

# Annual Drinking Water Quality Report

CHARLESTON (IL0290100)

## Annual Water Quality Report

For the period of January 1 to December 31, 2017

### Source of Drinking Water:

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 activity.

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 at (800) 426-4791.

### 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 storm water 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 storm water runoff, and residential uses.
- Organic chemical contaminants, including synthetic and volatile organic chemical, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems.
- Radioactive contaminants, which can be naturally-occurring or be the result of oil and gas production and mining activities.

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

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised 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 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.

### Source Water Assessment Availability:

A Source Water Assessment summary is included for your convenience.

Illinois EPA considers all surface water sources of public water supply susceptible to potential pollution problems. Hence the reason for mandatory treatment of all public water supplies in Illinois. Mandatory treatment includes coagulation, sedimentation, filtration and disinfection. Primary sources of pollution in Illinois lakes can include agricultural runoff, land disposal (septic systems) and shoreline erosion. Under CWA Section 319, U.S. EPA provides grants for the Illinois EPA to finance projects that demonstrate cost-effective solutions to non point source (NPS) problems and promote public knowledge and awareness of NPS pollution. Section 319 projects funded for Lake Charleston Watershed include:

**Charleston Side Channel Reservoir:** This project involved the application of an innovative shoreline erosion control program including willow planting posts, a raft wave barrier test program, rip rap and gabions where needed, and selective lakeshore tree removal on Charleston Side Channel Reservoir (ILRBC). In addition, the city conducted an educational program through Eastern Illinois University and the Charleston High School. A watershed landowner survey was done, with the information being used to create an educational brochure.

As a part of Conservation 2000, Charleston received a Priority Lake and Watershed Implementation Program (PLWIP) grant to address shoreline erosion problems on the Charleston Side Channel Reservoir. PLWIP a program initiative started in July 1997 to support lake protection/restoration activities at "priority" lakes where causes and sources of problems are apparent, project sites are highly accessible, project size is relatively small, and local entities are in a position to quickly implement needed treatments. Priority lakes are identified by the Agency in a report entitled "Targeted Watershed Approach - A Data Driven Prioritization" (Document No. IEPA/BOW/97-004). Priority lakes are generally high quality recreational or unique aquatic resources, and/or lakes serving multiple uses (i.e., recreation and public water supply) in need of protection/restoration. In addition, the City installed a new dike to help reduce flooding. This was funded under The Emergency Watershed Protection Program (EWPP) administered by the U.S. Department of Agriculture and the Natural Resource Conservation Service (NRCS).

Also under Conservation 2000, the Embarras River Management Association (ERMA) partnered with Illinois DNR and received funding to conduct several projects along the Embarras River. The partnership formed in 1996 through the efforts of the Embarras River Management Association to improve water quality and quantity, reduce soil erosion and flooding, while providing better fish and wildlife habitat. The partnership also seeks to improve recreational opportunities and concurrently preserve, maintain and enhance natural areas. Current projects include:

- ▶ An education project to expand and coordinate training from the U.S. Army Corps of Engineers in stream bank stabilization technology.
- ▶ A landowner education project to introduce riparian buffers and assist riverside landowners in planting seedlings.
- ▶ A habitat improvement project to construct five pilot dry dams that will reduce erosion as well as provide natural habitat.

In order to help farmers in adopting sound agricultural practices the Illinois Council on Best Management Practices (C-BMP) was formed. The Council is a coalition of agribusiness and agricultural producer organizations with the support of the University of Illinois Extension and serves as a clearinghouse on current research to protect water quality in Illinois. The Council also provides information and support to local watershed groups to help implement sound water quality initiatives and can offer educational assistance and help facilitate the technical and financial resources needed to carry out water quality objectives. For more information on C-BMP contact Dr. George Czapar, Springfield Extension Center, P.O. Box 8199, Springfield, IL 62791, email: [g-czapar@uiuc.edu](mailto:g-czapar@uiuc.edu). For more information on BMPs, please refer to the web site at <http://www.ctic.purdue.edu>, as well as A Guide to Illinois Lake Management available from Illinois EPA. The Illinois Agronomy Handbook should also be used as guidance in implementing BMPs.

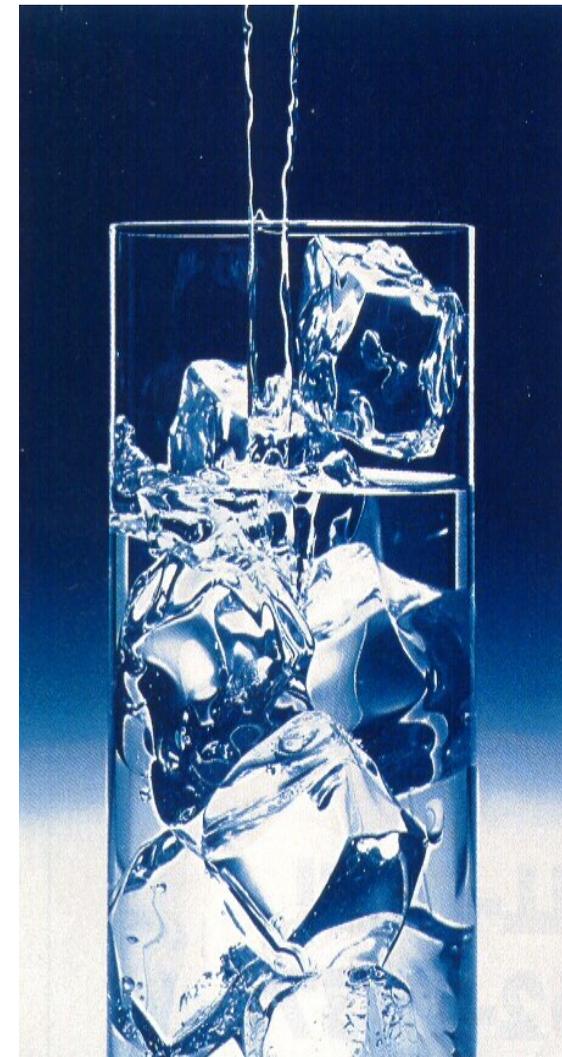
In a national effort to ensure adequate protection against groundwater contamination from the herbicide atrazine, U.S. EPA made significant changes to the atrazine use label in 1990. It is a violation of law to apply, mix, or load atrazine within 50 feet of any well, including water wells, irrigation wells, livestock water wells, abandoned wells or sinkholes. In 1992, the atrazine label was further amended to protect surface waters by requiring a 200 foot application setback for lakes and reservoirs. In addition, there is a 66 foot setback from any point where field surface water runoff enters a stream or river. A concerted effort to incorporate best management practices for atrazine applications is on-going, an atrazine BMP document is available from Novartis Crop Protection, or by contacting the Illinois Fertilizer & Chemical Association at (800) 892-7122.

In an effort to minimize the impact of livestock facilities on water resources on a statewide basis, livestock facilities are now regulated under the Livestock Management Facilities Act. This legislation is designed to keep Illinois' livestock industry productive and environmentally responsible by establishing requirements for design, construction, operation and management of livestock facilities and waste-handling structures. Detailed information on the Livestock Management Facilities Act may be found at the website <http://www.agr.state.il.us>. In addition, further watershed protection efforts and priorities of the Illinois EPA, Illinois Department of Agriculture, Illinois Department of Natural Resources, U.S. Department of Agriculture's Natural Resources Conservation Service, U.S. Army Corps of Engineers, and The Nature Conservancy are described and illustrated at the web site <http://www.epa.state.il.us/water/unified-watershed-assessment/index.html>.

This report is intended to provide you with important information about your drinking water and the efforts made by the CHARLESTON water system to provide safe drinking water. The source of drinking water used by CHARLESTON is Surface Water. Source Water Information: Intake (01670) Lake Charleston, Surface Water and Intake (01680) Embarras River, Surface Water. For more information regarding this report, contact: the Water Plant Superintendent, Trevor Stewart at 345-2977 or visit the City of Charleston web site: [www.charlestonillinois.org](http://www.charlestonillinois.org).

*Este informe contiene información muy importante sobre el agua que usted bebe. Tradúzcalo ó hable con alguien que lo entienda bien.*

# Consumer Confidence Report 2018



The City of Charleston is proud to present these test results to you, our customers. The Environmental Protection Agency, EPA, requires drinking water suppliers to provide this "Consumer Confidence Report" to their customers each year.

# 2017 REGULATED CONTAMINANTS DETECTED

*Please note that the City of Charleston did NOT receive ANY violations for the 2017 sampling period*

## Lead and Copper

Lead and Copper	Date Sampled	MCLG	Action Level (AL)	90th Percentile	# Sites Over AL	Units	Violation	Likely Source of Contamination
Copper	2017	1.3	1.3	0.084	0	ppm	No	Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems.
Lead	2017	0	15	4.2	1	ppb	No	Corrosion of household plumbing systems; Erosion of natural deposits

— 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. We 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 and 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>. —

## WATER QUALITY TEST RESULTS

REGULATED CONTAMINANTS	Highest Level Detected	Range of Levels Detected	Unit of Measurement	MCLG	MCL	Violation	Likely Source of Contamination
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### Disinfectants & Disinfection By-Products

Bromate Collection Date: 2017	3	0 - 1.3	ppb	0	10	No	By-product of drinking water disinfection.
Chloramines Collection Date: 12/31/2017	2	1.9 - 2.2	ppm	MRDLG=4	MRDL=4	No	Water additive used to control microbes
Haloacetic Acids (HAA5) * Collection Date: 2017	9	0 - 8.67	ppb	No goal for the total	60	No	By-product of drinking water disinfection
THM (Total Trihalomethanes) * Collection Date: 2017	24	10.35 - 44.6	ppb	No goal for the total	80	No	By-product of drinking water disinfection

\* Not all sample results may have been used for calculating the Highest Level Detected because some results may be part of an evaluation to determine where compliance sampling should occur in the future.

### Inorganic Contaminants

Arsenic Collection Date: 2013	1	1.2 - 1.2	ppb	0	10	No	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes.
Barium Collection Date: 2017	0.015	0.015 - 0.015	ppm	2	2	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Fluoride Collection Date: 2017	0.6	0.649-0.649	ppm	4	4.0	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Iron Collection Date: 2017	0.4	0.37-0.37	ppm		1.0	No	This contaminant is not currently regulated by the USEPA. However, the state regulates. Erosion of natural deposits.
Nitrate (measured as Nitrogen) Collection Date: 2017	1	0.5 - 0.5	ppm	10	10	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Sodium Collection Date: 2017	18	18 - 18	ppm			No	Erosion from naturally occurring deposits: Used in water softener regeneration

There is not a state or federal MCL for sodium. Monitoring is required to provide information to consumers and health officials that are concerned about sodium intake due to dietary precautions. If you are on a sodium-restricted diet, you should consult a physician about this level of sodium in the water.

### Radioactive Contaminants

Combined Radium 226/228 Collection Date: 04/03/2014	.707	0.707 - 0.707	pCi/L	0	5	No	Erosion of natural deposits.
Gross alpha excluding radon and uranium—Collection Date: 4/3/2014	.232	0.232 - 0.232	pCi/L	0	15	No	Erosion of natural deposits.

**Total Organic Carbon:** The percentage of Total Organic Carbon (TOC) removal was measured each month and the system met all TOC removal requirements set, unless a TOC violation is noted in the violations section.

**Note:** The state requires monitoring of certain contaminants less than once per year because the concentrations of these contaminants do not change frequently. Therefore, some of this data may be more than one year old.

**DEFINITIONS:** The tables contain scientific terms and measures, some of which may require explanation.

**MCL (Maximum Contaminant Level):** The highest level of a contaminant that is allowed in drinking water. MCL's are set as close to the Maximum Contaminant Level Goal as feasible using the best available treatment technology.

**MCLG (Maximum Contaminant Level Goal):** The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLG's allow for a margin of safety.

**MRDL (Maximum Residual Disinfectant Level):** The highest level of disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

**MRDLG (Maximum Residual Disinfectant Level Goal):** 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 contaminants.

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

**ALG (Action Level Goal):** The level of a contaminant in drinking water below which there is no known or expected risk to health. ALG's allow for a margin of safety.

**ppm:** milligrams per liter or parts per million—or one ounce in 7,350 gallons of water

**ppb:** micrograms per liter or parts per billion—or one ounce in 7,350,000 gallons of water

**avg:** Regulatory compliance with some MCLs are based on running annual average of monthly samples

**na:** not applicable

### TURBIDITY

Limit (Treatment Technique)	Lowest Monthly % meeting limit	Violation	Source
0.3 NTU	100 %	No	Soil runoff.

Limit (Treatment Technique)	Highest Single Measurement	Violation	Source
1.0 NTU	0.41 NTU	No	Soil runoff.

**Information Statement:** Turbidity is a measurement of the cloudiness of the water caused by suspended particles. We monitor it because it is a good indicator of water quality and the effectiveness of our filtration system and disinfectants.

### Unregulated Contaminant Monitoring Rule (UCMR3)

Substance	Year Sampled	Units	Amount Detected (Average)	Range of Detections	Typical Source
Chlorate	2014	ppb	912.5	540-1200	Agricultural defoliant or desiccant; disinfection byproduct; and used in production of chlorine dioxide.
Chromium	2014	ppb	1.6	1.5 - 1.8	Naturally occurring element; used in making steel and other alloys; used for chrome plating, dyes, and pigments, leather tanning, and wood preservation.
Chromium 6	2014	ppb	1.6	1.3 - 1.9	Naturally occurring element; used in making steel and other alloys; used for chrome plating, dyes, and pigments, leather tanning, and wood preservation.
Molybdenum	2014	ppb	1.1	1.0 - 1.2	Naturally occurring element found in ores and present in plants, animals, and bacteria; commonly used form molybdenum trioxide used as a chemical reagent.
Strontium	2014	ppb	64.9	59 - 70	Naturally occurring element; historically, commercial use of strontium has been in the faceplate glass of cathode-ray tube televisions to block x-ray emissions.
Vanadium	2014	ppb	0.7	0.43 - 1.10	Naturally occurring elemental metal; used as vanadium pentoxide which is a chemical intermediate and a catalyst.

Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted. A maximum contaminant level (MCL) for these substances has not been established by either state or federal regulations, nor has mandatory health effects language.

### Source Water Assessment

We want our valued customers to be informed about their water quality. If you would like to learn more, please feel welcome to attend any of our regularly scheduled meetings. The source water assessment for our supply has been completed by the Illinois EPA. If you would like a copy of this information, please stop by City Hall or call our water operator at 345-2977. To view a summary version of the completed Source Water Assessments, including: Importance of Source Water; Susceptibility to Contamination Determination; and documentation/recommendation of Source Water Protection Efforts, you may access the Illinois EPA website at <http://www.epa.state.il.us/cgi-bin/wp/swap-fact-sheets.pl>.

Illinois EPA considers all surface water sources of public water supply to susceptible to potential pollution problems. Hence the reason for mandatory treatment of all public water supplies in Illinois. Mandatory treatment includes coagulation, sedimentation, filtration and disinfection. Primary sources of pollution in Illinois lakes can include agricultural runoff, land disposal (septic systems) and shoreline erosion.