SAVE WATER IN THE YARD THIS SUMMER

As temperatures rise in the summer, so does our outdoor water use, mostly on lawns and landscapes.

29 billion gallons of daily household water use across the U.S.

9 billion gallons come from daily residential outdoor water use, mainly for landscape irrigation.

Water use spikes in the summer!

Depending on the region, homeowners use **30-60%** of their water outdoors.

50% of that is wasted, in part, due to overwatering.

Average family's water use:

320 gallons per day

During the summer, can be up to

1,000 gallons per day

Some even use up to

3,000 gallons per day

—equal to leaving a garden hose running for nearly

8 hours!

= 100 gallons

Simple Things We Can All Do

Step on it: Step on the lawn: if the grass springs back, it doesn't need water.

Leave it long: Longer grass promotes a more drought-resistant lawn, reduced evaporation, and fewer weeds.

Take a sprinkler break: Grass isn't really meant to be bright green in the summer.

Simple Things Irrigation System Owners Can Do

Homes with automatic irrigation systems can use about **50%** more water outdoors.

Timing is everything: Plan to water in the early morning or evening to beat daytime evaporation.

Look for the label: If your system uses a clock timer, consider upgrading to a WaterSense labeled controller that acts like a thermostat for your lawn, using local weather data to determine when and how much to water. They can reduce irrigation water use by 15%, saving nearly **8,800 gallons** of water per year.

WaterSense Meets EPA Criteria

Go with a pro: Contractors certified through a WaterSense labeled program can audit, install, or maintain home irrigation systems so no water is wasted.

Tune up your system: Just 1 broken sprinkler head could waste up to **25,000** gallons of water and **$90+** over a 6-month irrigation season — the cost of about 300 daffodil bulbs.

Inspect irrigation systems, and fix leaks and broken or clogged sprinkler heads.

Make sure you're watering the lawn, not the sidewalk or driveway!

WaterSense, a partnership program by the U.S. Environmental Protection Agency, seeks to protect the future of our nation's water supply. For more tips on reducing outdoor water use, visit www.epa.gov/watersense/outdoor.

Look for WaterSense

City of Carmel Utilities

CITY OF CARMEL
Jim Brainard, Mayor
One Civic Square, Carmel, IN 46032

EPA WaterSense PARTNER

EPA's Safe Drinking Water (800) 426-4791 www.EPA.gov

Questions?

If you have any questions about this report or concerning your water utility, please contact Carmel Utilities at 317-571-2443 or go to the Utilities page on the City of Carmel website at www.carmel.in.gov

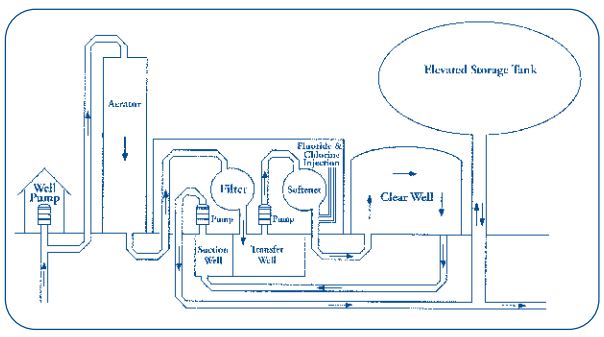
For maintenance concerns or questions about hydrants, taps or mains, call the water utilities operations facility at 317-733-2855.

Carmel Utilities

2019 WATER QUALITY REPORT

We are pleased to report that your tap water met all Environmental Protection Agency (EPA) and state standards in 2019.

Our 3-Step Water Treatment Process



1) Iron Removal–The water treatment plant aerates the water to oxidize the soluble iron found naturally in well water. The oxidized iron adheres to itself forming clumps that are filtered out of the water by iron filters.

2) Water Softened–Then, the iron filtered water passes through a process where the water is softened to 8 grains hardness, which is considered moderately hard water. Should you desire water that has been softened to zero (0) grains hardness, a home softener will be needed. During periods of extremely high summer water usage, the level of softening may be decreased to meet customer demand.

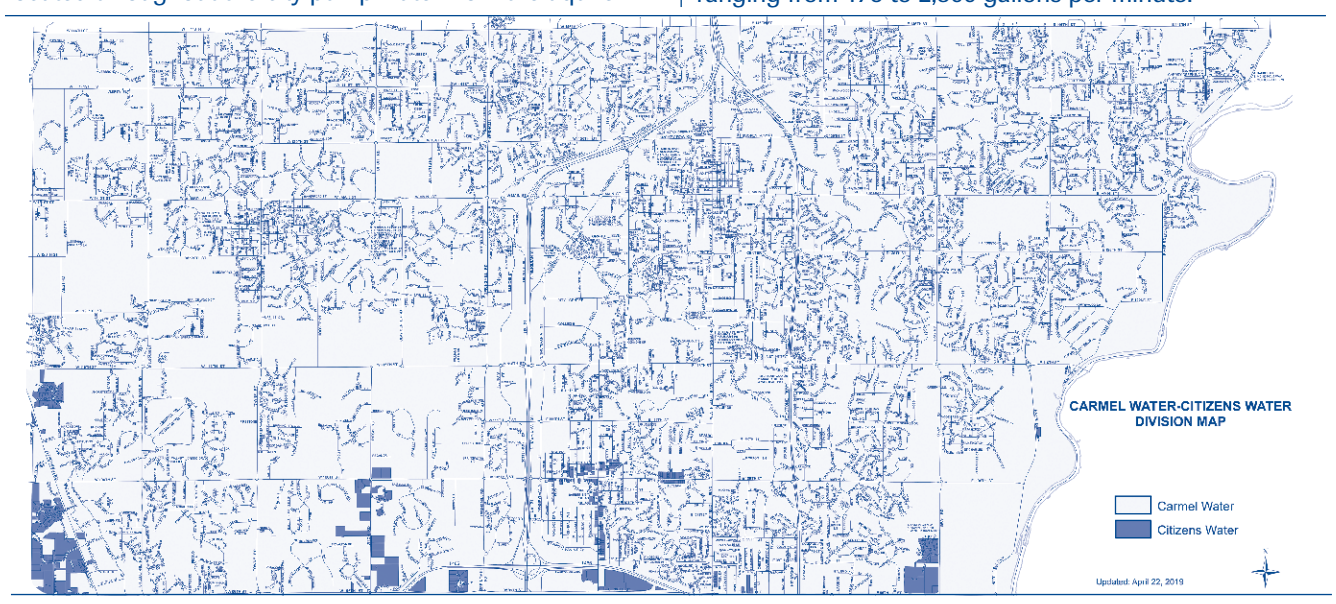
3) Chlorine and Fluoride Added–Chlorine is added to destroy any harmful bacteria present and to maintain a level of protection as the water travels through the distribution system. Fluoride is added to help strengthen resistance to cavities in teeth. Following the injection of chlorine and fluoride, the water enters the distribution system to be delivered to Carmel's homes and businesses.

People with Compromised Immune Systems

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 microbiological contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

Carmel's Water Supply Source

Carmel's water supply comes from a ground water source called an aquifer. The aquifer is commonly referred to as the Upper White River Basin Watershed. Nineteen wells located throughout the city pump water from the aquifer to four water plants for treatment. The production wells range in depth from 49 to 108 feet deep, are 10 to 36 inches in diameter, and have pumping capacities ranging from 175 to 2,800 gallons per minute.



Source of Carmel Clay's water supply that comes from Citizens Water

White River supplies two of the four surface water treatment plants: White River and White River North. Morse Reservoir, near Noblesville, stores water to assure a dependable supply in the White River to these plants. Fall Creek is another surface water supply. Geist Reservoir stores water to assure an adequate supply in Fall Creek for the Fall Creek Treatment Plant.

A number of wells are used intermittently to supplement the supplies to the White River, White River North, and Fall Creek plants. Citizens Water also receives some surface water from Eagle Creek Reservoir which supplies water to the T.W. Moses plant.

Currently, Citizens Water has five groundwater stations that serve smaller portions of its service area. These are White River North, Geist Station, Harding Station, South Well Field, and Ford Road Plant. These groundwater stations treat water pumped from underground water sources called aquifers.

IDEM Hoosier Water Guardian

Hoosier Water Guardian Award

Awarded to communities who go above and beyond the state's requirements for protecting their drinking water supply.

GROUNDWATER GUARDIAN

Groundwater Guardian

Educates people and inspires action to ensure sustainable, clean groundwater for future generations.

2019 WATER QUALITY RESULTS

Carmel Utilities routinely monitors for constituents in your drinking water according to Federal and State laws. This table shows the results of our monitoring for the period of January 1st to December 31st, 2019.

As water travels over the land or underground, it can pick up substances or contaminants. The chart below gives quick look at some of the substances that the EPA requires the utility to test for. The contaminant is listed to the left, followed by the maximum amount allowed by regulations and then the amount that we found in our water. The tests are performed on treated or "finished" water (excluding the last three listed in this chart). See the definitions at the bottom of the chart.

REGULATED SUBSTANCES

SUBSTANCES (UNIT OF MEASURE)	YEAR SAMPLED	MCL (MRDL)	MCLG [MRDLG]	CARMEL WATER UTILITY PWSID# 5229004 SYSTEM WIDE	CARMEL WATER UTILITY PWSID# 5229004 RANGE LOW-HIGH	CARMEL-CLAY WATER UTILITY PWSID# 5229024 SYSTEM WIDE	CARMEL-CLAY WATER UTILITY PWSID# 5229024 RANGE LOW-HIGH	VIOLATIONS	TYPICAL SOURCE
Atrazine (ppb)	2019	3	3	ND	ND	0.5	ND-2.8	NO	Herbicide runoff
Barium (ppm)	2019	2	2	ND	ND - .08	0.12	0.04-0.29	NO	Natural deposits
Benzo(a)pyrene (ppb)	2019	0.2	0	ND	ND	ND	ND	NO	Leaching from linings of water storage tanks and distribution lines
Chlorine (ppm)	2019	4	4	1.04	0.22 - 1.58	1.7	0.02 - 2.9	NO	Water additive used to control microbes
Chromium (ppb)	2019	100	100	ND	ND	BDL	ND - 2.6	NO	Natural deposits
Combined Radium (pCi/L)	2019	5	0	N/A	ND	N/A	0.5 - 1.73	NO	Erosion of natural deposit
Fluoride (ppm)	2019	4	4	0.73	0.1 - 1.3	0.7	0.16 - 1.4	NO	Natural deposits and treatment additive
Gross Alpha, Excl. Radon & Uranium (pCi/L)	2019	15	0	N/A	ND	N/A	-0.28 - 6.7	NO	Erosion of natural deposit
Haloacetic Acid [HAA] (ppb)	2019	60	NA	9.8	8.4 - 11.75	31	7.0 - 57	NO	By-product of chlorination treatment
Nitrate (ppm)	2019	10	10	ND	ND-1.02	0.79	ND - 4.5	NO	Fertilizers, septic tank leachate
Simazine (ppb)	2019	4	4	ND	ND	BDL	BDL - 0.30	NO	Herbicide runoff
TTHMs (Total Trihalomethanes)(ppb)	2019	80	NA	31.2	22.1 - 37.1	42	13 - 70	NO	By-product of chlorination treatment
Total Coliform Bacteria (% positive samples)	2019	5%		0%	0% - 4.4%	0.650%	0%-2.0%	NO	Naturally present in the environment
Turbidity (NTU)	2019	1	NA		0.18 (max)		0.30 (max)	NO	Soil runoff
Turbidity (Lowest monthly percent of samples meeting limit)	2019	95% < 0.3			100%		100.0%	NO	Soil runoff—turbidity is a measurement of the cloudiness of the water caused by suspended particles. It is a good indicator of water quality and the effectiveness of our filtration.
Uranium (ppb)	2019	30	0		ND	NA	ND - 9.7	NO	Erosion of natural deposit
2,4-D (ppb)	2019	70	70	ND	ND	0.25	ND - 2.0	NO	Herbicide runoff
Tap water samples were collected for lead and copper analyses from samples sites throughout the community		**AL**	**MCLG**	**CARMEL WATER UTILITY**		**CARMEL-CLAY WATER UTILITY**			
Copper (ppm)	2019	1.3	1.3	N/A	0 of 30 > AL	0.14	0 of 55 > AL	NO	Corrosion of customers plumbing
Lead (ppb)	2019	15	0	N/A	0 of 30 > AL	2.6	0 of 55 > AL	NO	Corrosion of customers plumbing

SECONDARY SUBSTANCES

SUBSTANCES (UNIT OF MEASURE)	YEAR SAMPLED	SMCL MCL (MRDL)	MCGL MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATIONS	TYPICAL SOURCE
Aluminum (ppb)	2019	200		ND	ND	38	ND - 175	NO	Natural deposits and treatment additive
Chloride (ppm)	2019	250		ND	ND	64	21 - 156	NO	Natural deposits and treatment additive
Hardness (grains/gal)	2019	NA		11	5 - 28	18	9 - 28	NO	Erosion of natural deposit; leaching
Iron (ppm)	2019	0.3		0.02	ND-0.07	ND	ND - 0.61	NO	Erosion of natural deposit; leaching
Maganese (ppm)	2019	0.05		ND	ND	0.41	ND - .87	NO	Erosion of natural deposit; leaching
Metolachlor (ppb)	2019	NA		ND	ND	0.11	ND - .43	NO	Herbicide runoff
Nickel (ppb)	2019	NA		ND	ND	BDL	ND - 2.1	NO	Erosion of natural deposit; leaching
pH (Units)	2019	6.5-8.5		7.74	7.18 - 8.46	7.7	6.96 - 8.23	NO	
Sodium (ppm)	2019	NA		133	84 - 162	38	12 - 125	NO	Erosion of natural deposit; leaching
Sulfate (ppm)	2019	250		ND	ND	45	7.9 - 167	NO	Erosion of natural deposit; leaching
Zinc (ppb)	2019	5000		ND	ND	BDL	ND - 5.7	NO	Natural deposits

UNTREATED SOURCE WATER DATA

			CARMEL WATER UTILITY Plant 1 Flow Splitting Bldg.	CARMEL-CLAY WATER UTILITY	
Cryptosporidium (org/10L)			N/A	1.5 (ND - 32 oocysts/10L)	
Giardia (org/10L)			N/A	10.7 (ND - 196 cysts/10L)	
TOC (ppm)			.95 (1.22 - 1.54)	3.8 (2.6 - 6.0)	

DEFINITIONS

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

BDL (Below Detectable Limits) – laboratory analysis indicates the constituent is below detectable limits of the instruments and methods used to detect this constituent.

NA (Not Applicable) – not required to test for this constituent during the 2019 calendar year.

ND (Non-Detects) – laboratory analysis indicates that the constituent is not present.

PPM (Parts per million) – one part substance per million parts water (or milligrams per liter)

PPB (Parts per billion) – one part substance per billion parts water (or Micrograms per liter)

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

mrem/yr (Millirems per year) – measure of radiation absorbed by the body.

NTU (Nephelometric Turbidity Unit) – nephelometric turbidity unit is a measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

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

MCL (Maximum Contaminant Level) – The "Maximum Allowed" (MCL) is 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.

MCLG (Maximum Contaminant Level Goal) The "Goal" (MCLG) is 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.

MRDL (Maximum Residual Disinfectant Level) – 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.

MRDLG (Maximum Residual Disinfectant Level Goal) – 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.

Testing for Cryptosporidium

Cryptosporidium is a microscopic organism that lives in the intestines of animals and people. When ingested this microscopic pathogen may cause a disease called cryptosporidiosis, which has flu-like symptoms. Although there has been no cryptosporidium found in treated, finished drinking water, cryptosporidium is found in source water such as White River, Fall Creek and Eagle Creek Reservoir. The U.S. EPA has created the Long Term 2 Enhanced Surface Water Treatment Rule (LT2) for the sole purpose of reducing illness linked with the contaminant Cryptosporidium and other disease-causing microorganisms in drinking water. The rule will bolster existing regulations and provide a higher level of protection of your drinking water supply.

Water Purity

INFORMATION PROVIDED BY UNITED STATES ENVIRONMENT PROTECTION AGENCY

All sources of drinking water are subject to potential contamination by substances that are naturally occurring or man made. These substances can be microbes, inorganic or organic chemicals and radioactive substances.

All 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 the water poses a health risk.

More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at (800-426-4791).

Lead in Water

Carmel Utilities regularly tests drinking water for lead and takes steps in its treatment process to ensure corrosive elements do not result in elevated levels of lead in customer tap water. Lead exposure comes primarily from water service lines which extend from the water main to the home and/or from interior plumbing components. Homes built before 1950 are more likely to have lead pipes. Homes built before 1986 may have lead soldering. Carmel Utilities lead testing comes exclusively from homes most likely to have lead in its plumbing system. If you would like to determine if your home has lead in its plumbing components or service line, hire a licensed plumber who can best advise you.

Lead in Home Plumbing

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. Carmel Utilities 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 or at **www.epa.gov/safewater/lead.**

Water Contaminants Before Treatment

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 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 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, storm water runoff, and residential uses.
- Organic chemicals, 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 materials, which can be naturally occurring or be the result of oil and gas production and mining activities.

In order to ensure 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 (FDA) regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

Switch your showerhead ...save 2,700 gallons per year.
look for WaterSense
ShowerBetter