water poses a health risk.

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. Substances 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, or wildlife;

Inorganic Contaminants, such as salts and metals, which can be naturally occurring or may 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 organic chemicals, which are by-products of industrial processes and petroleum production and may also come from gas stations, urban stormwater runoff, and septic systems;

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

More information about contaminants and potential health effects can be obtained by calling the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.

Community Participation

You are invited to participate in our public forum and voice your concerns about your drinking water. The Board of Public Works meets the 2nd and 4th Tuesdays of each month, beginning at 7 p.m., at the DPW Facility located at 66 River Road, Wayland, Mass.

Protecting Your Water

Bacteria are a natural and important part of our world. There are around 40 trillion bacteria living in each of us; without them, we would not be able to live healthy lives. Coliform bacteria are common in the environment and are generally not harmful themselves. The presence of this bacterial form in drinking water is a concern, however, because it indicates that the water may be contaminated with other organisms that can cause disease.

In 2016, the U.S. EPA passed a new regulation called the Revised Total Coliform Rule, which requires additional steps that water systems must take in order to ensure the integrity of the drinking water distribution system by monitoring for the presence of bacteria like total coliform and *E. coli*. The rule requires more stringent standards than the previous regulation, and it requires water systems that may be vulnerable to contamination to have in place procedures that will minimize the incidence of contamination. Water systems that exceed a specified frequency of total coliform occurrences are required to conduct an assessment of their system and correct any problems quickly. The U.S. EPA anticipates greater public health protection under the new regulation due to its more preventive approach to identifying and fixing problems that may affect public health.

Though we have been fortunate to have the highest-quality drinking water, our goal is to eliminate all potential pathways of contamination into our distribution system, and this new rule helps us to accomplish that goal.

QUESTIONS?

For more information about this report, or for any questions relating to your drinking water, please call Don Millette, Water Department Superintendent, at (508) 358-3672.

Water Conservation

You can play a role in conserving water and save yourself money in the process by becoming conscious of the amount of water your household is using and by looking for ways to use less whenever you can. It is not hard to conserve water. Here are a few tips:

- Automatic dishwashers use 15 gallons for every cycle, regardless of how many dishes are loaded. So get a run for your money and load it to capacity.
- Turn off the tap when brushing your teeth.
- Check every faucet in your home for leaks. Just a slow drip can waste 15 to 20 gallons a day. Fix it and you can save almost 6,000 gallons per year.
- Check your toilets for leaks by putting a few drops of food coloring in the tank. Watch for a few minutes to see if the color shows up in the bowl. It is not uncommon to lose up to 100 gallons a day from an invisible toilet leak. Fix it and you save more than 30,000 gallons a year.
- Use your water meter to detect hidden leaks. Simply turn off all taps and water-using appliances. Then check the meter after 15 minutes. If it moved, you have a leak.

Lead in Home Plumbing

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. We are responsible for providing high-quality drinking water, but we 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 www.epa.gov/lead.

Where Does My Water Come From?

The Wayland DPW Water Division operates eight (8) groundwater wells. The three (3) wells located at the Baldwin Pond site are part of the Baldwin Pond Water Filtration Facility. Listed below are the source names and their DEP ID numbers.

SOURCE NAME	DEP ID#	TYPE	LOCATION
Campbell Well	3315000-02G	gravel-packed	off of Campbell Rd.
Chamberlain Well	3315000-08G	gravel-packed	off of Moore Rd.
Meadowview Well	3315000-05G	gravel-packed	off of Oak Hill Rd.
Happy Hollow #1R	3315000-10G	gravel-packed	off of Old Conn Path
Happy Hollow #2R	3315000-11G	gravel-packed	off of Old Conn Path
Happy Hollow #3R	3315000-12G	gravel-packed	off of Old Conn Path
Baldwin Pond #1R	3315000-09G	gravel-packed	on Old Sudbury Rd.
Baldwin Pond #2	3315000-07G	gravel-packed	on Old Sudbury Rd.
Baldwin Pond #3	3315000-06G	gravel-packed	on Old Sudbury Rd.

Test Results

Our water is monitored for many different kinds of contaminants on a very strict sampling schedule. The information below represents only those substances that were detected; our goal is to keep all detects below their respective maximum allowed levels. The State recommends monitoring for certain substances less often than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

Fluoride addition was passed by Town meeting vote in 1999 to improve oral health in children. Our water system fluoride level is adjusted to an optimal level averaging 0.70 ppm. Fluoridation results are reported to the MassDPH, Office of Oral Health, on a monthly basis.

We participated in the 3rd stage of the U.S. EPA's Unregulated Contaminant Monitoring Rule (UCMR3) program by performing additional tests on our drinking water. UCMR3 benefits the environment and public health by providing the EPA with data on the occurrence of contaminants suspected to be in drinking water, in order to determine if the EPA needs to introduce new regulatory standards to improve drinking water quality. Contact us for more information on this program.

REGULATED SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Barium (ppm)	2016	2	2	0.032	0.011–0.032	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Chlorine (ppm)	2016	[4]	[4]	1.2	0.79–1.2	No	Water additive used to control microbes
Haloacetic Acids [HAAs] (ppb)	2016	60	NA	18.17	ND–56.7	No	By-product of drinking water disinfection
Nitrate (ppm)	2016	10	10	2.5	2.5–2.5	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
TTHMs [Total Trihalomethanes] (ppb)	2016	80	NA	33.67	9.0–81.7	No	By-product of drinking water disinfection

Tap water samples were collected for lead and copper analyses from sample sites throughout the community.

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AL	MCLG	AMOUNT DETECTED (90TH%TILE)	SITES ABOVE AL/TOTAL SITES	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2014	1.3	1.3	0.026	0/55	No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead (ppb)	2014	15	0	3	0/55	No	Corrosion of household plumbing systems; Erosion of natural deposits

Definitions

90th Percentile: Out of every 10 homes sampled, 9 were at or below this level.

AL (Action Level): The concentration of a contaminant that, if exceeded, triggers treatment or other requirements that a water system must follow.

LRAA (Locational Running Annual Average): The average of sample analytical results for samples taken at a particular monitoring location during the previous four calendar quarters. Amount Detected values for TTHMs and HAAs are reported as LRAAs.

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 a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

MRDL (Maximum Residual Disinfectant Level): The highest level of a 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. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

NA: Not applicable

ND (Not detected): Indicates that the substance was not found by laboratory analysis.

ppb (parts per billion): One part substance per billion parts water (or micrograms per liter).

ppm (parts per million): One part substance per million parts water (or milligrams per liter).

SMCL (Secondary Maximum Contaminant Level): SMCLs are established to regulate the aesthetics of drinking water like appearance, taste and odor.

TON (Threshold Odor Number): A measure of odor in water.

SECONDARY SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	SMCL	MCLG	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Aluminum (ppb)	2016	200	NA	0.007	ND–0.007	No	Erosion of natural deposits; Residual from some surface water treatment processes
Chloride (ppm)	2016	250	NA	148	56.6–148	No	Runoff/leaching from natural deposits
Color (Units)	2016	15	NA	ND	NA	No	Naturally occurring organic materials
Copper (ppm)	2016	1.0	NA	0.0009	ND–0.0009	No	Erosion of natural deposits
Fluoride (ppm)	2016	2.0	NA	0.79	0.64–0.79	No	Erosion of natural deposits; Water additive that promotes strong teeth; Discharge from fertilizer and aluminum factories
Iron (ppb)	2016	300	NA	16	ND–016	No	Leaching from natural deposits; Industrial wastes
Manganese (ppb)	2016	50	NA	98	12–98	No	Leaching from natural deposits
Odor (TON)	2016	3	NA	2	ND–2	No	Naturally occurring organic materials
pH (Units)	2016	6.5–8.5	NA	7.9	7.6–7.9	No	Naturally occurring
Sulfate (ppm)	2016	250	NA	30.1	16.9–30.1	No	Runoff/leaching from natural deposits; Industrial wastes
Total Dissolved Solids [TDS] (ppm)	2016	500	NA	376	240–376	No	Runoff/leaching from natural deposits
Zinc (ppm)	2016	5	NA	0.005	ND–0.005	No	Runoff/leaching from natural deposits; Industrial wastes

UNREGULATED SUBSTANCES [1]

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	TYPICAL SOURCE
Acetone (ppb)	2016	26	ND–26	NA
Bromodichloromethane (ppb)	2016	4.3	ND–4.3	By-product of drinking water disinfection
Bromoform (ppb)	2016	0.9	ND–0.9	By-product of drinking water disinfection
Chlorodibromomethane (ppb)	2016	3.8	ND–3.8	By-product of drinking water disinfection
Chloroform (ppb)	2016	2.7	ND–2.7	By-product of drinking water disinfection
Nickel (ppm)	2016	0.002	ND–0.002	NA
Sodium (ppm)	2016	62	23.5–62	Naturally occurring: Runoff from use of salt on roadways

UNREGULATED CONTAMINANT MONITORING RULE - PART 3 (UCMR3) [2]

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	TYPICAL SOURCE
1,4-Dioxane (ppb)	2014	0.09	0.08–0.09	Used as a solvent, cleaning agent, chemical stabilizer, surface coating, adhesive agent, and an ingredient in chemical manufacture
Chlorate (ppb)	2014	220	58–220	By-product of drinking water disinfection
Chlorodifluoromethane [HCFC-22] (ppb)	2014	640	420–640	A manufactured chemical historically used as a refrigerant and as an intermediate in the production of fluoropolymers
Chromium [Total] (ppb)	2014	0.27	0.22–0.27	NA
Chromium-6 [3] (ppb)	2014	0.20	0.04–0.20	NA
Strontium (ppb)	2014	170	120–170	NA

[1] Unregulated contaminants are those for which the U.S. EPA has not established drinking water standards. The purpose of monitoring unregulated contaminants is to assist the EPA in determining their occurrence in drinking water and whether future regulation is warranted.

[2] As part of its UCMR3 testing, the EPA is examining the prevalence of these contaminants in the U.S. drinking water supplies and at what levels they occur.

[3] Currently all water systems test for total chromium. In other words, they test for chromium in all of its forms (i.e. chromium-6).