

Annual Drinking Water Quality Report for Calendar Year 2015
Ilion Water Department
49 Morgan Street
Ilion, NY 13357
(Public Water Supply ID# NY2102307)

INTRODUCTION

To comply with State regulations, the Ilion 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. 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 Gary VanEvera Water Operations Supervisor (315) 895-7449 ext. 3224. We want you to be informed about your drinking water. If you want to learn more, please attend any of our regularly scheduled Village Board or Municipal Utilities Board meetings. Dates for the regularly scheduled meetings are posted on the community bulletin board in the Utilities Office lobby at Village Municipal Building, 49 Morgan Street, Ilion and on the internet at www.ilionny.com.

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, in some cases, radioactive material, 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 Environmental Protection Agency prescribe regulations which limit the amount of certain contaminants in water provided by public water systems. The State Health Department's and the Food and Drug Administration's regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

Your surface water drawn from creeks and reservoirs is purified 365 days a year, 24 hours each day, by Slow Sand Gravity Filtration before distribution. The water is chlorinated before filtration and again after filtration to ensure proper disinfection. Before the water enters the distribution system it is disinfected again by ultraviolet (UV) light. Zinc orthophosphate compound is added to the water to help offset the effects of corrosion in the pipes. This compound has the added benefit of helping to control lead and copper levels. Another treatment process we employ is chelated elemental copper additions to the reservoirs before filtration as an algae control.

Your ground water is drawn from two wells that supplements the surface water sources and provides system redundancy. The water is chlorinated at the well site to ensure proper disinfection. Orthophosphate is added to the water to help offset the effects of corrosion in the pipes.

During 2015 our system has removed from service a surface water intake source because of high concentrations of phosphorus. High concentrations of phosphorous increase the growth of algae, which require high doses of chlorine and chelated elemental copper to treat.

The New York State Department of Health has evaluated this public water supply's (PWS) susceptibility to contamination under the Source Water Assessment Program (SWAP), and their findings are summarized in the paragraph(s) below. It is important to stress 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 PWS. This PWS provides treatment and regular monitoring to ensure the water delivered to consumers meets all applicable standards.

Our water is collected from a number of upland sources. The assessment found an overall elevated susceptibility to contamination for the sources. The amount of agriculture land in the assessment area results in an elevated potential for contamination by microbials, phosphorus, disinfection byproducts (DBP) precursors, and pesticides. Although there were no permitted discharges found in the assessment area, there is susceptibility to contamination associated with other discrete contaminant sources including a mine (near one stream intake). It should be noted that hydrologic characteristics (e.g. basin shape and flushing rates) generally make reservoirs highly sensitive to existing and new sources of phosphorus and microbial contamination.

Please note that your surface water is filtered and disinfected to ensure that the finished water delivered into your home meets New York State's drink water standards for microbial contamination.

A copy of the assessment can be obtained by contacting us as noted.

FACTS AND FIGURES

Your water system serves 9,022 people through a total of 2,994 service connections. The total water produced in 2015 was 498 million gallons. The average daily flow was 1.33 million gallons per day with a high single day of 2.5 million gallons. The amount of water delivered to customers was 186 million metered gallons. Additionally there was approximately 81 million gallons for various identified other usages. This leaves an unaccounted for flow of 231 million gallons. This unaccounted for flow has been, and remains one of the highest priority problems the Water Department faces and may be do to old inaccurate master meters and a high number of water service and main breaks. In 2015, the average charge per residential house hold was about \$283.08 for the year. This figure is derived from an average family size of four people using 12,000 gallons of water per billing quarter.

ARE THERE CONTAMINANTS IN OUR DRINKING WATER?

As the State regulations require, we routinely test your drinking water for numerous contaminants. These contaminants include: turbidity, inorganic and volatile organic compounds, nitrate, nitrite, lead and copper, trihalomethanes, haloacetic acids, radiological and synthetic organic compounds. Additionally, your water is tested for total coliform bacteria 13 times a month. Tables 1 and 3 on the following pages 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 1 year old. Tables 2 and 4 show other water quality parameters that were monitored. Tables 2 and 4 are our "Annual Water Quality Report Supplemental". All information published herein, is on the internet at www.ilionny.com/annual-water-quality-report, displayed on the public bulletin boards at the Ilion Library and the Municipal Building Utilities Office lobby and available upon request at the Municipal Utility Office.

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 (1-800-426-4791) or the NYS DOH Herkimer District Office at (315- 866-6879).

Table 1 Detected Contaminants

2015 Calendar Year

The table below depicts those contaminants that were detected in your drinking water at the clear well and the distribution system

Contaminant	Violation Yes/No	Date of Sample	Level Detected (Avg/Max) (Range)	Unit Measurement	MCLG	Regulatory Limit MCL, TT or AL	Likely Source of Contamination
Microbiological							
Turbidity ¹ Distribution	No	3/12/15	0.43 0.14 – 0.84	NTU	N/A	TT=Monthly Average < 5.0 NTU	Soil Runoff
Turbidity ¹ Clearwell	No	N/A	100%<1.0	NTU	N/A	TT=95% of Samples =< 1.0 NTU	Soil Runoff
Turbidity ¹ Clearwell	No	1/24/15	0.98	NTU	NA	TT=<1.0 NTU	Soil Runoff
Color	No	8/20/15	0 0 - 5	Units	N/A	15	Decaying organic matter
Inorganic							
Barium	No	1/12/15	52	ug/l	2,000	2,000	Erosion of Natural Deposits
Chloride	No	1/12/15	19	mg/l	N/A	250	Naturally Occurring
Chromium	No	1/12/15	1	ug/l	100	100	Erosion of Natural Deposits
Copper	No	7/15	560 ² 86-690	ug/l	,300	AL = ,300	Corrosion of Household Plumbing Systems
Lead	No	7/15	12 ³ ND-31	ug/l	0	AL = 15	Corrosion of Household Plumbing Systems
Floride	No	1/12/15	110	ug/l	N/A	2,200	Natural Occurring
Nickel	No	1/12/15	2	ug/l	10,000	10,000	Natural Occurring
Nitrate	No	1/12/15	1	mg/l	10	10	Runoff from Fertilizer use
Sodium ⁵	No	1/12/15	16	mg/l	N/A	See Health Effects	Naturally Occurring
Sulfate	Yes	1/12/15	220	mg/l	N/A	250	Naturally Occurring
Zinc	No	1/12/15	61	ug/l	N/A	5,000	Naturally occurring Treatment Additives
Disinfection By-products							
Entry Point Chlorine Disinfection ¹	No	8/15/15	1,100 220- 3,070	ug/l	N/A	< 200 for more than 4 hrs.	Water disinfection needed to kill harmful organisms.
Total Trihalomethanes ⁴ Site D-1	No	10/12/15	52 39 - 83	ug/l	N/A	80	By-product of drinking water disinfection needed to kill harmful organisms.
Total Haloacetic Acids ⁴ Site D-1	No	10/12/15	25 14 - 24	ug/l	N/A	60	By-product of drinking water disinfection needed to kill harmful organisms
Total Trihalomethanes ⁴ Site 2	No	10/12/15	57 39-90	ug/l	N/A	80	By-product of drinking water disinfection needed to kill harmful organisms.
Total Haloacetic Acids ⁴ Site 2	No	10/12/15	28 14 - 59	ug/l	N/A	60	By-product of drinking water disinfection needed to kill harmful organisms.

Table 1

Continued

Total Trihalomethanes ⁴ Site 3	No	10/12/15	47 37 - 60	ug/l	N/A	80	By-product of drinking water disinfection needed to kill harmful organisms.
Total Haloacetic Acids ⁴ Site 3	No	10/12/15	17 14 - 24	ug/l	N/A	60	By-product of drinking water disinfection needed to kill harmful organisms.
Total Trihalomethanes ⁴ Site 4	No	1/12/15	21 5 -41	ug/l	N/A	80	By-product of drinking water disinfection needed to kill harmful organisms.
Total Haloacetic Acids ⁴ Site 4	No	1/12/15	7 2 - 13	ug/l	N/A	60	By-product of drinking water disinfection needed to kill harmful organisms.
Total Trihalomethanes ⁴ Site P1	No	10/12/15	42 30 - 61	ug/l	N/A	80	By-product of drinking water disinfection needed to kill harmful organisms
Total Haloacetic Acids ⁴ Site P1	No	10/12/15	16 8 - 34	ug/l	N/A	60	By-product of drinking water disinfection needed to kill harmful organisms
Semi-Volatile							
Bis(2-Ethylhexyl) Phthalate	No	1/12/15	1,165 ND -2,000	ng/l	N/A	6,000	Used in plastics such as Polyvinyl chloride

Table 1 Notes

1. Turbidity is the measurement of the cloudiness of the water. We test it because it is a good indicator of the effectiveness of our Slow Sand filtration system. The highest single turbidity measurement for the year occurred on 1/24/2015 (0.98 NTU). State regulations require that turbidity must always be less than or equal to 5.0 NTU. The regulations require that 95% of the turbidity samples collected have measurements below 1.0 NTU. For 2015 100% of the turbidity levels were below 1.0 NTU.
2. The copper level represents the 90th percentile of 20 samples collected. The action level of 1,300 ug/l for copper was not exceeded at any of the sampling sites tested.
3. The lead level represents the 90th percentile of 20 samples tested. The action level of 15 ug/l for lead was exceeded at a sampling site tested.
4. This level represents the annual quarterly average calculated from data collected.
5. 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 diets.

Table 1 & 3 Definitions

Action Level (AL): The concentration of a contaminant that, if exceeded, triggers treatment or other requirements, which 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 possible.

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. MRDLGs do not reflect the benefits of the use of disinfections to control microbial contamination.

Micrograms per liter (ug/l): Corresponds to one part of liquid in one billion parts of liquid (parts per billion – ppb).

Milligrams per liter (mg/l): Corresponds to one part of liquid in one million parts of liquid (parts per million – ppm).

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

Inorganic Contaminants: A chemical substance of mineral origin such as salts and metals that are regulated by the Environmental Protection Agency in terms of compliance monitoring for drinking water.

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

Non-Detects (ND): Laboratory analysis indicates that the constituent is not present.

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

90th Percentile Value: The values reported for lead and copper represent the 90th percentile. 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 lead and copper values detected at your water system.

Total Haloacetic Acids (HAA5): The sum of the concentration of disinfection by-products in micrograms per liter (ug/l) formed during chlorination of water containing natural organic mater. The compounds dibromoacetic acid, dichloroacetic acid, monochloroacetic acid, and trichloroacetic acid rounded to two significant figures.

Total Trihalomethanes (THM): The sum of the concentration of disinfection by-products in micrograms per liter (ug/l) formed during chlorination of water containing natural organic mater. The compounds (trichloromethane [chloroform], dibromochloromethane, bromodichloromethane and tribromomethane [bromoform]), rounded to two significant figures.

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

Table 2
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Sample	Date Sampled	Level of Detection (Average) (Range)	Unit Measurement
Alkalinity Clear Well	2/13/15	194 170-260	mg/l
Calcium Clear Well	1/23/15	133 98 – 150	mg/l
Chlorine (Free) Residual Raw Water	7/15/15	0.2 .06-0.94	mg/l
Conductivity Clear Well	21/18/15	766 710-860	umhos/cm
Copper Clear Well	1/12/15	0.03 .007 – 0.29	mg/l
Total Dissolved Solids Clear Well	1/12/15	590	mg/l
Hardness Distribution	1/22/15	20 15-25	gr/gal
Langelier Index Clear Well	1/12/15	1	N/A

Table 2 Continued

Ph Raw Water	2/25/15	7.8 6.8-8.8	None
Ph Distribution	2/25/15	7.8 6.9-8.8	None
Ph Clear Well	12/18/15	7.9 7.5-8.2	None
Ortho Phosphate Clear Well	1/23/15	0.23 0.02 – 0.41	None
Ortho Phosphate Distribution	1/20/15	1.29 0.7-2	mg/l
Temperature Finished Water	8/18/15	56 38-76	Fahrenheit
Turbidity Raw Water	7/13/15	1 0.2-2.44	NTU

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List of Definitions Table 2

Alkalinity: The measurement of water's ability to neutralize acids .Natural waters range 0 – 500 mg/l.

Chlorine Free Residual: A disinfectant residual in the distribution system that is very effective in the inactivation of pathogens.

Conductivity: A measurement of the ability of water to conduct an electric current expressed in units of micromhos/centimeter (umhos/cm). Natural waters range 50 – 1500 umhos/cm. Another way to measure hardness.

Finished Water: Water that has passed through a water treatment processes that the filter plant. It is potable and ready to be delivered to customers.

Hardness: A characteristic of water caused primary by salts of calcium and magnesium. Causes scaling and may also deter the effectiveness of soap. Soft water = 4 gr/gal Hard water = 18 gr/gal

Langelier saturation index (LI): A numerical index that indicates whether calcium carbonate will be deposited or dissolved in a distribution system. The index is a general indicator of the corrosiveness of water. Negative number indicates corrosive water. Plus number indicates non-corrosive water.

PH: A measure of water's acidity or alkalinity. A scale of 0 to 14 is used, with 0 being extremely acidic and 14 being extremely alkaline.

Phosphate: A phosphate-based corrosion inhibitor. .

Raw Water: Water from the supply source before treatment.

Total Dissolved Solids (TDS): The measurement of the amount of dissolved material in water. TDS can interfere with washing clothes and corroding plumbing fixtures. Natural water range 0 – 1,000 mg/l

**Table 3
Detected Contaminants for Wells
2015 Calendar Year**

Contaminant	Violation Yes/No	Date of Sample	Level Detected (Avg/Max) (Range)	Unit Measurement	MCLG	Regulatory Limit MCL, TT or AL	Likely Source of Contamination
Microbiological							
Total Coliform Well #1	No	9/14/15	1 Positive Sample	N/A	0	2 or more Positive Samples	Naturally present in the environment
Color ¹ Well #1 and Well #2	No	5/11//15	20	Units	N/A	15	Presence of copper, iron and/or manganese
Inorganic							
Barium Well #1	No	5/11/15	81	ug/l	2,000	2,000	Erosion of Natural Deposits
Well #2	No	5/11/15	85	“	“	“	“
Chloride Well #1	No	8/31/15	46 46 – 47	mg/l	N/A	250	Naturally Occurring
Chloride Well #2	No	5/11/15	59 57 – 61	mg/l	N/A	250	Naturally Occurring
Chromium Well #1	No	5/11/15	23	ug/l	100	100	Erosion of Natural Deposits
Well #2	No	5/11/15	21	“	“	“	“
Fluoride Well #1	No	5/11/15	210	ug/l	1,300	AL = 1,300	Corrosion of Household Plumbing Systems
Well #2	No	5/11/15	130	“	“	“	“
Iron ^{1 & 4} Well #1	No	7/26/15	460 450 – 480	ug/l	N/A	300	Naturally Occurring
Iron ^{1 & 4500} Well #2	No	7/20/15	510 460 – 610	ug/l	N/A	300	Naturally Occurring
Manganese ¹ Well #1	No	8/31/15	16 16 – 18	ug/l	N/A	300	Naturally Occurring
Manganese ¹ Well #2	No	7/20/15	27 24 – 32	ug/l	N/A	300	Naturally Occurring
Nickel Well #1	No	5/11/15	68	ug/l	100,000	100,000	Natural Occurring
Well #2	No	5/11/15	77	“	“	“	“
Sodium ² Well #1	No	8/31/15	25 22 – 27	mg/l	N/A	See Health Effects	Naturally Occurring
Sodium ² Well #2	No	7/20//15	23 21 – 27	mg/l	N/A	See Health Effects	Naturally Occurring
Sulfate Well #2	No	8/10/15	5,700 5,700 – 7,100	ug/l	N/A	250,000	Naturally Occurring
Disinfection By-products							
Entry Point Chlorine Disinfection Wells	No	5/15/15	490 10 – 2,940	ug/l	N/A	< 200 for more than 4 hrs.	Water disinfection needed to kill harmful organisms.
Radiological							
Combined Radium ³ Entry Point Wells	No	5/11/15	1.18	pCi/L	0	5	Erosion of Natural Deposits

Table 3 Notes

- Higher levels may be allowed by the State when justified by the supplier of water.
- 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 diets.
- A MCL violation occurs when the annual composite of four quarterly samples or the average of the analysis of four quarterly samples exceeds the MCL.

4. Iron has no health effects. At 1,000 ug/l a substantial number of people will note a bitter astringent taste of iron. Also, at this concentration, it imparts a brownish color to laundered clothing and stains plumbing fixtures with a characteristic rust color. Staining can result at levels of 50 ug/l, lower than those detectable to taste buds. Therefore, the MCL of 300 ug/l represents a reasonable compromise as adverse aesthetic effects are minimized at this level. Many multivitamins may contain 3,000 or 4,000 micrograms of iron per capsule.

**Table 4
Wells
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Sample	Date Sampled	Level of Detection (Average) (Range)	Unit Measurement
PH Entry Point Wells	4/17/15	7.6 7.0-7.96	None
Turbidity Entry Point Wells	5/17/15	0.345 0.02 – 1.24	NTU
Temperature Entry Point Wells	6/16/15	54 47-60	Fahrenheit

WHAT DOES THIS INFORMATION MEAN?

Elevated levels of lead can cause serious health problems, especially for pregnant women and young children. It is possible that lead levels at your home may be higher than other homes in the community as a result of materials used in your home’s plumbing. The Ilion Water Department is responsible for providing high quality drinking water, but cannot control the variety of the 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>.

IS OUR WATER SYSTEM MEETING OTHER RULES THAT GOVERN OPERATIONS?

During 2015, our system was in compliance with applicable State drinking water operating, monitoring and reporting requirements.

DO I NEED TO TAKE SPECIAL PRECAUTIONS?

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. Environmental Protection Agency/Center for Disease Control 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 (1-800-426-4791).

WATER CONSERVATION TIPS

The Village of Ilion encourages water conservation. There are numerous things you can do to conserve water in your home

- Automatic dishwashers use 15 gallons for every cycle. Run the dish washer when there is a full load.
- Use water saving showerheads and take shorter showers.
- Turn off the tap when brushing your teeth.
- Check every faucet in your home for leaks. A very small slow drip can waste 15 to 20 gallons a day. Fix leaks and save almost 6,000 gallons per year.
- Water gardens and lawns for only a couple of hours after sunset.
- 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 if it does there is a plumbing problem. It is not uncommon to lose 100 gallons a day from a very small otherwise invisible leak. Fix it and save more than 30,000 gallons a year and repair all leaks promptly.
- Look and listen, if you see or hear water flowing from a fixture fix it and save money.

SYSTEM IMPROVEMENTS

The wells and master meter projects have been completed and are in service. The installation of a ultraviolet disinfection (UV) unit at the treatment plant is complete and the improvement meets the requirements for the EPA's Long Term 2 Enhanced Surface Water Rule. The installation of a pressure reducing valve is in place at the head of the distribution system and the valve is regulating the water system pressure.

CLOSING

Thank you for your continued support and understanding as we continue to provide your family with quality drinking water. We ask that all our customers help us protect our water sources, which are the heart of our community and our way of life. Customers who are well informed are our best allies in supporting improvements to maintain the highest standards. Please call the Water Department office at 315-895-7449 ext. 3224 if you have questions or comments.

Village of Ilion Water Department