



City of Carlyle Annual Drinking Water Quality Report for Calendar Year 2016

CARLYLE
IL0270300

Annual Water Quality Report for the
period of January 1 to December 31,
2016

This report is intended to provide you
with important information about your
drinking water and the efforts made by
the CARLYLE water system to provide
safe drinking water.

For more information regarding this
report contact:

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

For opportunities for public participation
for the Carlyle PWS, please contact City
Hall at 618-594-2468 to find out when
and where the City Council and the Water
Committee meet.

Source of Drinking Water

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and groundwater 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.

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 chemicals, 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.

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.

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. 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 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).

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primary 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 tap 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>

Source Water Name Type of Water Report Status Location

IN60043-KASKASKIA RIVER 0.5 MI S OF CARLYLE RESE SW

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 (618) 594-3321. 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 community water supply to be susceptible to potential pollution problems, hence, the reason for mandatory treatment for all surface 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.

2016 Regulated Contaminants Detected (Carlyle)

Lead and Copper

Definitions:

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

Action Level Goal (ALG): 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.

Lead and Copper	Data Sampled	MCLG	Action Level (AL)	90 th Percentile	# Sites Over AL	Units	Violation	Likely Source of Contamination
Copper	08/26/2014	1.3	1.3	0.26	0	ppm	No	Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing systems
Lead	08/26/2014	0	15	2.3	0	ppb	No	Corrosion of household plumbing systems; Erosion of natural deposits.

Infants and children who drink water containing lead in excess of the action level 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.

Water Quality Test Results

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

Maximum Contaminant Level Goal (MCLG): 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.

Maximum Contaminant Level (MCL): 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.

Maximum Residual Disinfectant Level Goal (MRDLG): The level of disinfectant in drinking water 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.

Maximum Residual Disinfectant Level (MRDL): 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.

ppm or mg/l: milligrams per liter or parts per million - or one ounce in 7,350 gallons of water.

ppb or ug/l: micrograms per liter or parts per billion - or one ounce in 7,350,000 gallons of water.

na: not applicable.

Avg: Regulatory compliance with some MCLs are based on running annual average of monthly samples.

pCi/L: picocuries per liter is the measurement of the natural rate of disintegration of radioactive contaminants in the water.

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

Regulated Contaminants

Disinfectants & Disinfection By-Products	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source Of Contaminant
Chloramines	12/31/2016	2.8	0.8 – 3.2	MRDLG=4	MRDL=4	ppm	No	Water additive used to control microbes
Haloacetic Acids (HAA5)	2016	38	23 – 44.8	No goal for the total	60	ppb	No	By-product of drinking water chlorination
TTHMs [Total Trihalomethanes]	2016	45	24.8 - 45	No goal for the total	80	ppb	No	By-product of drinking water chlorination
Inorganic Contaminants	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source Of Contaminant
Barium	2016	0.046	0.046 – 0.046	2	2	ppm	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Fluoride	2016	0.9	0.878 – 0.878	4	4	ppm	No	Erosion of natural deposits; Water additive which promotes strong teeth; Fertilizer discharge
Manganese	2016	1	1.4 – 1.4	150	150	ppb	No	Erosion of natural deposits; This contaminant is not currently regulated by the USEPA.
Nitrate (As N)	2016	1	1.1 – 1.1	10	10	ppm	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits

State Regulated Contaminants	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source Of Contaminant
Sodium 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.	2016	10	9.8 – 9.8	N/A	N/A	ppm	No	Erosion of naturally occurring deposits; used in water softener regeneration

Synthetic Organic Contaminants (including pesticides and herbicides)	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source Of Contaminant
Atrazine	2016	0.45	0.0 – 0.45	3	3	ppb	No	Runoff from herbicide used on row crops
Radioactive Contaminates	Collection Date	Highest Level Detected	Range of Levels Detected	MCLG	MCL	Units	Violation	Likely Source Of Contaminant
Combined Radium 226/228	11/10/2015	0.6	0.6 – 0.6	0	5	(pCi/L)	No	Erosion of natural deposits
Gross alpha emitters excluding radon and uranium	11/10/2015	2.89	2.89 – 2.89	0	15	(pCi/L)	No	Erosion of natural deposits

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.

Not all samples 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.

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 NTU	0.18	No	Soil Runoff

Information Statement: Turbidity is measured in Nephelometric Turbidity Units, it 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.

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.

Violations Table

Violation Type	Violation Begin	Violation End	Violation Explanation	Corrective Action
NA	NA	NA	NA	NA

There were no violations in 2016.