

**Annual Drinking Water Quality Report for 2016**  
**Town of Moreau Water Department**  
**351 REYNOLDS ROAD**  
**MOREAU, NY 12828**  
**(Public Water Supply ID# 4500177)**

**INTRODUCTION**

To comply with State and Federal regulations, the Town of Moreau Water Department 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. 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.

We in the Town of Moreau get our water from two different sources, the Town of Queensbury and Saratoga County. Both of these municipalities take water from the Hudson River and treat it. We at the Town of Moreau, by using both, supply a blend of water to our residents. On the following pages you will find reports from both Queensbury and Saratoga County and within these reports are facts and information to ensure that good potable water is being sent to our residents.

Listed on the following pages are the Town of Moreau disinfection by-products reports and lead and copper testing results for 2016.

**In an effort to reduce the costs of printing and mailing this report to over 2,000 water customers annually, we will be making this Annual Drinking Water Quality Report available for review on the town's website: [www.townofmoreau.org](http://www.townofmoreau.org). If you do not have access to a computer and would prefer to continue receiving these reports manually please call the Town Clerk's Office at (518) 792-1030 ext. 3 and you will be put on a mailing list.**

If you have any questions about this report or concerning your drinking water, please contact **Jesse Fish, Town of Moreau Water Superintendent at 792-5541**. We want you to be informed about your drinking water. If you want to learn more, please attend any of our regularly scheduled Town board meetings. The meetings are held on the 2<sup>nd</sup> & 4<sup>th</sup> Tuesdays of each month at the Town Hall, 351 Reynolds Road, Moreau, NY.

**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 that 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 Town of Moreau purchases drinking water from the Queensbury Water District and the Saratoga County Water Authority. The Queensbury Water District source is the Hudson River, a surface water supply that is located at the Sherman Island Dam and The Saratoga County Water Authority source is a surface water supply, the Hudson River. During 2016, our system did not experience any restriction of our water source.

**SOURCE WATER ASSESSMENT**

The NYS Department of Health has evaluated the Hudson River's susceptibility to contamination under the Source Water Assessment Program (SWAP), and their findings are summarized in the paragraph below. It is important to stress that these assessments were created using available information and only estimate the potential for source water contamination. Elevated susceptibility ratings do not mean that source water contamination has or will occur for this water supply. The Queensbury Water District and Saratoga County Water Authority provide treatment and regular monitoring to ensure the water delivered to consumers meets all applicable standards.

Based on documented polychlorinated biphenyl (PCBs) contamination of sediments upstream of the intake, the Queensbury Water District is tested quarterly for PCBs. During 2016, PCBs were not detected in source or finished drinking water. It should also be noted that rivers in general are highly sensitive to microbial contaminants.

**HOW IS OUR WATER TREATED?**

Town of Queensbury water is pumped from the river into a complete treatment facility consisting of the following: chemical pre-treatment, flocculation, coagulation, sedimentation, pre-chlorination, filtration, post-chlorination, and corrosion control. The treatment plant is manned 24 hours a day, 365 days per year under the supervision of two IA operators. The water source for the SCWA is also the Hudson River. Water treatment consists of addition of a coagulant and filtration through 0.1 micron membrane filters and granular activated carbon filters. Caustic soda is added for pH adjustment and orthophosphate is added for corrosion control. Sodium hypochlorite is added for disinfection and to maintain a residual through the transmission system.

**FACTS AND FIGURES**

The Moreau Water District provides water to approximately 6,600 people through 2,300 service connections. The total amount of water used in 2016 in the Town of Moreau was 261,289,000 gallons. The daily average water used in the distribution system is 715,860 gallons. Our highest single daily usage was 1,470,000 gallons.

**ARE THERE CONTAMINANTS IN OUR DRINKING WATER?**

Moreau Water District staff are responsible for testing the water in the distribution system. The water is tested monthly for Total Coliform bacteria (7 samples per month), quarterly for disinfection byproducts, and once every 3 years for lead and copper. Source water monitoring is completed by the Queensbury Water District and Saratoga County Water Authority. The Queensbury Water District and Saratoga County test the source water for inorganic compounds, volatile organic compounds, synthetic organic compounds, nitrate, and radiologicals. The tables presented below summarizes what was detected in your drinking water. The State allows some contaminants to be tested less than once per year because the concentrations of these contaminants do not change frequently. Some of our data, though representative, is 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 (New York State Department of Health – Glens Falls District Office) at (518) 793-3893.

Table of Detected Contaminants Queensbury Water District							
Contaminant	Violation Yes/No	Date of Sample	Level Detected	Unit Measurement	MCLG	Regulatory Limit MCL	Likely Source of Contamination
<i>Radiologicals</i>							
Combined Radium 226 and 228	No	2008	0.468	pCi/L	0	5 pCi/L	Erosion of natural deposits.
Radium 228	No	5/13/08 2/14/08	0.139 0.129	pCi/L	0	5pCi/L	Erosion of natural deposits.
Radium 226	No	2/19/08	0.0334	pCi/L	0	5pCi/L	Erosion of natural deposits.
<i>Combined Filter Effluent Turbidity (5 filters) and Microbiologicals</i>							
Turbidity <sup>1</sup>	No	11/9/16 & 11/17/16	0.13 <sup>1</sup>	NTU	N/A	TT=<1 NTU	Soil Runoff
Turbidity <sup>1</sup>	No	11/16/16	100%	%	100%	TT=95% of samples <0.3 NTU	Soil Runoff
<i>Inorganic Contaminants</i>							
Barium	No	2/3/16	0.005	mg/l	2.0 mg/l	2.0 mg/l	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Sodium	No	5/4/16 8/3/16 11/2/16	17.4 14.6 15.4 <sup>2</sup>	mg/l	N/A	N/A	Naturally occurring, road salt, animal waste, sodium carbonate
Chloride	No	2/13/2013	5.8	mg/l	N/A	250 mg/l	Erosion of natural deposits, water disinfection by-product
Iron	No	2/13/2013	0.009	mg/l	N/A	0.3 mg/l	Erosion of natural deposits
Sulfate	No	2/13/2013	11.5	mg/l	N/A	250 mg/l	Erosion of natural deposits, Runoff from fertilizer
Manganese	No	2/13/2013	0.005	mg/l	N/A	0.3 mg/l	Erosion of natural deposits

Contaminant	Violation Yes/No	Date of Sample	Level Detected	Unit Measurement	MCLG	Regulatory Limit MCL	Likely Source of Contamination
Nitrate	No	2/3/16	0.11	mg/l	10 mg/l	10.0 mg/l as Nitrogen	Erosion of natural deposits, Runoff from fertilizer
Zinc	No	2/13/2013	0.006	mg/l	N/A	5.0 mg/l	Erosion of natural deposits
<b>Principal Organic Compounds</b>							
Bromomethane	No	2/3/16 4/6/16 7/13/16 11/2/16	0.58 ND ND ND	ug/l	N/A	N/A	Erosion of Natural Deposits
<b>Disinfection Byproducts</b>							
Total Organic Carbon	No	Monthly	Annual Range <sup>3</sup> ND-2.1  Average – 1.62	mg/l	N/A	TT	Naturally present in the environment
<b>Long Term 2 Enhanced Surface Water Treatment Rule (LT2ESWTR)<sup>4</sup></b>							
Giardia	No	10/5/16 11/1/16 12/8/16	3 46 15	Total Count	N/A	N/A	Soil runoff
Cryptosporidium	No	10/5/16 11/1/16 12/8/16	0 0 0	Total Count	N/A	N/A	Soil runoff
<b>Unregulated Contaminant Monitoring Regulation 3 (UCMR3)<sup>5</sup></b>							
Strontium	No	Quarterly Samples 2/13/15, 4/13/15, 7/16/15, 10/15/15	22 – 28 Annual Range	ug/L	N/A	N/A	Erosion of Natural Deposits
Chlorate	No	Quarterly Samples 2/13/15, 4/13/15, 7/16/15, 10/15/15	44-160 Annual Range	ug/L	N/A	N/A	Agriculture Runoff
Vanadium	No	Quarterly Samples 2/13/15, 4/13/15, 7/16/15, 10/15/15	0.2-0.5 Annual Range	ug/L	N/A	N/A	Erosion of Natural Deposits
Chromium (hexavalent)	No	Quarterly Samples 2/13/15, 4/13/15, 7/16/15, 10/15/15	0.03 Annual Range	ug/L	N/A	N/A	Erosion of Natural Deposits

1 - Turbidity is a measure of the cloudiness of the water. We measure it because it is a good indicator of the effectiveness of our filtration system. Our highest combined filter effluent turbidity measurement for the year occurred on 11/9/2016 and 11/17/2016 (0.13 NTU). State regulations require that combined filter effluent point turbidity must always be below 1.0 NTU. The regulations also require that 95% of the combined filter effluent point turbidity samples collected have measurements below 0.3 NTU. All levels recorded were well below the acceptable range allowed and did not constitute a treatment violation.

2 - Water containing more than 20 mg/l sodium should not be used for drinking by people on severely restricted diets. This represents 4.73 mg of sodium in one 8 fluid oz. glass of water.

3 - Total Organic Carbon is not regulated, but its calculated removal and compliance ratio must equal or exceed performance requirements established by the US-EPA. All levels recorded were well below the acceptable range allowed and did not constitute a treatment technique violation.

4 - The Long Term 2 Enhanced Surface Water Treatment Rule was implemented by the US-EPA to monitor drinking water sources. Specifically, Giardia and Cryptosporidium which are highly resistant to traditional water treatment practices. Our system is required to test monthly for two years, starting October 2016. Please note that these results are prior to any water treatment. For more information, please review the US-EPA website.

5 - In 2015, we were required to collect and analyze drinking water samples under the Unregulated Contaminant Monitoring Regulation 3 (UCMR3). The contaminants currently do not have a maximum contaminant level but are being tested for future regulations. More information can be found the EPA website under UCMR3.

**INFORMATION ON GIARDIA - QUEENSBURY**

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 2016, as part of our routine sampling, three samples were collected of untreated Hudson River source water and analyzed for Giardia cysts. Of these samples one showed three cysts, a second showed forty-six cysts, and a third showed fifteen cysts. Therefore, our testing 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 can cause disease. Ingestion of Giardia may cause giardiasis, an intestinal illness. People exposed to 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 6 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 hand washing practices are poor.

Saratoga County Water Authority							
Contaminant	Violation Yes/No	Date of Sample	Level Detected	Unit Measurement	MCLG	Regulatory Limit MCL	Likely Source of Contamination
Turbidity (Highest Result - Entry Point)	No	11/14/16	0.158	NTU	N/A	TT-1.0	Soil runoff
Nitrate	No	2/24/16	0.13	mg/l	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits.
Manganese	No	1/22/2013	12	ug/l	N/A	300	Naturally occurring; Indicative of landfill contamination
Sodium	No	1/22/2013	8.44 <sup>2</sup>	mg/l	N/A	270*	Naturally occurring; Road salt; Water softeners; Animal waste.
Zinc	No	1/22/2013	21	ug/l	N/A	5000	Naturally occurring; Mining waste.
Chloride	No	1/22/2013	10.8	mg/l	N/A	250	Naturally occurring or indicative of road salt contamination.
Sulfate	No	1/22/2013	3.8	mg/l	N/A	250	Naturally occurring.
Barium	No	3/8/16	0.006	ug/l	2	2000	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
Giardia	No	10/3/16 11/9/16 12/7/16	5 0 0	Total count	N/A	N/A	Soil runoff
Cryptosporidium	No	10/3/16 11/9/16 12/7/16	2 0 0	Total count	N/A	N/A	Soil runoff

\* 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.

**INFORMATION ON CRYPTOSPORIDIUM – SARATOGA COUNTY WATER AUTHORITY**

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 2016, as part of our routine sampling, three samples were collected of untreated Hudson River source water and analyzed for Cryptosporidium oocysts. Of these samples, one sample showed two oocysts and two samples showed no oocysts. Therefore, our testing 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 can cause 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, immuno-compromised people are at greater risk of developing life-threatening illness. We encourage immuno-compromised 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.

**INFORMATION ON GIARDIA – SARATOGA COUNTY WATER AUTHORITY**

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 2016, as part of our routine sampling, three samples were collected of untreated Hudson River source water and analyzed for Giardia cysts. Of these samples, one showed five cysts and two showed no cysts. Therefore, our testing 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 can cause disease. Ingestion of Giardia may cause giardiasis, an intestinal illness. People exposed to 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 hand washing practices are poor.

Moreau Water District							
Contaminant	Violation Yes/No	Date of Sample	Level Detected	Unit Measurement	MCLG	Regulatory Limit MCL	Likely Source of Contamination
Total Trihalomethanes Amy Drive	No	Quarterly Samples 2/4/16, 5/6/16, 8/5/16, 11/3/16	67.5 <sup>1</sup> (47-87) <sup>2</sup>	ug/l	N/A	80 ug/l	By-products of drinking water chlorination. TTHM's are formed when source water contains large amounts of organic matter.
Total Trihalomethanes Spier Falls	No	Quarterly Samples 2/4/16, 5/6/16, 8/5/16, 11/3/16	34.5 <sup>1</sup> (21-30) <sup>2</sup>	ug/l	N/A	80 ug/l	By-products of drinking water chlorination. TTHM's are formed when source water contains large amounts of organic matter.
Total Haloacetic Acids Amy Drive	No	Quarterly Samples 2/4/16, 5/6/16, 8/5/16, 11/3/16	40.5 <sup>1</sup> (18-30) <sup>2</sup>	ug/l	N/A	60 ug/l	By-products of drinking water chlorination. HAA5's are formed when source water contains large amounts of organic matter.
Total Haloacetic Acids Spier Falls	No	Quarterly Samples 2/4/16, 5/6/16, 8/5/16, 11/3/16	35.0 <sup>1</sup> (13.9-50) <sup>2</sup>	Ug/l	N/A	60 ug/l	By-products of drinking water chlorination. HAA5's are formed when source water contains large amounts of organic matter.
Copper	No	4/10/16 9/12/16	0.026 <sup>3</sup> (0.003-0.069) <sup>4</sup> 0.038 <sup>3</sup> (0.004-0.052) <sup>4</sup>	mg/l	1.3 mg/l	AL – 1.3 mg/l	Corrosion of household plumbing systems; Erosion of natural deposits
Lead	No	4/10/16 9/12/16	1 <sup>3</sup> (ND-46) <sup>4</sup> 2 <sup>3</sup> (ND-3) <sup>4</sup>	ug/l	15 ug/l	AL-15 ug/l	Corrosion of household plumbing systems; Erosion of natural deposits

- 1- The level presented represents the highest quarterly running annual average from the samples collected for 2016.
- 2- The level presented represents the range of detects of the quarterly samples collected in 2016.
- 3 – The level presented represents the 90<sup>th</sup> percentile of the 40 sites tested in April 2016 and the 31 sites tested in September 2016. 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 90<sup>th</sup> percentile is equal to or greater than 90% of the values detected at your water system. The level for Copper was not exceeded at any of the sites tested. The level for lead was exceeded at one site in the April 2016 sample round.
- 6 – This represents the range of lead and copper results.

**Definitions:**

- 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.
- 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. MRDLG's do not reflect the benefits of the use of disinfectants to control microbial contamination.
- Action Level (AL): The concentration of a contaminant, which, if exceeded, triggers treatment, or other requirements that a water system must follow.
- Treatment Technique (TT): A required process intended to reduce the level of a contaminant in drinking water.
- Non Detects (ND): Laboratory analysis indicates that the constituent is not present.
- Non-Applicable (NA)

**Nephelometric Turbidity Unit (NTU):** A measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

**Milligrams per liter (mg/l):** one part per million corresponds to one minute in two years or a single penny in \$10,000.

**Micrograms per liter (µg/l):** one part per billion corresponds to one minute in 2,000 years or a single penny in \$10,000,000.

**Picocuries per liter (pCi/L):** A measure of the radioactivity in water.

**Nanograms per liter (ng/l):** Corresponds to one part of liquid to one trillion parts of liquid (parts per trillion - ppt).

### **WHAT DOES THIS INFORMATION MEAN?**

As you can see by the table, neither our system, the Queensbury Water District nor the Saratoga County Water Authority exceeded any contaminant MCL levels. We have learned through our testing that some contaminants have been detected; however, these contaminants were detected below the level allowed by the state. MCL's are set at very stringent levels. To understand the possible health effects described for many regulated constituents, a person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect.

### **IS OUR WATER SYSTEM MEETING OTHER RULES THAT GOVERN OPERATIONS?**

During 2016, both the Queensbury WD and the Saratoga County Water Authority were in compliance with all applicable State drinking water requirements. All testing was performed and reported in the required time. During September 2016 we were required to collect 40 lead and copper samples. Nine samples were rejected due to the fact that those houses sampled, didn't fall within the parameters of the lead and copper sampling rule. Therefore, we were only credited with 31 samples and are required to notify our customers of this.

### **INFORMATION ON LEAD IN DRINKING WATER**

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. The Queensbury WD 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?**

Although our drinking water met or exceeded state and federal regulations, some people may be more vulnerable to disease 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 costly new wells, pumping systems and water towers.
- ◆ 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 up to 10 gallons for every cycle, regardless of how many dishes are loaded.
- ◆ 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 one of these otherwise invisible toilet leaks. 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.

### **SYSTEM IMPROVEMENTS:**

In 2016: We continued to upgrade meters in water district 4 and as we do that, we are locating service lines and shut offs in each house.

In 2017: We will add more hydrants for fire protection on Connor Drive, Park Drive and Gansevoort Road. Also we plan on continuing meter upgrades in District 4. We have located and marked most service line valves in Districts 1 & 2 and recorded them.