



## City of Rochester Dept of Public Works

45 Old Dover Road  
Rochester, NH 03867  
Phone: (603) 332-4096  
Fax: (603) 335-4352

# Memo

To: Public Works and Buildings Committee  
From: Peter C. Nourse, PE  
Director of City Services  
Date: May 10, 2018  
Subject: Public Works and Buildings Committee  
Meeting Thursday May 17, 2018

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There will be a Public Works and Buildings Committee Meeting on **May 17, 2018 at 7:00 PM. *This meeting will be held in Council Chambers, at City Hall.***

### AGENDA

1. Approve Minutes of Regular Meeting of April 19<sup>th</sup>, 2018 Meeting
2. Public Input
3. GSBP – Water Loop
4. Community Center Alarm Panel Project
5. DPW Building
6. Onsite Septic System – Prior Approval Status
7. CCR- Attached Water Quality Report
8. Project Updates  
Whitehouse Road  
Rt. 125 Pedestrian Bridge  
Paving
9. Other
10. Non Public – RSA 91-A:3,II(e) Consideration of the acquisition, sale or lease of real or personal property which, if discussed in public, would likely benefit a party or parties whose interest are averse to those of the general public.





# Water Quality Report

## City of Rochester, NH

Water Testing Performed in 2017  
Prepared by the Rochester Water Treatment Facility  
PWS ID: NH2001010

*“Water is the best of all things.”*

*- Pindar, the ancient Greek poet*

Berry River Dam



# Drinking Water Sources

The City of Rochester consumed approximately 740 million gallons of drinking water in 2017. The surface water treatment facility is our primary supply, which draws from the Rochester Reservoir. Water is diverted from the Berry River watershed and stored in both the reservoir and Round Pond. The City also produces drinking water from the Cocheco well treatment plant. The distribution system supplies potable water to every tap and hydrant and consists of approximately 120 miles of water main, three water storage tanks, six water booster stations and approximately 8,000 service connections.

The City of Rochester operates the surface water filtration facility 24 hours per day, seven days per week. Our operators are required to maintain certifications and participate in training programs. Our two water treatment facilities are capable of treating approximately 5.5 million gallons of water per day. The treatment process at the surface water plant removes impurities from the water through oxidation, coagulation, flocculation, settling and filtration. Water then flows by gravity into the distribution system to your home or business. Treatment at the well consists of aeration to remove dissolved carbon dioxide and is pumped from the site into the distribution system. Both facilities add chlorine for disinfection, fluoride to promote strong teeth, sodium bicarbonate to increase the alkalinity, and blended phosphate for corrosion control.

Raw surface water quality fluctuates seasonally, with turbidity and color averaging 1.5NTU and 40ptcu; TOC from 4-7mg/l; and pH from 5.5 to 6.5. Raw groundwater quality, specifically dissolved carbon dioxide and manganese, fluctuates based on withdrawal rates.



Tufts Dam

# How's My Water?

From source to tap, the City of Rochester is committed to providing our customers with the highest quality drinking water that meets or exceeds state and federal requirements. We will continue to work on your behalf to ensure delivery of a quality product. Throughout 2017 we conducted more than 2250 tests for over 175 drinking water compounds and sampled continuously throughout the distribution system.

Our mission as a responsible public water system is to deliver the best-quality drinking water and reliable service at an economical cost. We rely on instrumentation, equipment and training, along with communication from our customers, for successful operations.

The water treatment facility operates at or below projected O&M costs, due to the skill, planning, effort, and training of our innovative and dedicated staff. Maintenance and efficiency remain a primary focus for the staff, who are invested in the customers, department, and each other.

2017 marked our triennial lead and copper sampling program which is taken directly from customers' homes. As seen at the end of this report, the City of Rochester water system has demonstrated a successful corrosion control program that protects human health and the integrity of public and private water piping.

Aging infrastructure presents challenges to drinking water safety, and continual improvement is needed to maintain the quality of life we desire for today and for the future. This year we continued efforts to improve the quality and condition of our water distribution system, focusing on directional water main and hydrant flushing, valve exercising, customer engagement, and increased proactive sampling. We continued our water main replacement program, repaired service and distribution leaks, and added Asset Management and GIS to our maintenance toolbox. Upgraded lab instrumentation helped enhance treatment optimizations.

Significant projects planned for 2018 include a hydrosolids disposal study, control system upgrades, pump station improvements, and expanded watershed sampling.

During April, the department hosted our first New Hampshire Water Works Technical Meeting since construction of the original treatment plant, which focused on showcasing the facility and included presentations on the history of the water system, drought resiliency, GIS, and watershed management. Our continued outreach programs included distribution of household hazardous waste flyers and tours with Spaulding High School students, water utilities, and local residents.

As New Hampshire's delegate for the American Water Works Association, our chief operator joined other industry representatives nationwide to advocate for drinking water resources during the Water Matters week of March of 2017 in Washington, DC.

Our water system was featured on the cover of the NEWWA December Journal, which highlighted water system management and technology. (<http://www.nxtbook.com/naylor/NEWQ/NEWQ0417/>)

When considering the high value we place on water, it is truly a bargain to have water service that protects public health, fights fires, supports businesses and the economy, and provides us with the high-quality of life we enjoy. Your water is a valuable, plentiful, and cost effective resource.

Water is Worth It!



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## Water Quality Monitoring & Sourcewater Assessment

Water is one of the world's most precious resources and we take seriously the integrity and conservation of our supply. The NH Department of Environmental Services (DES) has prepared a Source Water Assessment Report for the source serving our community, assessing the source's vulnerability to contamination. The results of the assessment prepared on 10/29/02, are as follows: Berrys River received 1 high susceptibility rating, 3 medium susceptibility ratings and 8 low susceptibility ratings. Source water assessment information and comprehensive water quality data may be obtained from the Water Department, please call 603-335-4291 for more information or visit NH Department of Environmental Services Drinking Water and Groundwater Bureau web site at: <http://des.nh.gov/organization/divisions/water/dwgb/index.htm>

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 United States Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

We continually refine and advance water treatment techniques in response to new regulations and our duty to provide safe and clean water for our customers. This requires us to perform extensive water sample collection and analysis for many different waterborne substances including: pH, Color, Turbidity, Coliform, Cryptosporidium, Total Organic Carbon, Disinfection Byproducts (TTHM/HAA5), Lead and Copper, Iron, Manganese, Nitrates, Volatile/Synthetic Organic and Inorganic Chemicals, and Alkalinity.





Tufts Reservoir

## Health Information

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 EPA's Safe Drinking Water Hotline 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 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 organic chemicals, 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**, can be naturally occurring or be the result of the 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 United States Food and Drug Administration (FDA) regulation establishes limits for contaminants in bottled water that must provide the same protection for public health.

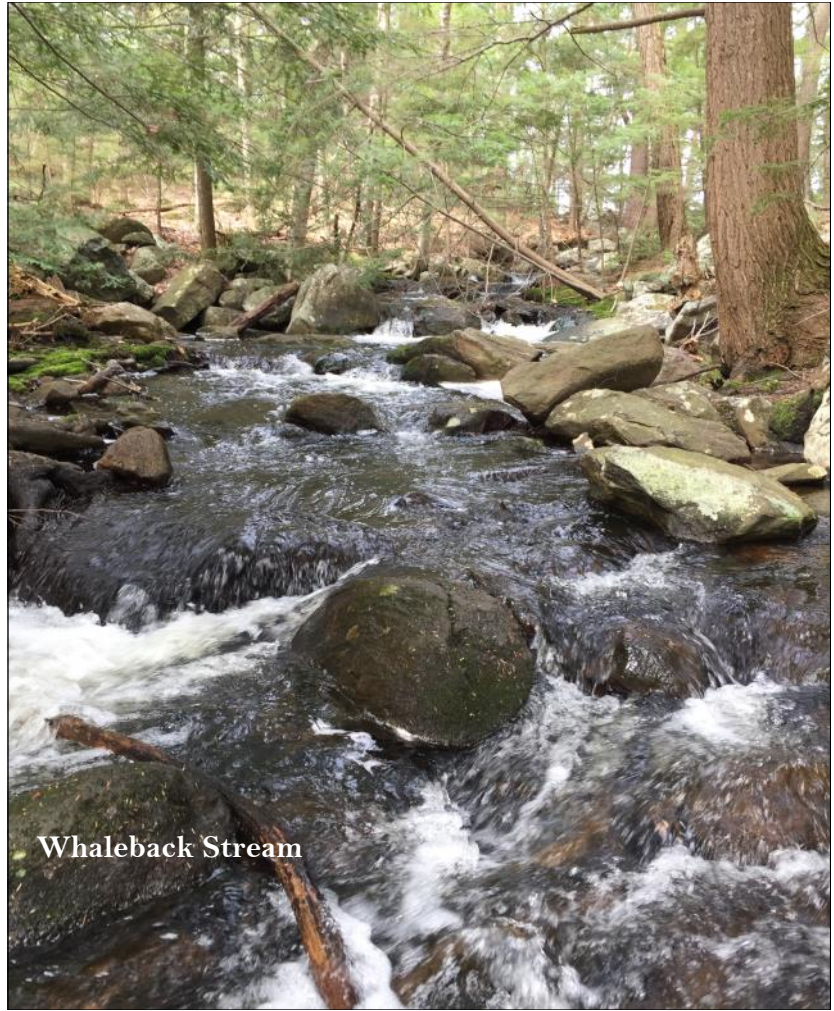
Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised persons, such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants 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 (1-800-426-4791).

# Tap vs. Bottled

Thanks in part to aggressive marketing, the bottled water industry has successfully convinced us all that water purchased in bottles is a healthier alternative to tap water. However, according to a four-year study conducted by the Natural Resources Defense Council, bottled water is not necessarily cleaner or safer than most tap water. In fact, about 25 percent of bottled water is actually just bottled tap water (40 percent, according to government estimates).

The Food and Drug Administration is responsible for regulating bottled water, but these rules allow for less rigorous testing and purity standards than those required by the U.S. EPA for community tap water. For instance, the high mineral content of some bottled water makes them unsuitable for babies and young children. Furthermore, the FDA completely exempts bottled water that's packaged and sold within the same state, which accounts for 70 percent of all bottled water sold in the United States.

People spend 10,000 times more per gallon for bottled water than they typically do for tap water. If you get your recommended eight glasses a day from bottled water, you could spend up to \$1,400 annually. The same amount of tap water would cost about 49 cents. Even if you installed a filter device on your tap, your annual expenditure would be far less than what you'd pay for bottled water. For a detailed discussion on the NRDC study results, check out their Web site at [www.nrdc.org/water/drinking/bw/exeum.asp](http://www.nrdc.org/water/drinking/bw/exeum.asp).



Whaleback Stream

## We'd like to thank all of our sample site hosts!

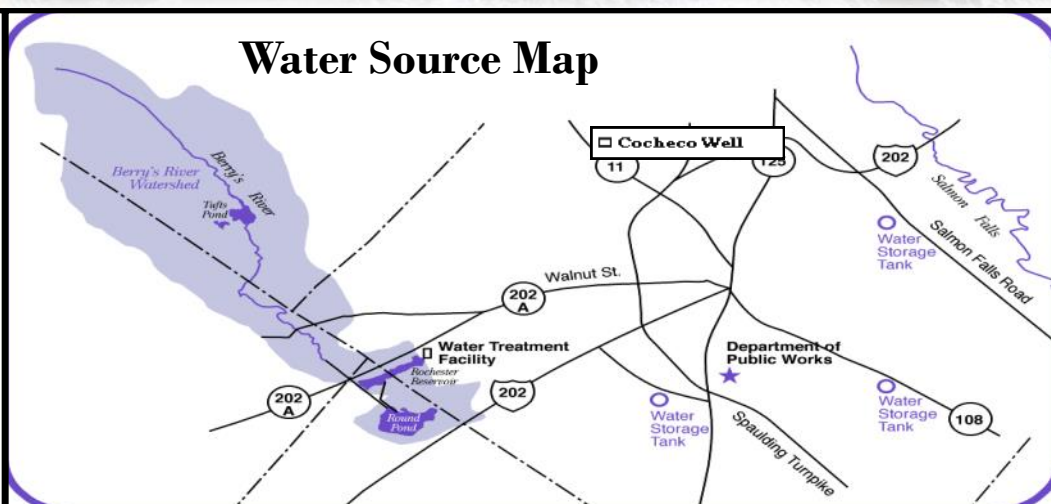
Burger King, McDonald's on North Main Street, Holiday Inn, Shell Station On Route 11, Nantucket Beadboard, Tara Estates, Community Center, Rochester Post Office, City Hall, Blue Seal Feeds, Subway on North Main Street, Dunkin' Donuts on Washington Street, Public Works, Cumberland Farms on Knight Street, Care Pharmacy, Granite State Glass, Skyhaven Airport, Rochester Public Library, Citi Financial, Pug Life Smoke & Vape, Dunkin' Donuts on Highland Street, Cumberland Farms on Highland Street, Liberty Research, Gonic Post Office, 125 RV & Marine, and Holy Rosary Credit Union.





Whaleback Impoundment

**City of Rochester, NH**  
**Water Treatment Facility**  
 64 Strafford Road  
 Rochester, NH 03867  
 PWS ID: NH2001010  
 Owner: Peter Nourse  
 Owner's Rep.: Michael Bezanson  
 Primary Operator: Ian Rohrbacher  
 Phone: 603-335-4291 (M-F 7am-3pm)  
 Fax: 603-335-9286  
 Correspondence: 45 Old Dover Road  
 E-mail: [ian.rohrbacher@rochesternh.net](mailto:ian.rohrbacher@rochesternh.net)  
<http://www.rochesternh.net>



## Questions or Concerns

If you are interested in a tour of the facilities or have questions on water quality and our treatment and supply systems, please call Ian Rohrbacher, Chief Operator, at 335-4291 Monday through Friday 7:00am to 3:00pm. We will be pleased to answer all of your questions.



# Water Quality Results for 2017

This table lists all drinking water contaminants we detected during the 2017 calendar year. The presence of these contaminants in the water does not necessarily indicate that the water poses a health risk. Unless otherwise noted, the data presented in the table is from testing done January 1 through December 31, 2017. The state requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Some of the data, though representative of the water quality, is more than one year old.

*Finished water production typically enters the distribution system at less than 0.07 NTU, 0ptcu, <1.9mg/l TOC, 7.3 pH, 1.60 mg/l free chlorine, 0.03 mg/L manganese, and a hardness of 20-30 mg/L.*

Detected Analyte / Contaminant	Our Water	MCL	MCLG	Meets Limits?	Typical Source of Contamination	Health Effects
Microbiological Contaminants						
E. coli Bacteria	0	0	0	Y	Human and animal fecal waste	E.coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Human pathogens in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a greater health risk for infants, young children, the elderly, and people with severely compromised immune systems.
Turbidity (NTU)	0% exceedence Avg: 0.066 Max: 0.132	TT (0.3)	N/A	Y	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.
Total Organic Carbon (TOC, mg/L)	Avg: 2.3 Range: 1.7-2.8	TT	N/A	Y	Naturally present in environment	Total organic carbon (TOC) has no health effects. However, total organic carbon provides a medium for the formation of disinfection byproducts. These byproducts include trihalomethanes (THMs) and haloacetic acids (HAAs). Drinking water containing these byproducts in excess of the MCL may lead to adverse health effects, liver or kidney problems, or nervous system effects, and may lead to an increased risk of getting cancer.
Radioactive Contaminants						
Compliance Gross Alpha(pCi/L)-(Cocheco Well)	1.2	15	0	Y	Erosion of natural deposits.	Certain minerals are radioactive and may emit a form of radiation known as alpha radiation. Some people who drink water containing alpha emitters in excess of the MCL over many years may have an increased risk of getting cancer.
Compliance Gross Alpha(pCi/L)-(Surface Water)	0.6			Y		
Uranium(ug/L)-(Cocheco Well)	0.1	30	0	Y	Erosion of natural deposits.	Some people who drink water containing uranium in excess of the MCL over many years may have an increased risk of getting cancer and kidney toxicity.
Uranium(ug/L)-(Surface Water)	ND			Y		
Combined Radium 226+228 (pCi/L)-(Cocheco Well)	0.7	5	0	Y	Erosion of natural deposits.	Some people who drink water containing radium 226 or 228 in excess of the MCL over many years may have an increased risk of getting cancer.
Combined Radium 226+228 (pCi/L)-(Surface Water)	0.6			Y		
Inorganic Contaminants						
Chlorine (ppm)	0.99	MRDL=4	MRDLG=4	Y	Water additive used to control microbes	Some people who use water containing chlorine well in excess of the MRDL could experience irritating effects to their eyes and nose. Some people who drink water containing chlorine well in excess of the MRDL could experience stomach discomfort.
(Surface Water Plant ppm range)	0.94-1.90			Y		
(Cocheco Well ppm range)	0.21-1.70			Y		
Copper (2017) (mg/L)*	0.128	1.3mg/L (AL)	1.3	Y	Corrosion of household plumbing systems; 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.
Lead (2017) (ppb)**	2	15ppb (AL)	0	Y	Corrosion of household plumbing systems; Erosion of natural deposits	(15 ppb in more than 5%) 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.
Barium (mg/L) - (Cocheco Well)	0.0053	2	2	Y	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits	Some people who drink water containing barium in excess of the MCL over many years could experience an increase in their bloodpressure.
Barium (mg/L) - (Surface Water)	0.0050					
Iron (mg/L) - (Cocheco Well)	0.22	0.3 (SMCL)	N/A	Y	Naturally occurring, corrosion of cast iron pipes	Water could be rusty color; sediment; metallic taste; reddish or orange staining
Iron (mg/L) - (Surface Water)	<0.1					
Manganese (mg/L) - (Cocheco Well)	0.0993	0.05 (SMCL)	N/A	Y	Erosion of natural deposits	Water could be black to brown color; black staining; bitter metallic taste
Manganese (mg/L) - (Surface Water)	<0.001					
Sodium (mg/L) - (Cocheco Well)	13.2	NONE	N/A	NA	Natural sources; runoff from use as salt on roadways; by-product of treatment process	
Sodium (mg/L) - (Surface Water)	22.7					
Nickel (mg/L) - (Cocheco Well)	0.0015	NA	N/A	NA	Erosion of natural deposits; runoff from orchards, power plants, metal factories, waste incinerators	Monitoring required (MCL and MGL were removed from State/Federal regulations)
Nickel (mg/L) - (Surface Water)	<0.001					
Zinc (mg/L) - (Cocheco Well)	0.0102	5 (SMCL)	N/A	Y	Erosion of natural deposits, leaching from plumbing materials	Metallic Taste
Zinc (mg/L) - (Surface Water)	<0.001					
Chloride (mg/L) - (Cocheco Well)	27	250 (SMCL)	N/A	Y	Runoff from road de-icing, use of inorganic fertilizers, landfill leachates, septic tank effluents, animal feeds, industrial effluents, irrigation drainage, and seawater intrusion in coastal areas	
Chloride (mg/L) - (Surface Water)	12					



# Water Quality Results for 2017

Detected Analyte / Contaminant	Our Water	MCL	MCLG	Meets Limits?	Typical Source of Contamination	Health Effects
Fluoride (mg/L) - (Cocheco Well)	0.57	4	4	Y	Erosion natural deposits; additive to promote strong teeth.	Your public water supply is fluoridated. According to the Centers for Disease Control and Prevention, if your child under the age of 6 months is exclusively consuming infant formula reconstituted with fluoridated water, there may be an increased chance of dental fluorosis. Consult your child's health care provider for more information.
Fluoride (mg/L) - (Surface Water)	0.73					
Nitrate (mg/L) - (Cocheco Well)	<0.2	10	10	Y	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits	(5 ppm through 10ppm) Nitrate in drinking water at levels above 10 ppm is a health risk for infants of less than six months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant, you should ask for advice from your health care provider.  (Above 10 ppm) Infants below the age of six months who drink water containing nitrate in excess of the MCL could become seriously ill and, if untreated, may die. Symptoms include shortness of breath and blue baby syndrome.
Nitrate (mg/L) - (Surface Water)	<0.2					
Nitrite (mg/L) - (Cocheco Well)	<0.2	1	1	Y	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits	Infants below the age of six months who drink water containing nitrite in excess of the MCL could become seriously ill, and if untreated, may die. Symptoms include shortness of breath and blue baby syndrome.
Nitrite (mg/L) - (Surface Water)	<0.2					
Sulfate (mg/L) - (Cocheco Well)	5	250 (SMCL)	N/A	Y	Natural sources	Salty Taste
Sulfate (mg/L) - (Surface Water)	25					
Raw Cryptosporidium (Oocysts/L)	0	NA	NA	NA	The public water supply is currently engaged in a 24 month sample schedule for cryptosporidium. Results for 2017 showed concentrations of 0 cysts/L in discrete samples. Sampling will continue through 2018.	
Volatile Organic Contaminants						
TTHMs [Total trihalomethanes] (ug/L)***	Highest Avg: 54 Range: 0.5-110	80ug/L	N/A	Y	By-product of drinking water chlorination	Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer.
HAA5 [Haloacetic Acids] (ug/L)***	Highest Avg: 49 Range: 1-85	60ug/L	N/A	Y	By-product of drinking water chlorination	Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer.
Synthetic Organic Contaminants (including Pesticides and Herbicides)						
No Detects	ND	N/A	N/A	Y	N/A	
Assessments						
During the past year we were required to conduct the following Assessment(s)	Number of assessments required	Number of assessments completed	Number of corrective actions required	Number of corrective actions completed	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 distribution system. We found coliforms indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct assessment(s) to identify problems and to correct any problems that were found during these assessments.	
RTCR - Level I	1	1	0	NA	During the past year we were required to conduct 1 Level I assessment. We completed 1 Level I assessment. In addition, we were required to take 1 corrective actions and we have completed 1 of these actions.	
Violations						
Violation	Date of violation	Explain violation		Length of violation	Action taken to resolve	Health Effects (Env-Dw 804-810)
Public notice	3/27/2017	Public Notice Rule Violation due to delayed notification of TTHM exceedence while under appeal		3 months	Public Notice was included in the 2017 CCR	NONE
Unregulated Contaminants (UCMR3)						
Analyte	Average (Range)	Reporting Detection Limit	What is the Unregulated Contaminant Monitoring Rule?			
Chromium (ug/L)	0.3 (0.2-0.4)	0.2	Unregulated contaminants are those for which the EPA has not established drinking water standards. The purpose of unregulated contaminants monitoring is to assist the EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted. The 1996 amendments to the Safe Drinking Water Act (SDWA) require that once every five years, the U.S. Environmental Protection Agency (EPA) issue a new list of no more than 30 unregulated contaminants to be monitored by public water systems (PWSs).			
Strontium (ug/L)	27.3 (19.3-42.3)	0.3				
Chromium VI (ug/L)	0.07 (0.04-0.10)	0.03				
Chlorate (ug/L)	120 (70-160)	20				
Perfluorinated Chemicals (PFCs)						
Analyte	Result	PFCs are a family of man-made compounds that do not naturally occur in the environment. They have a large number of industrial uses and are found in many commercial products because of their properties to resist heat, oil, grease and water.				
Perfluorohexanoic Acid (ug/L)	7.1	On May 19, 2016 the U.S. Environmental Protection Agency (USEPA) issued drinking water lifetime health advisories for two PFCs, perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS). After a review of USEPA's information, on May 31, 2016 NHDES filed an emergency rule to establish the health advisories as Ambient Groundwater Quality Standards (AGQS). NHDES set three groundwater standards: 70 parts per trillion (ppt) for PFOA, 70 ppt for PFOS and 70 ppt for PFOA and PFOS combined, where the chemicals are found together. After completing the regular rulemaking process, these rules became permanent on October 22, 2016. In response, the City of Rochester Water Department sampled for the "Full List" of 22 PFC compounds which identified a single detect present in finished water.				



# Water Quality Results for 2017

## Footnotes:

\* Copper content in the treated water prior to entering the distribution system is <0.001mg/L from surface water and <0.010mg/L from groundwater . Corrosion of household plumbing contributes to the higher average.

\*\* 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. This contaminant is tested for once every three years, on the corresponding dates per regulation. The next monitoring period is 2020. This water system is responsible for high quality drinking water, but can not control the variety of materials used in your plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing cold water your tap for at least 30 seconds before using water for drinking or cooking. Do not use hot water for drinking and cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at <http://water.epa.gov/drink/info/lead/index.cfm>.

\*\*\* For TTHM and HAA5 results it is possible to get a slightly higher level at one site and still be within MCL range. This level is derived from samples taken at 4 locations, four times a year and is a running annual average of all TTHM concentrations.

## Abbreviations

**MCLG** – Maximum Contaminant Level Goal, or the level of a contaminant in drinking water below which there are no known or expected health risks. **MCL** – Maximum contaminant level, the highest level of a contaminant that is allowed in drinking water. **AL** - Action level, or the concentration of a contaminant which, when exceeded, triggers treatment or other requirements which a water system must follow. **TT** – Treatment technique, or required process intended to reduce the level of a contaminant in drinking water. **MRDLG** – Maximum residual disinfectant level goal or the level of drinking water disinfectants below which there is no known or expected health risk. **MRDL** – Maximum residual disinfectant level or the highest level of a disinfectant allowed in drinking water. **NA** – not applicable, **ND** – none detected, **NR** – not regulated, **NTU** – Nephelometric Turbidity Units, **ppm** – parts per million, **ppb** – parts per billion, **ppt**- parts per trillion, **ppq**- parts per quadrillion, **MFL** – million fibers per liter, **pCi/L** – pico curies per liter, a measurement of radioactivity.

## Definitions:

**Radon** – EPA sets drinking water standards and has determined that radon is a health concern at certain levels of exposure. Radon is a naturally occurring radioactive contaminant that occurs in groundwater. It is a gas and is released from water into household air during water use. Radon has been found in epidemiology studies to cause lung cancer in humans at high exposure levels. At lower exposure, the risk of lung cancer is reduced. The City of Rochester is supplied by surface water and groundwater from a gravelly sand aquifer. High levels of radon are typically associated with deep bedrock wells.

**Turbidity** is a measure of the cloudiness of the water. We monitor it because it is a good indicator of water quality and the effectiveness of filtration. High Turbidity can hinder the effectiveness of disinfectants.

**Total Trihalomethanes** – (TTHM) Some people who drink water containing TTHM in excess of the MCL over many years experience problems with their liver, kidneys or central nervous system and may have an increased risk of getting cancer.

**Haloacetic Acids**- (HAA5) Some people who drink water containing HAA5 in excess of the MCL over many years have an increased risk of getting cancer.

**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. This water system is responsible for high quality drinking water, but can not control the variety of materials used in your plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing cold water from your tap for at least 30 seconds before using water for drinking or cooking. Do not use hot water for drinking and cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at <http://water.epa.gov/drink/info/lead/index.cfm>



Oxbow Reservoir