

*Annual Drinking Water Quality Report for 2012*  
*Jefferson Water District*  
*Post Office Box 34 Jefferson, New York 12093*  
*Public Water Supply ID# NY4700095*

## INTRODUCTION

To comply with State and Federal regulations, Jefferson Water District, 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. In past years, we conducted tests for over 140 contaminants. We detected eleven of those contaminants. Lead exceeded standards in the past and it was necessary for the District to have a corrosion control study done find methods to reduce the lead. Lead was shown to be in compliance during sampling done in 1999. However, Copper did exceed standards during the 2007 sampling. Treatment is added to bring Copper levels into compliance. This will be discussed in the report. 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 Peter Andrews, and Terry Harkenreader our Water System Operators at [telephone #607-286-9809](tel:607-286-9809) or the [Town Office at 607-652-7931](tel:607-652-7931). We want you to be informed about your drinking water. Your comments and suggestions are welcome and this is your opportunity to participate in decisions that affect the water system. Water District issues may be discussed at the regular Town meetings held on the second Thursday of each month at 7:00 PM at the Town Hall, 677 North Harpersfield Road.

## 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 water serving the Jefferson Water District comes from five groundwater springs and two drilled ground water wells on the hill located on the south side of Tompkins Hill Road. The springs are the regular source. The Wells are the emergency sources with well # 2 being used when needed and well# 1 is not normally used because of pumping costs and lower yield. The spring water flows by gravity to the treatment plant building where chlorine is added to disinfect the water. Soda ash is added to adjust the pH and make the water less acid for control of copper leaching in addition to an orthophosphate to coat the pipes and prevent leaching of lead and copper. The well water is pumped to the treatment plant when the wells are used. The water goes from the treatment plant to a 30,000-gallon concrete storage tank called a clearwell. The water flows to the residences in the District through ductile iron pipe. Pressure is provided by gravity because the clear well is uphill of the homes. The system serves approximately 80 residences and approximately 300 residents and the Jefferson Central School. A flat rate of \$ 180 per year is charged per service connection and 1.5 cents per 1000 gallons used after the first 5000 gallons. Total water production in 2012 was approximately 4,649,585 which was about 12,703 gallons per day. Total water production in 2011 was approximately 4,200,000 gallons which was about 11,500 gallons per day. Total water production in 2010 was approximately 5,270,252 gallons which was 14,439 gallons per day. Total water production in 2009 was 5,502,002 gallons which is an average of 14,800 gallons per day. Total water production in 2008 was 5,847,867 gallons, which is approximately 15,978 gallons per day. Total Water Production in 2007 was approximately 4,600,000 gallons; average of 12,648 gallons per day.

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

As the State regulations require, we routinely test your drinking water for numerous contaminants. These contaminants include: [total coliform](#), [inorganic compounds](#), [nitrate](#), [nitrite](#), [lead](#), [copper](#), [disinfection by-products](#), [radionuclides](#), [volatile organic compounds](#), and [synthetic organic compounds](#). The table presented below depicts which substances 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 Schoharie County Department of Health at 518-295-8382.

Definitions that you will find in the table of detected contaminants

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.

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

Treatment Technique (TT): A required process intended to reduce the level of a contaminant in drinking water.

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).

Maximum Residual Disinfectant Level (MRDL) – The highest level of a disinfectant allowed in drinking water, based upon a running annual average of the samples. 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 contaminants.

N/A – means “not applicable” because there is no maximum contaminant level goal set, no maximum contaminant level set, the contaminant is a treatment technique, the chemical is an additive, or there are no units assigned to the contaminant.

<b>Table of Detected Contaminants</b>							
Contaminant	Violation Yes /No	Date of Sample	Level Detected	Unit Measurement	MCLG Or MRDLG	Regulatory Limit (MCL, TT, AL, MRDL)	Likely Source of Contamination
Lead See lead and copper section below	No	10 sites in 2011	5.3 ug/l to Not detected	ug/l	zero	15 ug/l	Corrosion of plumbing systems, erosion of natural deposits
Copper See lead and copper section below	No	10 sites in 2011	No sites were above 1.3 mg/l	mg/l	1.3 mg/l	1.3 mg/l	Corrosion of plumbing systems, erosion of natural deposits
Sodium	No	02/03/2011	15.7 mg/l	mg/l	n/a	See health effects page 5	Naturally occurring, Road salt, Water softeners, Animal waste

Sulfate	No	10/26/1999	9 mg/l	mg/l	n/a	250 mg/l	Naturally occurring, erosion of natural deposits, leaching from septic tanks
Total Trihalomethanes Or TTHM a combination of chloroform, bromoform, bromodichloromethane, dibromochloromethane	No	09/30/2010	5.27 ug/l	ug/l	80 ug/l	80 ug/l	By product of drinking water chlorination formed when the source water or distribution system (biofilm) contains large amounts of organic matter. Chlorination is needed to kill harmful organisms if they get into the water
Chlorine residual In distribution system	No	Daily and at the time a bacteria sample is collected	Range 0.2 mg/l to 2 mg/l	mg/l	4 mg/l	4 mg/l	By-product of drinking water chlorination. Chlorination is needed to kill harmful organisms if they get into the water
Halo acetic acids or HAA5	No	09/30/2010	Not detected	ug/l	60 ug/l	60 ug/l	By product of drinking water chlorination formed when the source water or distribution system (biofilm) contains large amounts of organic matter. Chlorination is needed to kill harmful organisms if they get into the water
Nitrate	No	02/03/2011	0.1 mg/l	mg/l	10 mg/l	10 mg/l	Runoff from fertilizer use; Leaching from septic tanks, sewage; erosion of natural deposits.
Manganese (well # 2 )	No	10/11/1990	30 ug/l	ug/l	n/a	300 ug/l	Naturally occurring
Sulfate (well # 2)	No	10/11/1990	10 mg/l	mg/l	n/a	250 mg/l	Naturally occurring, erosion of natural deposits, leaching from septic tanks
Sodium (well # 2)	No	10/11/1990	20 mg/l	mg/l	n/a	See health effects page five	Naturally occurring, Road salt, Water softeners, Animal waste
Odor (well # 2)	No	10/11/1990	4 odor units	Odor units	n/a	3 odor units see information below	Naturally occurring, Hydrogen sulfide (rotten egg odor)
Barium (well # 2)	No	04/04/2006	35 ug/l	ug/l	2000 ug/l	2000 ug/l	Naturally occurring or discharge from drilling wastes
Fluoride (well # 2)	No	04/04/2006	0.1 mg/l	mg/l	2.2 mg/l	2.2 mg/l	erosion of natural deposits

### WHAT DOES THIS INFORMATION MEAN?

The table shows that our system detected some contaminants in very small amounts. 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, these contaminants were detected at or below the levels allowed by the State and Federal standards. We are providing health effects information on each, if you have a concern over the contaminant.

### Lead

The source water is free of lead (not detected in sample collected by health department 01/29/2007). Ten sites were tested in 2011 and only 6 of 10 sites had lead detected. The other results were 0.5, 0.7, 2.8, 5.3 and were all below action levels. We

have switched to pH adjustment by adding sodium carbonate and the addition of orthophosphate for control corrosion. So far, it has been successful. We are providing the following information about lead in drinking water if you have a concern about it. The lead dissolves from the household plumbing and gets higher as the water sits motionless in the pipes for a longer period of time. Infants and children who drink water containing lead in excess of the action level could experience delays in their physical and mental development. Children could show slight defects in attention span and learning abilities. Adults who drink water containing lead in excess of the Action Level over many years could develop kidney problems or high blood pressure. 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. If you are concerned about elevated lead levels in your home's water, you may wish to have your water tested. Flush your tap for approximately 2 minutes before using tap water. Additional information is available from the Safe Drinking Water Hotline (1-800-426-4791) or <http://www.epa.gov/safewater>  
If you do change or repair your water pipes use plastic piping instead of copper with soldered joints to reduce metal leaching.

### **Copper**

The source water is free of copper. The District is in compliance with the Federal and State Lead and Copper Rule at this time. Copper is an essential nutrient to your health. Some people who drink water containing copper in excess of the Action Level over a relatively short period 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. If you are concerned about the copper in the water flush your tap water as stated in the lead information above to remove it from the drinking water. Ten sites were tested in 2011 and none were above the copper action level of 1.3 mg/l.

Soda ash addition began in 2004 as mandated by the Health Department to raise the pH of the water. The pH adjustment alone was not enough for effective lead and copper control. An orthophosphate was added to the water in 2009 to combine with pH adjustment. The next round of 10 samples is required June 1, 2012 to September 30, 2012. Lead service lines were removed during the District project of 1998. Lead is a larger health concern than copper. You must still flush your tap for two minutes to remove any excess copper and the traces of lead if you have a concern that these contaminants will be in your water. If you wish to have your residence tested during this round please contact the operator so the site may be approved by the Health Department. It is recommended that if you change plumbing in your home use lead free solder on copper pipes and if possible change copper to approved plastic pipes to eliminate the metal leaching completely.

### **Sodium**

Sodium is at very low levels in the springs. The level will increase slightly after adding the chlorine disinfection soda ash and orthophosphate, but will still be below 20 mg/l. The well sodium level is slightly over 20 mg/l when used alone and will be less than 20 mg/l when blended with the springs, which is the usual case. Sodium is naturally occurring.

### **Sulfate**

The amount of sulfate in the water is so low no health effects can be observed. At high levels, Sulfates can form scale on plumbing and cause diarrhea. Sulfate is naturally occurring.

### **Total Trihalomethanes or THMs**

TTHMs were detected at low levels far below the legal limit in the system. The September 2010 distribution sample was collected at the point where the water is in the system the longest (maximum residence time). The level was 5.27 ug/l. People who drink water containing trihalomethanes in excess of the maximum contaminant level over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer. The MCL for total trihalomethanes is now 80 ug/L. The Water District has complied with this change. The District will be monitoring for them again in August 2013 as required.

### **Haloacetic Acids**

Haloacetic acids were not detected in 2010 but were detected at 9.9 ug/l in 2007 which is below the MCL of 60 ug/l. Even though the haloacetic acids are far below the MCL we are presenting the following information on haloacetic acids in drinking water:

“Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer.”

The TTHM, Haloacetic Acids and free chlorine residual measurements are required to have a monitoring plan that is available for review. We have a very small system waiver from the individual distribution system evaluation requirements of the Stage 2 Disinfectants/Disinfection By-products Rule in 2009. Our levels of TTHM and HAA5 are low and we qualify for the waiver. .

## **Chlorine residual**

We are required to add sodium hypochlorite to disinfect the water to kill any potentially harmful organisms in the water. Chlorine residual must be in the water at all times in accordance with State standards. Generally an average residual at the entry point of the system is approximately 1.0 mg/l.

**Nitrate:** Although nitrate was detected well below the MCL of 10 mg/l, it was detected at 0.1 mg/l in 2011 and we are presenting the following information on nitrate in drinking water: Nitrate in drinking water at levels above 10 mg/l is a health risk for infants of less than six months of age. High nitrate levels in drinking water can cause blue baby syndrome. If you are caring for an infant, you may ask for advice from you health care provider.

## **Barium**

Barium was present at trace levels. Some people who drink water containing barium in excess of the MCL over many years could experience an increase in their blood pressure.

## **Manganese**

The amount of manganese on the well water is so low no health effects can be observed. It is naturally occurring and is a beneficial nutrient. In high amounts it would cause brown water and could not be used to make baby formula. Manganese is naturally occurring.

## **Odor**

Although the water in well # 2 had odor higher than the maximum contaminant level in the raw water the odor is attributed to hydrogen sulfide (rotten egg smell) gas dissolved in the water. Most of the Hydrogen sulfide and its associated odor are removed during the chlorine disinfection treatment of the well water and the odor is not a concern. This odor comes from naturally occurring hydrogen sulfide. Well #2 has not been used in years.

## **Fluoride**

We do not add fluoride to the water. The springs have no fluoride. It is naturally occurring in well 2 water at only 5 % of the MCL. It is used as an additive to promote strong teeth in some water systems and is the most effective and economical way to help control tooth decay and the associated health problems. The amount of fluoride in the water will not affect the prescription of tablets or drops for children. This would be considered a water system that is not fluoridated.

## **DO I NEED TO TAKE SPECIAL PRECAUTIONS?**

Although our drinking water met most 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).

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

### **Waivers**

Our system has been granted a waiver from the sample requirements for the inorganics of antimony, arsenic, barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury, nickel, selenium and thallium. The waiver is being issued because these contaminants have not been detected, or detected at naturally occurring trace levels that are reliably and consistently below the maximum contaminant levels, for at least three rounds. The next sample is due by the expiration date of the waiver, December 31, 2020. Sampling may be required if circumstances change.

Our system has been granted a waiver from the requirements of asbestos monitoring because there is no asbestos containing materials in the system and no asbestos in the local geology to get into the water. The waiver will need to be renewed in 2013.

The system received a very small system waiver from the requirements of the Stage 2 Disinfectants/Disinfection By-products Rule where monitoring required in 2009 was waived because of the very low levels of TTHM and HAA5 and the small size of the system.

The Federal Ground Water Rule became effective in New York in 2009. At this time the system is in compliance with the Rule by assuring the chlorine residual at the plant is at an average 1 to 2 mg/L.

### ***Monitoring Violations DRINKING WATER NOTICES***

We violated a drinking water standard. Even though this was not an emergency, as our customers, you have a right to know what happened and what we are doing to correct this situation.

We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not our drinking water meets health standards. During the year 2012 we did not monitor for nitrate and therefore cannot be sure of the quality of our drinking water during that time.

#### **What This Means**

We are required to collect one for nitrate during the year from our water system. We did not collect the sample as required in 2012.

#### **Steps We Are Taking**

We will collect the nitrate sample required in 2013 and have sent a copy of the report to the health department as required.

We violated a drinking water standard. Even though this was not an emergency, as our customers, you have a right to know what happened and what we are doing to correct this situation.

We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not our drinking water meets health standards. During the month of December 2012 we did not report the required routine sample for total coliform and therefore cannot be sure of the quality of our drinking water during that time.

#### **What This Means**

There is nothing you need to do at this time. We are required to collect a sample for total coliform bacteria and report the result to the health department by the tenth day after the end each month. We collected and reported the samples required for the other 11 months of 2012 and those samples met requirements. The January 2013 sample was collected and reported as required and showed no coliform in the sample.

#### **Steps We Are Taking**

We collected a sample for January 2013 and reported the result to the health department as required. We are making this notice as required by January 17, 2014. For more information, please contact this establishment at 607-652-7931 or at this location, 677 North Harpersfield Road, Jefferson, New York 12093.

Please share this information with all other people who drink this water.

#### **Source Water Assessment Summary**

The NYS DOH has completed a source water assessment for this system, based on available information. Possible and actual threats to this drinking water source 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 well. 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. 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.

While nitrates (and other inorganic contaminants) were detected in our water, 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 from natural sources. The presence of contaminants does not necessarily indicate that the water poses a health risk. Normal background levels for nitrates in Schoharie County range between not detected to approximately 0.3 milligrams per liter. Organic contaminants were detected in our water in the last sample analyzed for them in 2010 (total trihalomethanes). The sources have a medium susceptibility rating to the natural organic matter, which is referred to as disinfection by-product precursors.

As mentioned before, our water is derived the springs. The source water assessment has rated the springs as having a medium-high susceptibility to pesticides, and a medium susceptibility to nitrate, disinfection byproducts, and microbial contaminants. These ratings are due to the high percentage of agricultural or abandoned agricultural land cover in the assessment area. The springs are rated as having a high natural sensitivity to halogenated solvents, petroleum products, other industrial solvents. The springs are rated as having a medium natural sensitivity to pesticides, herbicides, metals, nitrates, sediments, turbidity, and disinfection byproduct precursors, protozoa, enteric bacteria and enteric viruses. The springs are rated as having a low natural

sensitivity to phosphorus.

While the source water assessment rates our well as being susceptible to microbials, please note that our water is disinfected to ensure that the finished water delivered into your home and business meets New York State's drinking water standards for microbial contamination.

The springs are protected from contamination by watershed rules and regulations found in the New York State Sanitary Code and land use review by the Town planning Board. The operator routinely inspects the watershed.

A copy of the assessment, including a map of the assessment area, can be obtained by contacting us, as noted above.

#### 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.

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 approximately 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.

Minor deficiencies were noted on the wells and springs with screening on the wells and maintenance around the springs. There is repair work to be done around the raw water storage tank. We plan on having these items corrected in 2013.

#### CLOSING

Thank you for allowing us to continue to provide your family with quality drinking water this year. In order to maintain a safe and dependable water supply we sometimes need to make improvements that will benefit all of our customers. The costs of these improvements may be reflected in the rate structure. Rate adjustments may be necessary in order to address these improvements. We ask that all our customers help us protect our water sources, which are the heart of our community, our way of life and our children's future. Please contact the Water District if you have questions.