

# 2016 Water Quality Report for St. Louis

This report covers the drinking water quality for the City of Saint Louis for the calendar year 2016. This information is a snapshot of the quality of the water that we provided to you in 2016. Included are details about where your water comes from, what it contains, and how it compares to Environmental Protection Agency (EPA) and State standards.

Your water comes from four groundwater wells, depths ranging from 105 to 135 feet and drawing from the Pine River. The Gratiot Area Water Authority (GAWA) treats blended well/river water prior to pumping to the Alma and St. Louis water distribution systems.

The State completed its assessment of Alma/GAWA source water in 2003 to determine the susceptibility or the relative potential of contamination. The susceptibility rating is on a six-tiered scale from "very-low" to "very-high" based primarily on geological sensitivity, well construction, water chemistry and contaminant sources. GAWA well #7 was ranked "moderately low", well #1 and the Pine River were ranked "high", for potential degree of sensitivity for contamination. New wells #8 & #9 were constructed after the assessment was completed and are not currently ranked. St. Louis will begin construction on two additional wells and water transmission mains in 2017 to provide increase capacity and redundancy for the GAWA system.

No significant sources of contamination to GAWA's well fields have been identified. The Cities have adopted and implemented a Wellhead Protection Plan to further protect GAWA's well field from potential contamination sources.

Included in this report is the analysis of water supplied by the GAWA Water Treatment Plant in Alma, Michigan and all required tests of the St. Louis water distribution system. A full copy of GAWA's 2016 CCR for the City of Alma is available online, from the St. Louis Water Dept. or at Alma or St. Louis city halls.

If you would like to know more about either the St. Louis or GAWA report(s) please contact [Steven Mephram, Superintendent of Water @ 989-681-3567](#), [Keith Risdon, St. Louis Utility Director @ 989-681-2613](#), or [Bill Pilmore, GAWA Plant Superintendent, @ 989-463-8394](#)

- **Contaminants and their presence in water:** Drinking Water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the **EPA's Safe Drinking Water Hotline (800-426-4791)**.
- **Vulnerability of sub-populations:** Some people may be more vulnerable to contaminants 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 systems disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

- **Sources of drinking water:** The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. Our water comes from wells and the Pine River. 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 activity.
- Contaminants that may be present in source water include:
  - \* **Microbial contaminants**, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife.
  - \* **Inorganic contaminants**, such as salts and metals, which can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining or farming.
  - \* **Pesticides and herbicides**, which may come from a variety of sources such as agriculture, urban stormwater runoff and residential uses.
  - \* **Radioactive contaminants**, which are naturally occurring or be the result of oil and gas production and mining activities.
  - \* **Organic chemical contaminants**, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.

In order to ensure that tap water is safe to drink, EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration regulations establish limits for contaminants in bottled water which provide the same protection for public health.

## Water Quality Data

The tables below list all the drinking water contaminants that we detected during the 2016 calendar year. The presence of these contaminants in the water does not necessarily indicate that the water poses a health risk. Unless otherwise noted, the data presented in these tables is from testing done January 1 – December 31, 2016.

The State allows us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. All of the data is representative of the water quality, but some are more than one year old.

### Terms and abbreviations used below:

- **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 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 using the best available treatment technology.
- **(MRDL):** Maximum Residual Disinfection Level, **(MRDLG):** Maximum Residual Disinfection Level Goal.
- **N/A:** Not applicable, **ND:** not detectable at testing limit, **ppb:** parts per billion or micrograms per liter, **ppm:** parts per million or milligrams per liter, **pCi/L:** picocuries per liter (a measure of radioactivity), **TT:** Treatment Technique.
- **Action Level:** The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.
- **Level 1 Assessment:** A study of the water supply to identify potential problems and determine (if possible) why total coliform bacteria have been found in the water system.
- **Level 2 Assessment:** A very detailed study of the water system to identify potential problems and determine (if possible) why an E.coli MCL violation has occurred and/or why total coliform bacteria have been found in the water system on multiple occasions.
- **NTU:** Nephelometric turbidity units.

### GAWA Water Supply results for water supplied January 01, 2016 - December 31, 2016

Regulated Contaminant	MCL	MCLG	Average Level Detected	Range	Sample Frequency (Year)	Violation Yes / No	Typical Source of Contaminant
Arsenic (ppb)	10	0	1.95	1.3 – 2.5	2016	No	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes
Nitrate (ppm)	10	10	0.18	N/A	2016	No	Runoff from fertilizer use, erosion of natural deposits
Fluoride (ppm)	4	4	0.72	0.38 – 1.19	2016	No	Additive which promotes strong teeth
Chlorine (ppm)	MRDL 4	MRDLG 4	0.80	0.03 – 1.36	Monthly (2016)	No	Water additive used to control microbes
<b>Disinfection by-products/Organic contaminants</b>							
Total Trihalomethanes (ppb)	80	N/A	53.2	28.8 – 53.2	Quarterly 2016	No	By-product of drinking water chlorination
Total Haloacetic acids (ppb)	60	N/A	8	3 - 8	Quarterly 2016	No	By-product of drinking water chlorination
Turbidity units>> (NTU)	TT=1 NTU	0	Your Water	0.07 – 0.31	2016	No	Soil runoff. Used to monitor effectiveness of filtration system
	TT=percentage of samples <0.3 NTU		0.31 NTU				
			95.0% <0.30				
>>Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of water quality. High turbidity can hinder the effectiveness of disinfectants.							

Organic Contaminants							
Bromochloroacetic acid (ppb)	N/A	N/A	1.6	ND – 3.0	Quarterly (2016)	No	By-product of drinking water disinfection
Dalapon (ppb)	200	200	0.48	N/A	Quarterly (2016)	No	Herbicide runoff
Radiological Contaminant	MCL	MCLG	Level Detected	Range	Year sampled	Violation Yes/No	Typical Source of Contamination
Combined Radium (pCi/L)	5	0	0.1	N/A	2013	No	Erosion of natural deposits
Regulated Contaminants subject to Action Levels	Action Level	MCLG	**90th percentile	Number of samples above A.L.	Sample Date (Jul – Dec)	Typical source	
Lead(ppb)***	15	0	5	3	2016	Corrosion of household plumbing, erosion of natural deposits	
Copper(ppb)	1300	1300	290	2	2016		
Special Monitoring and Unregulated Contaminants *			Level Detected	Year Sampled	Typical Source		
Sodium (ppm)			44 ppm	2016	Erosion of natural deposits		
Chloride			30 ppm	2016	Erosion of natural deposits		
Iron			<10 ppm	2016	Erosion of natural deposits		
Sulfate			140 ppm	2016	Erosion of natural deposits		

**NOTE---** Two homes sampled in the second round of testing (July – December 2016) for lead/copper were **improperly sampled**. Both homes were resampled properly and test results confirmed samples were contaminated during sampling. The resampled test results came back “Not Detected” for one home and less than the 90<sup>th</sup>% value for lead in the other. Both homes were significantly below the 1300 ppb “Action Level” for copper in the resampled tests. State and EPA rules would not allow discarding of the improperly collected samples thereby resulting in two of the exceedances for lead and copper as noted in the above table.

\* Unregulated contaminants are those for which EPA has not established drinking water standards. Monitoring helps EPA to determine where certain contaminants occur and whether it needs to regulate those contaminants. Some unregulated contaminants are tested in routine samples and those results are available upon request.

\*\* 90% samples collected were at or below the level reported for our water.

\*\*\* If present, elevated levels of lead can cause serious health problem, especially for pregnant woman and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The City of St. Louis (GAWA) 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 at 1-800-426-4791 or at <http://water.epa.gov/drink/info/lead/index.cmf>.

Infants and children who drink water containing lead in excess of the A.L. could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.

Copper is an essential nutrient, but some people who drink water containing copper on excess of the A.L. over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the A.L. over many years could suffer liver or kidney damage. People with Wilson’s Disease should consult their personal physician.

While your drinking water meets EPA's standard for arsenic, it does contain low levels of arsenic. EPA's standard balances the current understanding of arsenic's possible health effects against the cost of removing arsenic from drinking water. EPA continues to research the health effects of low levels of arsenic, which is a mineral known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems.

Many water suppliers add a disinfectant to drinking water to kill germs such as giardia and E.coli. More disinfectant may be added after heavy rainstorms to guarantee these germs are killed.

The State and EPA require us to test our water on a regular basis to ensure its safety. We met and exceeded all the monitoring and reporting requirements for 2016.

We are committed to providing you safe, reliable, and healthy water. We are pleased to provide you with this information to keep you fully informed about your water. We will be updating this report annually, and will also keep you informed of any problems that may occur throughout the year, as they happen.

We invite public participation in decisions that affect drinking water quality. If you have any questions about the quality of your water supply or wish to be involved with the decisions concerning your water supply please attend any regular City Council meeting at St. Louis City Hall. Meeting dates are the first and third Tuesday of each month at 6:00 p.m.

For more information about your water, or the contents of this report, contact Steven R. Mepham at 989-681-3567 or at [smepham@stlouismi.com](mailto:smepham@stlouismi.com). For more information about safe drinking water, visit the U.S. Environmental Protection Agency at [www.epa.gov/safewater/](http://www.epa.gov/safewater/).