

Annual Drinking Water Quality Report for 2011

INTRODUCTION

To comply with State regulations, the City of Rome Bureau of Water will be annually issuing a report describing the quality of your drinking water. The purpose of this report is to raise your understanding of drinking water and awareness of the need to protect our drinking water sources. Last year, your tap water met all State drinking water health standards. We are proud to report that our system did not violate a maximum contaminant level or any other water quality standard. This report provides an overview of last year's water quality. Included are details about where your water comes from, what it contains, and how it compares to State standards.

If you have any questions about this report or concerning your drinking water, please contact Frank Tallarino, Commissioner of Public Works at 336-6000, or Tom Andrews, Chief Water Operator at 339-7777. We want you to be informed about your drinking water. Copies of this report will be available upon request at the City Clerk's Office at the Rome City Hall. In addition, the report will be available on the City's website at <http://www.rome-ny.gov>.

WHERE DOES OUR WATER COME FROM?

In general, 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 activities. Contaminants that may be present in source water include: microbial contaminants; inorganic contaminants; pesticides and herbicides; organic chemical contaminants; and radioactive contaminants. In order to ensure that tap water is safe to drink, the State and the EPA prescribe regulations which limit the amount of certain contaminants in water provided by public water systems. The State Health Department's and the FDA's regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

The City's water supply originates over 20 miles north of the City, in the Tug Hill area of Lewis County. The Tug Hill Region is one of the most remote and sparsely populated areas of the state. One hundred square miles of the 155 square mile watershed of the East Branch of the Fish Creek flows into Tagasoke Reservoir, a 1.4 billion-gallon impoundment. As the creek flows from this reservoir it converges with the flow from an additional 55 square miles of watershed to Kessinger Dam which is eight miles downstream. Here, the water is diverted into a rock tunnel, approximately 1 mile long. Water then flows from the tunnel into a 48-inch reinforced concrete cylinder pipe, and on to the filtration plant. Fish Creek is typically a low solids, low turbidity water source, with significant amounts of color. As it is a surface supply, it is very susceptible to seasonal and weather-related stream flow variation. During 2010, our system did not experience any restriction of our water source.

SOURCE WATER ASSESSMENT INFORMATION

A Source Water Assessment has been completed by the New York State Department of Health for the CITY OF ROME Water System. Possible and actual threats to drinking water source(s) were evaluated. The state source water assessment includes a susceptibility rating based on the risk posed by each potential source of contamination and how easily contaminants can move through the subsurface to the source(s). The susceptibility rating is an estimate of the potential for contamination of the source water, it does not mean that the water delivered to consumers is, or will become contaminated. The Source Water Assessment Program (SWAP) is designed to compile, organize and evaluate information to make better decisions regarding protecting sources of public drinking water. The report does not address the safety or quality of treated finished potable tap water. The source water assessment report is based on reasonably available information, primarily from statewide databases. Although efforts have been made to check the source water assessment report for accuracy, the large scope of this program and the nature of the available data makes the elimination of all errors from these reports nearly impossible. It is important to note that source water assessment reports estimate the potential for untreated drinking water sources to be impacted by contamination. A copy of the assessment, including a map of the assessment area, can be obtained by contacting us, as noted above.

The land uses around the CITY OF ROME Water System source were rated for their potential to cause contamination to the source. This assessment found an elevated susceptibility to contamination for this source of drinking water. The amount of pasture in the assessment area results in a high potential for protozoan contamination. No permitted discharges are found in the assessment area. There are no likely contamination threats associated with other discrete contaminant sources, even though some facilities were found in low densities. Finally, it should be noted that hydrologic characteristics (e.g. basin shape and flushing rates) generally make reservoirs highly sensitive to existing and new reservoirs of phosphorus and microbial contamination. See section "Are there contaminants in our drinking water?" for a list of the contaminants that have been detected. The source water assessments provide resource managers with additional information for protecting source waters into the future.

Based upon the SWAP Report determinations, good judgement should be used and caution should be exercised when determining land use near the source. We work hard to ensure that the source of water for our system is protected from contamination. In fact, the City of Rome has existing Watershed Rules and Regulations (10NYCRR Chapter III Part 130.1) that regulate the land use and potential contamination sources around the water source. This is accomplished through a combination of land ownership and policing of the watershed area. One-third of the area is rural while two-thirds are managed forest lands. The City of Rome has control of the Tagasoke Reservoir. Access is limited in the area and transmission pipes and waterways.

WATER TREATMENT

Turbidity is a measurement of the amount of light that is scattered. This scattering is due to suspended particles in the water. These particles, microscopic in size, may be made up of

silt, algae, bacteria, and / or protozoa. To remove this turbidity, Rome built the Water Filtration Plant, which went on-line in 1987. The water enters the flocculation / sedimentation basins to remove the majority of the turbidity at the Water Filtration Plant then flows through adsorption clarifiers then on to the filters, where it is filtered yet again. It then enters the reservoirs, which have a combined storage capacity of 65 million gallons.

Although the filtration process alone removes 99.9% of the turbidity, New York State Public Health Code Part 5 requires that the water be disinfected to kill bacteria that may still be present in the water. This is accomplished through chlorination as the water leaves the reservoirs.

Rome also treats the water to control the corrosion of plumbing that may contain metals such as lead or copper. Lead rarely occurs naturally in water. It enters drinking water primarily as a result of corrosion or wearing away of materials containing lead such as lead service lines, solder and brass plumbing fixtures in the home. Rome adds zinc orthophosphate, which is a corrosion inhibitor, in small amounts to react with the corrosive components of the water and piping to halt this corrosive process.

FACTS AND FIGURES

The City of Rome, New York supplies drinking water to approximately 30,000 people through approximately 10,000 service connections, located within the City of Rome (including Griffiss Industrial Park). Additional service is provided to customers in water districts in the towns of Western, Lee, Floyd, and Westmoreland as well as the Mohawk/Oneida Correctional Facility). During 2011, the Rome Water System provided 2.8 billion gallons of treated water. The total water consumed and billed by metered accounts was 1.5 billion gallons. As the majority of Rome's Water System is not metered, the balance of the water, 1.3 billion gallons, was either billed and consumed through flat-rate water accounts, used for fighting fires, flushing mains, or was lost through leaks in the distribution system. The average water consumption in the Water System for 2011 was 7.5 million gallons per day with the highest flow during the month of July 2011 (average of 12.8 million gallons per day). In 2011, metered water customers were charged anywhere from \$0.79 to \$3.34 per 1,000 gallons of water used (plus meter fees). Single-family homes were charged an annual fee of \$275 for water use.

ARE THERE CONTAMINANTS IN OUR DRINKING WATER?

As the State regulations require, we routinely test your drinking water for numerous contaminants. Each year, we conduct tests for a variety of contaminants. These contaminants include: total coliform, turbidity, inorganic compounds, lead and copper, nitrate, nitrite, disinfection byproducts, volatile organic compounds, and synthetic organic compounds. We detected several of those contaminants, but most were not detected in our water. The table presented below depicts which compounds were detected in your drinking water. The State allows us to test for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of our data, though representative, are more than one year old.

It should be noted that all drinking water, including bottled drinking water, may be reasonably 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) or the Oneida County Health Department at 315-798-5064.

WHAT DOES THIS INFORMATION MEAN?

As you can see by the table, our system had no violations. We have learned through our testing that some contaminants have been detected; however, most of these contaminants were detected below the level allowed by the State.

In previous years, samples have indicated the presence (though very low presence) of Cryptosporidium and Giardia. Therefore, we are required to provide the following information:

CRYPTOSPORIDIUM AND GIARDIA INFORMATION

Cryptosporidium is a microbial pathogen found in surface water and groundwater under the influence of surface water. Although filtration removes Cryptosporidium, the most commonly used filtration methods cannot guarantee 100 percent removal. During 2008, as part of our "Grandfathering" sampling for compliance with the Surface Water Treatment Rule, 24 samples of Raw (untreated, unfiltered) source water were collected and analyzed for Cryptosporidium oocysts. Of these samples, three collected in 2008 were found to contain Cryptosporidium oocysts. Therefore, our monitoring indicates the presence of Cryptosporidium in our source water. Current test methods do not allow us to determine if the organisms are dead or if they are capable of causing disease. Ingestion of Cryptosporidium may cause cryptosporidiosis, a gastrointestinal infection. Symptoms of infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals can overcome disease within a few weeks. However, immunocompromised people are at greater risk of developing life-threatening illness. We encourage immunocompromised individuals to consult their health care provider regarding appropriate precautions to take to avoid infection. Cryptosporidium must be ingested to cause disease, and it may be spread through means other than drinking water.

Giardia is a microbial pathogen present in varying concentrations in many surface waters and groundwater under the influence of surface water. Giardia is removed/inactivated through a combination of filtration and disinfection or by disinfection. During 2008, as part of our "Grandfathering" sampling for compliance with the Surface Water Treatment Rule, 24 samples of Raw (untreated, unfiltered) source water were collected and analyzed for Giardia cysts. Of these samples, thirteen (13) samples were found to contain Giardia cysts at varying numbers. Therefore, our monitoring indicates the presence of Giardia in our source water. Current test methods do not allow us to determine if the organisms are dead or if they are capable of causing disease. Ingestion of Giardia may cause giardiasis, an intestinal illness. People exposed to

Table of Detected Contaminants							
Contaminant	Violation Yes/No	Date of Sample	Level Detected (Avg/Max) (Range)	Unit Measurement	MCLG / MRDLG	Regulatory Limit (MCL, MRDL, TT or AL)	Likely Source of Contamination
Physical Parameters							
Turbidity (EP) ⁽¹⁾		6/3/2011	0.34 (highest single measurement)			TT = <1.0 NTU	Soil Runoff
Turbidity (EP) ⁽¹⁾	No	All months	100% ≤ 0.3 (lowest monthly percentage of samples meeting specified limits)	NTU	N/A	TT = 95% of samples <0.3 NTU	
Turbidity (Distribution)		Daily / monthly	0.48 ⁽²⁾ (range = 0.06 – 1.70)			TT = <5 NTU	
Total Organic Carbon (Raw Water)			4.5 ⁽³⁾ (range = 2.7 – 6.1)	mg/l	N/A	N/A	Naturally present in the environment.
Total Organic Carbon (Finished Water)	No	Monthly	1.9 ⁽³⁾ (range = 1.4 – 2.4)				
Radioactive Contaminants							
Gross alpha activity (including radium – 226 but excluding radon)	No	11/11	0.328	pCi/l	0	MCL = 15	Erosion of natural deposits.

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Inorganic Contaminants							
Barium	No	5/11	0.00408	mg/l	2	MCL = 2	Erosion of natural deposits.
Chloride	No	5/11	2.7	mg/l	N/A	MCL = 250	Naturally occurring.
Copper	No	8/09	0.14 ⁽⁴⁾ (range = 0.0049 – 0.28)	mg/l	1.3	AL = 1.3	Corrosion of household plumbing systems; Erosion of natural deposits.
Iron	No	5/07	82	ug/l	N/A	MCL = 300 ⁽⁶⁾	Naturally occurring.
Lead	No	8/09	5.5 ⁽⁶⁾ (range = ND – 14)	ug/l	0	AL = 15	Corrosion of household plumbing systems; Erosion of natural deposits.
Magnesium	No	4/09	1.46	mg/l	N/A	N/A	Naturally occurring.
Manganese (Treated Water)	No	4/09	3	ug/l	N/A	MCL = 300 ⁽⁶⁾	Naturally occurring.
Sodium	No	4/09	2.58	mg/l	N/A	See Health Effects ⁽⁷⁾	Naturally occurring.
Sulfate	No	5/11	8.2	mg/l	N/A	MCL = 250	Naturally occurring.
Zinc	No	5/08	0.084	mg/l	N/A	MCL = 5	Naturally occurring.
Inorganics – Nitrate and Nitrite							
Nitrate	No	Quarterly	0.14 ⁽⁸⁾ (range = 0.08 – 0.25)	mg/l	10	MCL = 10	Erosion of natural deposits.
Disinfectants							
Chlorine Residual	No	Daily/ Monthly	0.93 ⁽⁹⁾ (range = 0.2 – 1.9)	mg/l	N/A	MRDL = 4 ⁽¹⁰⁾	Water additive used to control microbes.
Disinfection Byproducts							
Haloacetic Acids (mono-, di-, and trichloroacetic acid, and mono- and dibromoacetic acid)	No	Quarterly	28 ⁽¹¹⁾ (range = 4 – 55)	ug/l	N/A	MCL = 60	By-product of drinking water disinfection needed to kill harmful organisms.
Total Trihalomethanes (TTHMs – chloroform, dibromochloromethane, and bromochloromethane and bromoform)	No	Quarterly	48 ⁽¹¹⁾ (range = 14 – 52)	ug/l	N/A	MCL = 80	By-product of drinking water chlorination needed to kill harmful organisms. TTHMs are formed when source water contains large amounts of organic matter.

- Notes:**
- Turbidity is a measure of the cloudiness of the water. We test it because it is a good indicator of the effectiveness of our filtration system. Our highest single entry point (pre-distribution system) turbidity measurement (0.34 NTU) for the year occurred on (June 3, 2011). State regulations require that turbidity must always be below 5 NTU. The regulations require that 95% of the turbidity samples collected have measurements below 0.3 NTU. All levels recorded last year were within the acceptable range allowed.
 - Turbidity is measured on a daily basis in the distribution system. All levels recorded last year were within the acceptable range allowed.
 - The State considers 50 pCi/l to be the level of concern for beta particles.
 - This level represents the annual average and range of values calculated from sample submission results.
 - The level presented represents the 90th percentile of the thirty (30) sites tested. A percentile is a value on a scale of 100 that indicates the percent of a distribution that is equal to or below it. The 90th percentile is equal to or greater than 90% of the copper values detected at your water system. In this case, the 90th percentile was the twenty-seventh highest value. The action level for copper was not exceeded at any of the thirty (30) sites tested.
 - If iron and manganese are present, the total concentration of both should not exceed 500 ug/l.
 - The level presented represents the 90th percentile of the thirty (30) sites tested. The action level for lead was not exceeded at any of the sites tested.
 - Water containing more than 20 mg/l of sodium should not be used for drinking by people on severely restricted sodium diets. Water containing more than 270 mg/l of sodium should not be used for drinking by people on moderately restricted sodium diets.
 - This level represents the average and range of values calculated from sample submission results.
 - This level represents the annual average and range of values calculated from sample submission results.
 - Value presented represents the Maximum Residual Disinfectant Level (MRDL) which is a level of disinfectant added for water treatment that may not be exceeded at the consumer's tap without an unacceptable possibility of adverse health effects. MRDLs are currently not regulated but in the future they will be enforceable in the same manner as MCLs.
 - This level represents the annual average of quarterly sample results and the range of values calculated from all samples submitted. Although two Total Trihalomethane (TTHM) samples exceeded the MCL (81.6, 94.2), compliance determination is based upon the Running Annual Average. Therefore, we did not exceed the MCL for TTHMs.

Definitions:		
ACTION LEVEL	AL	The concentration of a contaminant that, if exceeded, triggers treatment or other requirements that a water system must follow.
MAXIMUM CONTAMINANT LEVEL	MCL	The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible.
MAXIMUM CONTAMINANT LEVEL GOAL	MCLG	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.

Definitions:		
MAXIMUM RESIDUAL DISINFECTANT LEVEL	MRDL	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.
MAXIMUM RESIDUAL DISINFECTANT LEVEL GOAL	MRDLG	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 contamination.
MILLIGRAMS PER LITER	mg/l	Corresponds to one part of liquid in one million parts of liquid (parts per million - ppm).
MICROGRAMS PER LITER	ug/l	Corresponds to one part of liquid in one billion parts of liquid (parts per billion - ppb).
NEPHELOMETRIC TURBIDITY UNIT	NTU	A measure to the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.
NON-DETECTED	ND	Laboratory analysis indicates that the constituent is not present.
PCOCURIES PER LITER	pCi/l	A measure of the radioactivity in water.
TREATMENT TECHNIQUE	TT	A required process intended to reduce the level of a contaminant in drinking.

Giardia may experience mild or severe diarrhea, or in some instances no symptoms at all. Fever is rarely present. Occasionally, some individuals will have chronic diarrhea over several weeks or a month, with significant weight loss. Giardiasis can be treated with anti-parasitic medication. Individuals with weakened immune systems should consult with their health care providers about what steps would best reduce their risks of becoming infected with Giardiasis. Individuals who think that they may have been exposed to Giardiasis should contact their health care providers immediately. The Giardia parasite is passed in the feces of an infected person or animal and may contaminate water or food. Person to person transmission may also occur in day care centers or other settings where handwashing practices are poor.

IS OUR WATER SYSTEM MEETING OTHER RULES THAT GOVERN OPERATIONS?

Last year, our system was in compliance with applicable State drinking water operating, monitoring and reporting requirements.

As you may recall, a portion of our system was adversely affected by a water main break. Beginning on April 6, 2011 and ending on April 12, 2011, a portion of our system was operating under a Boil Water Order. In order to repair the main, water had to be redirected around the area off of Turin Road. The loss of pressure and the type of break that was present increased the chances for contamination. Therefore, we wanted to be cautious about the use of water in the affected area. Following the repair and followup samples, the water was determined to be potable and the Boil Water Order was rescinded.

LEAD INFORMATION

The Federal Lead and Copper Rule requires us to include the following information about Lead in drinking water with our Annual Water Quality Report. "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. Our water system 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 or at <http://www.epa.gov/safewater/lead>.

DO I NEED TO TAKE SPECIAL PRECAUTIONS?

Some people may be more vulnerable to dis-

ease causing microorganisms or pathogens 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 from their health care provider about their drinking water. EPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium, Giardia and other microbial pathogens are available from the Safe Drinking Water Hotline (800-426-4791).

WHY SAVE WATER AND HOW TO AVOID WASTING IT?

Although our system has an adequate amount of water to meet present and future demands, there are a number of reasons why it is important to conserve water:

- Saving water saves energy and some of the costs associated with both of these necessities of life;
- Saving water reduces the cost of energy required to pump water and the need to construct pumping systems and water towers; and
- Saving water lessens the strain on the water system during a dry spell or drought, helping to avoid severe water use restrictions so that essential fire fighting needs are met.

You can play a role in conserving water 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. Conservation tips include:

- 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 up 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 one of these otherwise invisible toilet leaks. Fix it and you save more than 30,000 gallons a year.

SYSTEM IMPROVEMENTS

The City of Rome improved the water system in several ways in 2011. The following were done to improve the capacity and operations of the City of Rome Water System:

- Updated Risk Management Plan
- New hoist for low lift pumps with enclosure
- New roads constructed at lagoons, partial new road and pad at drying beds
- Continued to install new updated turbidity meters (project expected to be completed in 2012)

- Low lift pump (3) rebuilt
- Cleaned both Drying Beds and Sedimentation Basins and Lagoons
- Fabricated portable emergency desiccation equipment for sodium hypochlorite, as a secondary backup for primary disinfection system
- Engineering plans completed for back up generator at Treatment Plant
- Improved lighting at facilities, added lights at Sedimentation area, Chlorine storage area, and Kessinger Dam Gate House
- Installed new updated Differential Pressure Transmitter and water lines on 13-inch venturi in meter house basement, calibrated transmitter for 10-inch venturi
- Fabricated access ramps for heavy equipment to access Fish Creek to clean intake areas at Kessinger Dam
- Remedial recommendation inspection and report for Kessinger Dam performed by GHD
- Ten year engineering assessment and two year safety inspection of Boyd Dam completed by GHD with help from Klepper, Hahn & Hyatt Structural Engineering
- Remotely Operated Underwater Vehicle inspection and report performed by Aquatic Sciences completed for water supply transmission tunnel

Each of these improvements and the planned upgrades for portions of our system will ensure continued operation of our water system for years to come. We are expecting to perform additional work in 2012 to ensure compliance with regulations and provide necessary improvements to ensure continued operation of our system.

CLOSING

Thank you for allowing us to continue to provide your family with quality drinking water this year. We ask that all our customers help us protect our water sources, which are the heart of our community and our way of life. Please call our office at 336-6000 or 339-7777 if you have questions.

For customers of purchasing water districts (i.e. Floyd Water District, Spencer Settlement Water District, Lee Water District, and Mohawk Correctional Facility), see respective reports for additional information regarding additional sampling, treatment and contact information.



City of Rome Water System

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