# 2018 WATER QUALITY REPORT

OF THE

# "CEDAR RAPIDS WATER COMPANY"

CITY OF CEDAR RAPIDS WATER DIVISION

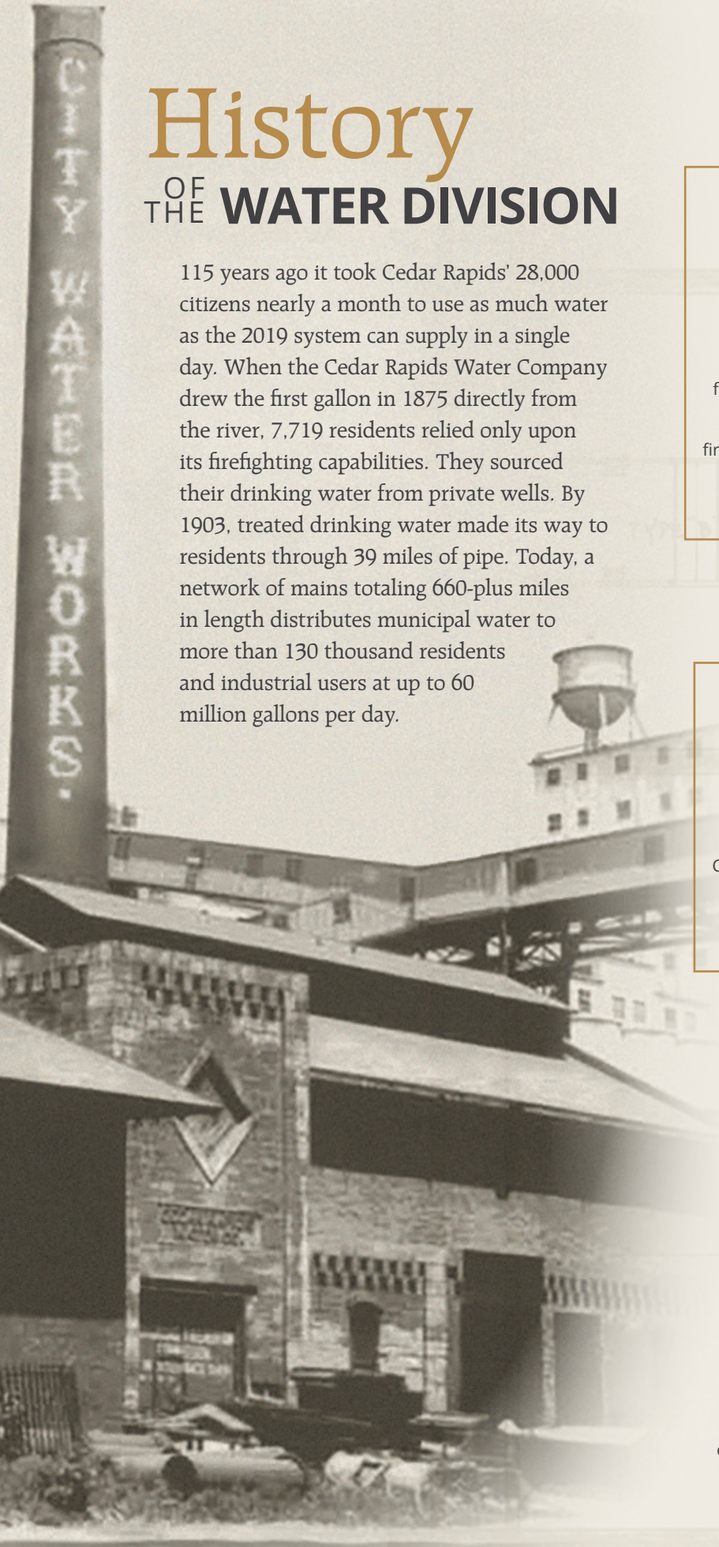

We work around the clock to ensure your drinking water is of the highest quality. This report illustrates the scrutiny water undergoes before and after it leaves our facilities.

*Serving the City of Cedar Rapids, the City of Robins, the Glenbrook Cove Subdivision of Marion and the Poweshiek Water Association.*

CEDAR RAPIDS
City of Five Seasons®

# History OF THE WATER DIVISION

115 years ago it took Cedar Rapids' 28,000 citizens nearly a month to use as much water as the 2019 system can supply in a single day. When the Cedar Rapids Water Company drew the first gallon in 1875 directly from the river, 7,719 residents relied only upon its firefighting capabilities. They sourced their drinking water from private wells. By 1903, treated drinking water made its way to residents through 39 miles of pipe. Today, a network of mains totaling 660-plus miles in length distributes municipal water to more than 130 thousand residents and industrial users at up to 60 million gallons per day.




**1875** City Council grants franchise, and deeds land near present-day Quaker Oats, to form the Cedar Rapids Water Company.

**1876**


Thursday Morning, Jan. 13, 1876.

THE FIRE FIEND!

The Pullman House Block in Ruins, and Passmore's Block, adjoining, Partially Destroyed.

Trials of the company's water capacity and firefighting strength were a public spectacle, but proved their worth on January 13, 1876 when the city experienced one of its most destructive fires ever. The fire ruined two important business blocks in the downtown. If not for the Water Works, the newspaper reported the entire business section might have been destroyed.

**1888** The system begins to supply valuable drinking water after discovery of an artesian aquifer nearly 1,200 feet under Cedar Rapids.

**1896**

Cedar Rapids becomes one of the first American cities to adopt "rapid sand filtration," which allowed the Company to treat water drawn directly from the Cedar River. Supply capacity grows to 2.4 million gallons per day.

**1903** Cedar Rapids taxpayers purchase the original water plant for $473,000 marking public ownership of the water utility.

**1922**

The new Bever Park Reservoir allows water to be saved and used during high-demand without straining facilities.

**1929** A $660,000 bond issue brings the construction of a new purification and softening plant. Daily capacity increases to 12 million gallons per day. Water is now softened to five grains per gallon.

**1950** A $5,885 master chlorinator, used in conjunction with a new ammoniator, addresses recurring odor and taste issues.

**1952** Public controversy ensues over the City's decision to add fluoride to the drinking water to promote dental health by preventing cavities. Complaining phone callers told of horses that would not drink and parakeets who became unaccountably silent overnight, indicative of the confusion in the community. Callers were informed firmly, but politely, that the odd behavior so described could not be due to fluoride, as it had not yet been added to the system. Fluoride was later added to the treatment process with little fanfare and the debate was slowly forgotten. Years later, independent studies conducted by various research groups would reveal no negative effects from drinking fluoridated water.

**1969** New filters and infrastructure additions at the J Avenue plant increase system capacity to 40 million gallons per day.

**1995** Northwest Water Treatment Plant comes online at Ellis Road, along with the City's first two horizontal collector wells, raising nominal water plant capacity to 60 million gallons per day—more than 25 times the capacity of 100 years earlier.

**2003** Horizontal Collector Wells 3 and 4 come online.

**2010**

Service, capacity, and capability improvements are implemented at J Avenue Plant. Regulatory requirements change for the City's source water, prompting the addition of ultraviolet (UV) disinfection treatment at both water plants.

**2012** A drought begins to affect the capacity of the city water supply. Work with the United States Geological Survey's Water Resources group has helped the Water division better understand how the aquifer supplying city water is replenished, and a new aquifer system model will better position the City to prepare for future droughts.

**2018** The Cedar Rapids Fire Department earns an improved rating of 2/2X for fire insurance, placing the City in the top three percent of all communities nationwide for its fire suppression delivery system.

**1951**

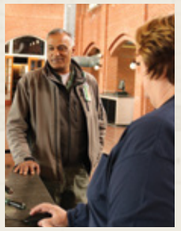
Additions to the J Avenue Water Plant double capacity from 12 to 24 million gallons per day. The plant was dedicated to H.F. Blomquist, who planned and constructed the original J Avenue Plant, made many improvements to the distribution system, and planned the new addition. He retired shortly after the beginning of construction.

**1963** The East Well Field was constructed and placed in service, followed by construction of the West Well Field throughout the 1960s and the Seminole Park Well Field in the 1970s. With new vertical wells, the Water Division suspended the practice of taking water directly from the river — allowing for it to be filtered by alluvial sand first — improving taste and odor issues.

**2008**

A historic, record flood temporarily shuts down 49 of the 50 wells that supply the city's water. A heroic response to help sandbagging efforts by nearly 1,000 citizens preserved the last functioning well. With assistance from the Federal Emergency Management Agency, the Water division later raised the height of every affected vertical well to a level higher than the flood. The project also raised electrical equipment for each horizontal collector well to protect from future flood damage.

**Today**



If you drink it; flush it; throw it away, recycle, or compost it, almost 250 employees take care of you every day in Cedar Rapids. Today, the Cedar Rapids Water division operates under the Utilities Department. Photographed are Water Utility Plant Manager Tariq Baloch and Water Plant Operations Manager Kathy Bierman in today's updated J Avenue Water Treatment Plant.


## Future

Work is underway to renew the J Avenue Water Treatment Plant. The new Kirkwood Boulevard tank and associated system improvements will improve resilience in water supply for the south end of the city and prepare for growth. Improvements planned for the Northwest Water Treatment Plant will improve its reliable capacity and resilience. These and many other efforts will position the City for continuing 144 years more service.

# THROUGH THESE HALLS

The Cedar Rapids Water Company dates back to 1875, a time when water was used for fighting fires and the thought of water at the tap was a luxury. For the past 90 years, the J Avenue Water Treatment Plant — known for its castle-like tower puncturing the skyline behind Cedar Lake — has purified the bulk of the City's water supply.

J Avenue Water Treatment Plant, 1930

When starting his work each day at the J Avenue Water Treatment Plant, City of Cedar Rapids Water Utility Plant Manager Tariq Baloch takes a trip back in time.

Welcomed through the building's ornate, Gothic Revival foyer, and passing the 1930s-era high service pumping station on the way to his office, Baloch often pauses a moment to reflect upon the Water division's rich past and his commitment to the residents and customers he serves.

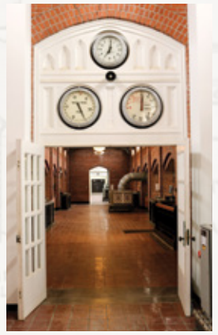
"This plant symbolizes one of our greatest natural resources. Walking through the building gives you a sense of the magnitude of the critical work our Water employees perform and how important it is for our residents and customers that we get it right every minute of the day," Baloch remarks. "There's very little that compares to it."

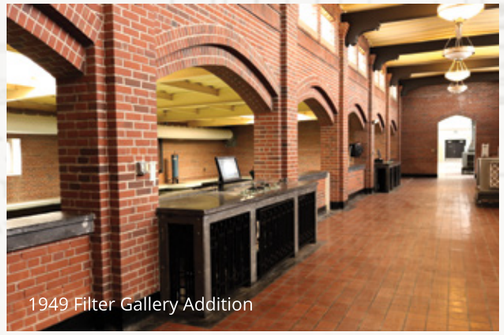
Chicago architect Victor Andre Matteson, then a member of the American Water Works Association known for his water plant designs, drafted the 1929 blueprints for the facility. Its distinctive, stately semblance continues to serve as an expression of Cedar Rapids residents' high regard for high-quality water.

Continuing down the hall to the filter gallery — a series of chambers filled with sand that aid in the purification of the City's water supply — the treatment plant has grown with the demands of a growing Cedar Rapids. Each new addition reflects design trends of the era in which they were constructed.

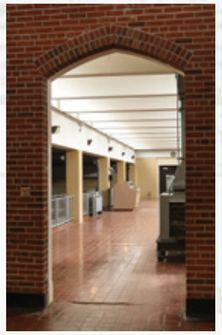
*The central corridor at the J Avenue Water Treatment Plant is akin to a walking time capsule. Construction techniques and furnishings reflect the period in which they were added. Cedar Rapids earned recognition as one of the first American cities to adopt rapid sand filtration, which transformed murky waters from the Cedar River into potable water at a time when the city drew its source water directly from the river.*

Original 1920s Treatment Plant





1949 Filter Gallery Addition



1969 Addition

2010 UV Treatment Addition

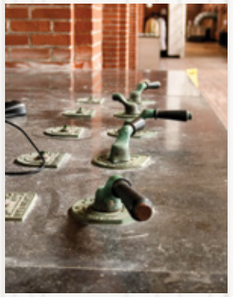
In 2017, the City began work on a phased project to update the filter galleries and improve plant infrastructure well past intended life expectancy. While some structures have seen updates in recent years, many have remained untouched for decades — in some cases, since the plant went into service in 1930.

"This will truly modernize the facility, enhance resiliency, and allow us to continue to put the historic plant to great use," says Steve Hershner, Utilities Director, who, like Baloch, has a long history with the Utilities Department. Hershner has been with the City for 28 years, and Baloch since 1989. They share a sense of urgency for the important upgrades underway, informed by their years of experience with plant operations.

Phase II work is currently underway. "It's like trying to work on the engine of an airplane while you're flying," says Hershner. Some of the most critical plant elements are original to the facility and haven't been significantly renovated in nearly 90 years.

Repairs are challenging, as they require the construction of alternate capacity arrangements before systems can go offline for maintenance. There are only a few months where the weather allows for work to be accomplished, from mid-October to mid March. Then the plant needs to be ready for full production capacity during the warmer season.

## PRESERVING HISTORY, PREPARING FOR THE FUTURE



While the building's historical, ornamental design has been preserved throughout the process, a refresh of the plant's underlying technologies is welcome. "In some elements of the plant we're still using valves, filters, and other components that were designed in the 1920s," explains Bruce Jacobs, Utilities Engineering Manager. "Those components have served us well, but these efforts to modernize the plant will make it reliable far into the future." New installation is state of the art, and the improvements will make future maintenance more efficient while keeping more of the plant's capacity online during the course of work.

During the current phase of construction, basins that soften the city's water will be drained, concrete work will be replaced, and new clarifiers will be installed, replacing equipment that has been in use for several decades. Future phases of the project will substantially refurbish the 1929-era filters, which remove suspended matter from the water.

When it powered up in 1930, then called the Cedar Rapids Water Works, the facility served 56,000 residents. The total cost of construction was $660,000. Today, the facility serves the majority of the water distribution system, providing 40+ million gallons per day capacity for water treatment essential to the City's more than 130,000 residents, industrial users, and the greater community. The plant's replacement value rings in at an estimated $450 million.

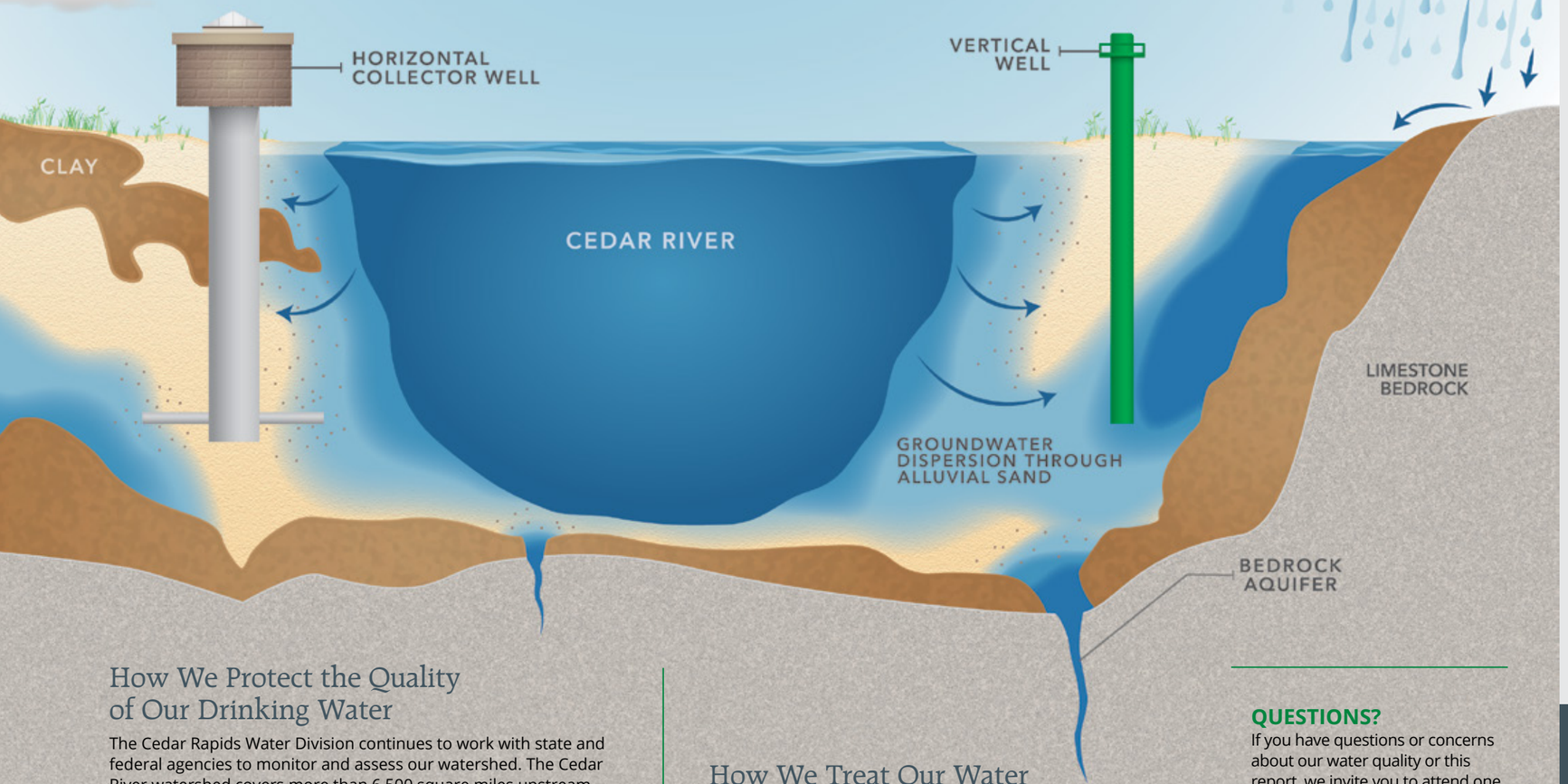
"This facility has served us for ninety years," says Hershner. "Ongoing investments ensure the city has safe, reliable, great-tasting water for years to come." ■

# WHERE OUR WATER COMES FROM

The City of Cedar Rapids obtains its drinking water supplies from shallow vertical and collector wells constructed in the sand and gravel deposits along the Cedar River. Those deposits form an underground water-bearing layer called an alluvial aquifer. Because of continuous pumping of the City's wells, most of the water in the aquifer is pulled from the river.

The rest of the water is supplied as water percolates up from a deeper bedrock aquifer or down from the top of the ground.

Our drinking water from those wells benefits from natural filtration through the riverbank. This natural sand filtration has proven to be a beneficial pretreatment to water before it reaches the City's two conventional lime-softening facilities.




## How We Protect the Quality of Our Drinking Water

The Cedar Rapids Water Division continues to work with state and federal agencies to monitor and assess our watershed. The Cedar River watershed covers more than 6,500 square miles upstream of Cedar Rapids and extends into southern Minnesota. Source water assessment identifies potential sources of contamination to the water we use to treat for drinking water purposes. Although efforts are made on many fronts, farm-field runoff continues to be a primary concern and risk for contamination of our source water. We continue to actively monitor the watershed and have initiated a watershed protection program.

## How We Treat Our Water

Our treatment process involves a multibarrier approach to protect our drinking water from the source to your tap. This includes source water monitoring; well-head protection; treatment processes of softening, filtration and disinfection; and distribution-system monitoring and maintenance.

### QUESTIONS?

If you have questions or concerns about our water quality or this report, we invite you to attend one of two upcoming public meetings:

**Saturday, June 1**
8 a.m. - Noon,
Downtown Farmers' Market

**Thursday, June 27**
5 - 6 p.m.,
NewBo City Market, 1100 3rd St. SE



# Educational Information

## NITRATE

A nitrate is a dissolved form of nitrogen found in fertilizers and sewage byproducts that may leach into groundwater and other water sources. Nitrates occur naturally in some waters. Over time, nitrates can accumulate in aquifers and contaminate groundwater.

Nitrate in drinking water at levels above 10 ppm is a potential health risk for infants less than six months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant, ask for advice from your health care provider.

## LEAD

Our drinking water contains little or no lead when it leaves our treatment plants. However, lead can leach into the water during overnight contact with the lead solder and brass faucets in some homes. Because of that, the Cedar Rapids Water Division (CRWD) collects and analyzes special samples quarterly from area homes to more frequently monitor the distribution system. Our tests show that most homes are at or well below the 15 parts per billion (ppb) — or 15 micrograms per liter of water — treatment technique standard set by the Environmental Protection Agency (EPA) for annual compliance monitoring.

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. The CRWD 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 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 (1-800-426-4791) or at www.epa.gov/safewater/lead.

The following state-approved laboratories can test your water for lead:

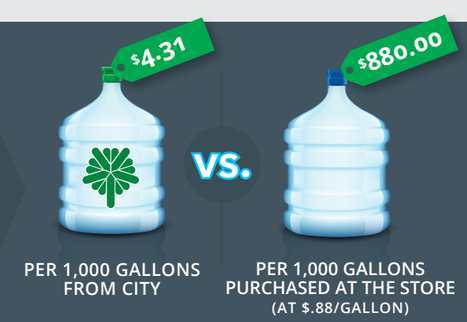
**State Hygienic Laboratory:** Oakdale, IA | 800-421-4692
**TestAmerica:** Cedar Falls, IA | 319-277-2401
**Keystone Labs:** Newton, IA | 641-792-8451

## AT-RISK POPULATIONS

It's important to be aware that some people may be more vulnerable than the general population to contaminants in drinking water. Immuno-compromised persons — those undergoing cancer chemo-therapy or organ transplants, some elderly or infants and people with HIV/AIDS or other immune system disorders — can be particularly at risk from infections. We ask anyone that may be at risk to seek advice about drinking water from their health care providers. Guidelines from the EPA and Centers for Disease Control on appropriate steps to lessen the risk of infection by microbial contaminants and/or Cryptosporidium are available from the National Safe Drinking Water Hotline at 1-800-426-4791.

## WATER VALUE

Cedar Rapids residents enjoy water rates that are among the lowest in the state.



# Water Quality Findings

This table summarizes required water quality monitoring results for regulated parameters that were detected in the 2018 calendar year. A comprehensive report of all water quality testing is available from the Water Division.

## WATER TREATMENT PLANTS - FINISHED WATER

| INORGANIC CHEMICALS | | | | | J AVE. PLANT | | NW PLANT | | |
|---|---|---|---|---|---|---|---|---|---|
| | UNITS | MCL | MCLG | VIOLATION | RANGE | REPORTED | RANGE | REPORTED | POSSIBLE SOURCES OF CONTAMINANT |
| Arsenic | µg/L | 10 | 0 | No | ND - 0.77 | 0.54 | ND - 0.67 | 0.38 | Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes |
| Nitrate | mg/L | 10 | 10 | No | 1.66 - 5.04 | 5.04 | 2.47 - 5.28 | 5.28 | Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits |
| Nitrite | mg/L | 1 | 1 | No | ND - 0.06 | 0.06 | ND - 0.04 | 0.04 | Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits |
| Sodium | mg/L | NA | NA | No | NA | 8.6 | NA | 7.9 | Erosion of natural deposits; added to water during treatment process |
| Fluoride | mg/L | 4 | 4 | No | 0.15 - 0.98 | 0.68 | 0.11 - 0.93 | 0.66 | Water additive which promotes strong teeth; erosion of natural deposits; discharge from fertilizer and aluminum factories |
| ORGANIC CHEMICALS | | | | | RANGE | REPORTED | RANGE | REPORTED | |
| Toluene | mg/L | 1 | 1 | No | ND - 0.0005 | 0.0005 | NA | ND | Discharge from petroleum factories. J Ave Plant Detect from 2016, 2018 result = ND |
| Atrazine | µg/L | 3 | 3 | No | ND - 0.50 | 0.10 | ND - 0.50 | 0.09 | Runoff from herbicide used on row crops |
| RADIONUCLIDES | | | | | RANGE | REPORTED | RANGE | REPORTED | |
| Combined Radium | pCi/L | 5 | 0 | No | NA | 1.1 | NA | ND | Erosion of natural deposits. J Ave Plant Detect from 2017, 2018 result = ND |
| Radium -226 | pCi/L | 5 | 0 | No | NA | ND | NA | ND | Erosion of natural deposits |
| Radium -228 | pCi/L | 5 | 0 | No | NA | 0.7 | NA | 0.8 | Erosion of natural deposits. NW Plant Detect from 2017, 2018 result = ND |
| Gross Alpha | pCi/L | 15 | 0 | No | NA | ND | NA | 0.7 | Erosion of natural deposits. NW Plant Detect from 2015, 2018 result = ND |
| TREATMENT TECHNIQUE INDICATORS | | | | | RANGE | REPORTED | RANGE | REPORTED | |
| Total Organic Carbon | Removal Credits | TT | NA | No | 1.00 - 3.03 | 1.57 | 0.28 - 2.91 | 1.33 | Naturally present in the environment |
| | | | | | Running Annual Average TOC Credits must be > 1.0 | | | | |
| Turbidity | NTU | TT | NA | No | 0.04 - 0.15 | 0.15 | 0.02 - 0.19 | 0.19 | Soil runoff |
| | Cannot exceed 1.0 NTU & Monthly no more than 5% > 0.3 NTU | | | | % > 0.3 NTU | | % > 0.3 NTU | | |
| | | | | | 0 | | 0 | | |

## DISTRIBUTION SYSTEM MONITORING

| LEAD AND COPPER RULE | UNITS | ACTION LEVEL (AL) | MCLG | VIOLATION | RANGE | 90TH PERCENTILE | 95TH PERCENTILE | SAMPLES EXCEEDING AL | POSSIBLE SOURCES OF CONTAMINANT |
|---|---|---|---|---|---|---|---|---|---|
| Lead | µg/L | 15 | 0 | NO | 0.1 - 44.1 | 1.7 | 32.2 | 3 | Corrosion of household plumbing systems; erosion of natural deposits |
| Copper | mg/L | 1.3 | 1.3 | NO | 0.0029 - 0.2200 | 0.0643 | 0.0771 | 0 | Corrosion of household plumbing systems; erosion of natural deposits |

| REVISED TOTAL COLIFORM RULE | JAN | FEB | MAR | APRIL | MAY | JUNE | JULY | AUG | SEPT | OCT | NOV | DEC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Total # Samples/Month | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 108 | 109 | 108 | 108 |
| # Positive Coliform Samples/Month | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Level 1 Assessment Required | No | No | No | No | No | No | No | No | No | No | No | No |
| Meets Monthly MCL of <5% Positive Coliform/Month | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes | Yes |

| DISINFECTANT & DISINFECTION BY-PRODUCTS | | | | | DISTRIBUTION SYSTEM | | |
|---|---|---|---|---|---|---|---|
| | UNITS | MRDL | MRDLG | VIOLATION | RANGE | REPORTED | |
| Total Chlorine Residual | mg/L | 4 | 4 | NO | 0.8 - 3.9 | 3.4 | Water additive used to control microbial growth |
| | UNITS | MCL | MCLG | VIOLATION | RANGE | REPORTED | |
| Total Trihalomethanes (TTHM) | µg/L | 80 | NA | NO | ND - 5.0 | 3.8* | By-product of drinking water disinfection |
| Total Haloacetic Acids (HAA5) | µg/L | 60 | NA | NO | ND - 7.0 | 1.8* | By-product of drinking water disinfection |

**Highest Locational Running Annual Average at Site DB02*



## UNREGULATED AND SECONDARY CHEMICALS

| INORGANIC CHEMICALS | | | | J AVE. PLANT | | NW PLANT | | |
|---|---|---|---|---|---|---|---|---|
| | UNITS | MCL | MCLG | RANGE | AVG | RANGE | AVG | POSSIBLE SOURCES OF CONTAMINANT |
| Chloride | mg/L | NA | 250 | 20.4 - 34.0 | 27.0 | 18.8 - 43.5 | 25.4 | Erosion of natural deposits, run-off |
| Copper | mg/L | NA | 1.0 | 0.0026 - 0.0083 | 0.0038 | 0.0011 - 0.0120 | 0.0070 | Corrosion of household plumbing, erosion of natural deposits |
| Manganese | mg/L | NA | 0.05 | 0.0101 - 0.0431 | 0.0181 | ND - 0.0014 | 0.0004 | Corrosion of household plumbing, erosion of natural deposits |
| Sulfate | mg/L | NA | 250 | 19.1 - 39.5 | 27.2 | 18.2 - 40.3 | 26.3 | Erosion of natural deposits |
| Zinc | mg/L | NA | 5 | 0.1550 - 0.2220 | 0.1899 | 0.1650 - 0.2480 | 0.2136 | Corrosion of household plumbing, erosion of natural deposits |
| ORGANIC CHEMICALS | | | | RANGE | AVG | RANGE | AVG | |
| Chloroform | µg/L | NA | 70 | 1.3 - 2.1 | 1.7 | 2.1 - 3.5 | 2.7 | By-product of drinking water disinfection |
| Bromodichloromethane | µg/L | NA | 0 | NA | ND | ND - 0.8 | 0.3 | |
| Dichloroacetic Acid | µg/L | NA | 0 | 3.0 - 4.0 | 3.2 | 2.0 - 5.0 | 3.5 | |
| Trichloroacetic Acid | µg/L | NA | 20 | NA | ND | ND - 1.0 | 0.2 | |
| Metolachlor | µg/L | NA | NA | ND - 0.40 | 0.18 | ND - 0.50 | 0.20 | Run-off from fertilizer used on row crops |
| RADIONUCLIDES | | | | RANGE | AVG | RANGE | AVG | |
| Radon | pCi/L | NA | NA | 43 - 80 | 72 | ND - 39 | 28 | Erosion of natural deposits |

## UNREGULATED CONTAMINANT MONITORING RULE (UCMR) 2

| NITROSAMINE COMPOUNDS | J AVE. TREATMENT PLANT | | J AVE. DISTRIBUTION AREA | | NW TREATMENT PLANT | | NW PLANT DISTRIBUTION AREA | |
|---|---|---|---|---|---|---|---|---|
| | RANGE | AVG | RANGE | AVG | RANGE | AVG | RANGE | AVG |
| EPA Method 521 N-nitroso- dimethyl amine (**NDMA**) µg/L | 0.0032 - 0.0056 | 0.004 | 0.0038 - 0.0059 | 0.005 | ND - 0.0027 | 0.001 | ND - 0.0097 | 0.005 |
| NO CURRENT REGULATORY MCL - EPA Mandatory sampling and Analysis to determine contaminate occurrence nationally and establish regulatory MCL's. | | | | | | | | |

## UNREGULATED CONTAMINANT MONITORING RULE (UCMR) 3

| | | 1,4 Dioxane µg/L | Chromium 6+ µg/L | Total Chromium µg/L | Total Molybdenum µg/L | Total Strontium µg/L | Total Vanadium µg/L | Six Specific Perfluorinated Compounds µg/L |
|---|---|---|---|---|---|---|---|---|
| | Method | EPA 522 | EPA 218.7 | EPA 200.8 | EPA 200.8 | EPA 200.8 | EPA 200.8 | EPA 537 |
| J Ave. Treatment Plant | Range | ND - 0.12 | 1.3 - 2.0 | 1.5 - 1.9 | 1.0 - 1.7 | 58 - 69 | 0.95 - 1.5 | ND |
| | Average | 0.030 | 1.7 | 1.7 | 1.4 | 64 | 1.2 | ND |
| J Ave. Distribution Area | Range | NA | 1.3 - 1.9 | 1.5 - 1.8 | 1.1 - 1.7 | 55 - 69 | 0.94 - 1.5 | ND |
| | Average | NA | 1.7 | 1.7 | 1.5 | 63.5 | 1.2 | ND |
| NW Treatment Plant | Range | ND - 0.078 | 1.4 - 1.9 | 1.6 - 2.1 | ND - 1.3 | 69 - 75 | 1.1 - 1.2 | ND |
| | Average | 0.038 | 1.6 | 1.8 | 0.88 | 73.3 | 1.2 | ND |
| NW Plant Distribution Area | Range | NA | 1.3 - 1.8 | 1.5 - 2.0 | 1.1 - 1.6 | 63 - 70 | 1.1 - 1.3 | ND |
| | Average | NA | 1.6 | 1.7 | 1.5 | 66 | 1.2 | ND |
| | **MCL** | NA | NA | 100 | NA | NA | NA | NA |
| NO CURRENT REGULATORY MCL - EPA Mandatory sampling and Analysis to determine contaminate occurrence nationally and establish regulatory MCL's. | | | | | | | | |

## ACRONYMS

**AVG:** Average
**ND:** Not Detected
**MRDL:** Maximum Residual Disinfectant Level
**NR:** Not Regulated
**mg/L:** Milligrams per liter or parts per million
**µg/L:** Micrograms per liter or parts per billion
**pCi/L:** Picocuries per liter
**MCL:** Maximum Contaminant Level
**MCLG:** Maximum Contaminant Level Goal
**NA:** Not Applicable
**NTU:** Nephelometric Turbidity Unit
**MRDLG:** Maximum Residual Disinfection Level Goal

# Source Water

**Source Water Assessment Information:** This water supply obtains its water from the sand and gravel of the Alluvial aquifer of the Cedar River. The Alluvial aquifer was determined to be highly susceptible to contamination because the aquifer characteristics and the overlying materials provide little protection from contamination at the land surface. The Alluvial wells will be highly susceptible to surface contaminants such as leaking underground storage tanks, contaminant spills, and excess fertilizer application. A detailed evaluation of the source water supply was completed by the IDNR, and is available by contacting the public water supply at 319-286-5975. *Information about work being done to help minimize contamination of the source water supply can be found at www.cityofcr.com/mcpp.*

| | Arsenic µg/L | Total Coliform cfu/100ml | E.coli cfu/100ml | Lead µg/L | Copper µg/L | Zinc µg/L | Manganese µg/L | Iron µg/L | Sodium mg/L | Nitrate mg/L | TOC mg/L |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2016 Annual Average | 3.05 | 33 | <1 | ND | 6.8 | 2.1 | 166.0 | 63.4 | 9.2 | 5.5 | 2.56 |
| 2017 Annual Average | 1.25 | 65 | <1 | 0.37 | 8.8 | 4.4 | 170.3 | 110.6 | 9.5 | 4 | 1.94 |
| 2018 Annual Average | 0.84 | 35 | <1 | 0.05 | 4.2 | 2.2 | 170.9 | 49.4 | 10.0 | 3.6 | 2.27 |

**The following is an important message from the Environmental Protection Agency:**
Drinking water, including bottled water, may be reasonably expected to contain at least small amounts of some contaminants. That's because as the water we draw from — lakes, rivers, streams, ponds, reservoirs, springs and wells — travels over the surface of the land or through the ground, it picks up naturally occurring minerals and, in some cases, radioactive material. It can also pick up substances resulting from the presence of animals or from human activity. 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 or visiting the website at www.epa.gov/ogwdw. Inadequately treated water may contain disease-causing organisms. These organisms include bacteria, viruses and parasites, which can cause symptoms such as nausea, cramps, diarrhea and associated headaches.

# Frequently Asked Questions

**What is the hardness of Cedar Rapids water?**
Cedar Rapids water is considered moderately hard, with values of 6-8 grains per gallon or 100-140 mg/L total hardness as calcium carbonate.

**What is the fluoride concentration and why is it added?**
Fluoride is added during the treatment process to help prevent dental cavities. The optimal concentration is maintained at 0.7 parts per million (ppm) with a range of 0.6-0.9 ppm as recommended by the U.S. Department of Health and Human Services.

**My toilet tank and inside of my dishwasher are stained dark brown to black. Is my water safe to drink?**
The dark staining is likely due to the corrosion-control chemical added during treatment. Its purpose is to lay a protective coating on the insides of pipes so water never comes in contact with the pipe, thereby reducing the risk of dissolving lead or copper into the drinking water. It has been tested extensively and no health or safety concerns have been identified.

**My water throughout the entire house tastes and smells musty or stale. Is it OK to drink?**
Sometimes in low-use areas or dead-end main areas, the water does not get circulated as it should. Where this is the case, the distribution crew can be notified to flush hydrants in the area to help bring in fresh water.

**What should I expect if my water is shut off due to a water main break?**
Water main breaks are often indicated by a lack of water at the tap or water bubbling to the surface of neighborhood streets. This may prompt a water service disruption to your home or business.

Repair crews attempt to reach all homes, businesses, and apartments prior to shutting off water, except under emergency situations. The crews leave an information sheet (door hanger) at the property which explains what to do if water is shut off. It generally takes repair crews 8-12 hours to fix a break and restore water service. If air or particles are coming out of your drinking tap, run water for several minutes to flush the line.

In most cases, it takes another two days for a bacterial contamination sample to return. If the sample shows no contamination in the water, another information sheet is issued, indicating an All Clear. Information will be posted to the City's website (CityofCR.com) if a precautionary boil advisory notice is issued.

If you receive a precautionary boil advisory notice, follow these steps before consuming tap water: **1)** bring water to a boil; **2)** let water boil rapidly for at least one minute; **3)** allow water to completely cool before consuming; **4)** check City website for advisory status updates, or call Water Customer Service at 319-286-5900.

# Glossary

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

**Arsenic:** The EPA recently lowered the arsenic Maximum Contaminant Level (MCL) to 10 ppb. Trace amounts of arsenic are occasionally detected in your drinking water at levels well below this more stringent standard. Arsenic 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.

**Coliform:** A bacteria originating in the digestive system of mammals. Its presence in water alerts lab technicians that disease-causing agents may be present.

**Compliance:** Following all rules and regulations defined in the Safe Drinking Water Act and maintaining water quality below MCLs.

**Contaminant:** One of a variety of natural or man-made physical, chemical, biological or radiological substances whose presence in public water systems may cause adverse health effects to consumers.

**Detection:** The positive identification of the presence of a particular contaminant. Detection of a contaminant does not necessarily represent a serious health risk to consumers if the concentration is below the MCL.

**Disinfection:** Killing the larger portion of microorganisms in water, with the probability that the disinfecting agent kills all disease-causing bacteria.

**Drought:** A period of unusually persistent dry weather that persists long enough to cause serious problems such as crop damage and/or water supply shortages.

**Filtration:** A treatment process that physically removes particles from water as the water passes through a medium.

**Groundwater:** The supply of fresh water found beneath the earth's surface, usually in aquifers. Groundwater is often used to supply wells and springs.

**Herbicide:** A chemical agent used to kill plants, especially weeds. Used widely in agriculture.

**Immunocompromised:** A physical condition in which the human immune system becomes less capable of warding off illness or infection.

**Inorganic:** Composed of or involving organisms (or their remains or products) that are not living. Examples of inorganic substances include minerals, rocks and salt.

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

**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 Disinfection 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 Disinfection Level Goal (MRDLG):** The level of 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.

**Microbial:** A group of microorganisms such as bacteria, protozoa and viruses.

**Nephelometric Turbidity Unit (NTU):** A unit of measure used to determine the clarity of drinking water.

**Organic:** Of, pertaining to or derived from living organisms. Organic matter contains carbon, hydrogen and oxygen. Examples include humans, plants and animals.

**Particulates:** Of or relating to minute separate particles.

**Pesticides:** Any substance or chemical applied to kill or control pests, including weeds, insects, algae, rodents and other undesirable agents.

**Radionuclides:** Naturally occurring and human-made radionuclides are present throughout the environment. They are found in varying amounts in soil, water, indoor and outdoor air—and even within our bodies—making exposure inevitable. State and Federal regulations establish safe drinking water maximum contaminant levels for a variety of radionuclides. Monitored contaminants include Gross Alpha Radiation, Radium-226, Radium-228, and Combined Radium radionuclides. The existing treatment process does not reduce or remove these contaminants. Except in extreme circumstances, radiation resulting from the ingestion of radionuclides in drinking water is far lower than radiation resulting from other sources of exposure, like radon found in some basements. Radon is a radionuclide classified as an unregulated contaminant. During the aeration treatment stage, radon can be removed from the water source. Additional information about Radon and aeration is included in this report. The concentration of radionuclides found in our water is well within safe regulatory guidelines.

**Radon:** Radon is a radioactive gas that you can't see, taste or smell. It is found throughout the United States. Radon is a known human carcinogen. Breathing air containing radon can lead to lung cancer. Drinking water containing radon may also increase the risk of stomach cancer. Radon can build up to high levels in all types of homes. Radon can move up through the ground and into a home through cracks and holes in the foundation. Radon can also be released into indoor air from tap water when showering, washing dishes, and performing other household activities. A radon level less than 4 picocuries per liter of air (pCi/L) is considered safe. Between 0.0019 – 0.0070 pCi/L of radon may enter the air from City tap water — far less than radon entering homes through the foundation. Fix your home if the level of radon in your air is 4 picocuries per liter of air (pCi/L) or higher. There are simple ways to fix a radon problem that aren't too costly. If you are concerned about radon in your home, test the air in your home. Testing is inexpensive and easy.

For additional information, call your state radon program (800-838-5992) or the EPA's Radon Hotline (800-767-7236).

**Surface water:** All water naturally open to the atmosphere and all springs, wells or other collectors that are directly influenced by surface water. Water located close to the earth's surface.

**Total Organic Carbon (TOC):** Amount of carbon found in an organic compound; used as an indicator of water quality.

**Revised Total Coliform Rule (RTCR):** Revised compliance rule that aims to increase public health protection through reduction of pathways for contamination; find-fix-document.

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

**Turbidity:** Turbidity is a measure of the cloudiness of water. Turbidity is a good indicator of treatment filter performance and is regulated as a Treatment Technique.

**Violation:** Exceeding the MCL of a contaminant regulated by the federal government; failure to properly monitor or report regulated contaminants would also be considered a violation.



# CITY SERVICES DIRECTORY

| CITY SERVICE | LOCATION | PHONE | EMAIL ADDRESS |
|---|---|---|---|
| Animals | 900 76th Avenue Drive SW | 319-286-5993 | AnimalControlMgmt@Cedar-Rapids.org |
| Assessor | City Services Center, 500 15th Avenue SW | 319-286-5888 | CRAssessor@Cedar-Rapids.org |
| Bid Opportunities | City Hall, 101 1st Street SE | 319-286-5021 | Bid-Purchasing@Cedar-Rapids.org |
| Building and Housing Codes | City Services Center, 500 15th Avenue SW | 319-286-5831 | Building@Cedar-Rapids.org |
| Buses | Ground Transportation Center, 450 1st Street SE | 319-286-5573 | CRTransit@Cedar-Rapids.org |
| Fire Safety Inspections | 713 1st Avenue SE | 319-286-5166 | CRFire@Cedar-Rapids.org |
| Garbage, Recycling and Yard Waste Collection | City Services Center, 500 15th Avenue SW | 319-286-5897 | SolidWaste&Recycling@Cedar-Rapids.org |
| Housing Assistance Programs | City Hall, 101 1st Street SE | 319-286-5872 | HSG-Admin@Cedar-Rapids.org |
| Land Development | City Hall, 101 1st Street SE | 319-286-5822 | DevelopmentServices@Cedar-Rapids.org |
| Park Rentals | Northwest Recreation Center, 1340 11th Street NW | 319-286-5566 | Recreation@Cedar-Rapids.org |
| Potholes and Street Maintenance | City Services Center, 500 15th Avenue SW | 319-286-5826 | Street@Cedar-Rapids.org |
| Recreation Programs | Northwest Recreation Center, 1340 11th Street NW | 319-286-5566 | Recreation@Cedar-Rapids.org |
| Sewer Backup or Problems | City Services Center, 500 15th Avenue SW | 319-286-5815 | Sewer@Cedar-Rapids.org |
| Traffic Signals, Signs and Markings | City Services Center, 500 15th Avenue SW | 319-286-5176 | Traffic@Cedar-Rapids.org |
| Utility Billing | City Hall, 101 1st Street SE | 319-286-5900 | WaterMail@Cedar-Rapids.org |

For more information about the City of Cedar Rapids and its services, call **319-286-5080** or visit **www.cedar-rapids.org**.

# CITY COUNCIL

To leave a message for a City Council member, call 319-286-5051.
Find your district at **www.linncountyelections.org**.

MAYOR
**Brad Hart**
b.hart@cedar-rapids.org

DISTRIBUTION 1
**Martin Hoeger**
m.hoeger@cedar-rapids.org

DISTRIBUTION 2
**Scott Overland**
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DISTRIBUTION 3
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dalet@cedar-rapids.org

DISTRIBUTION 4
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DISTRIBUTION 5
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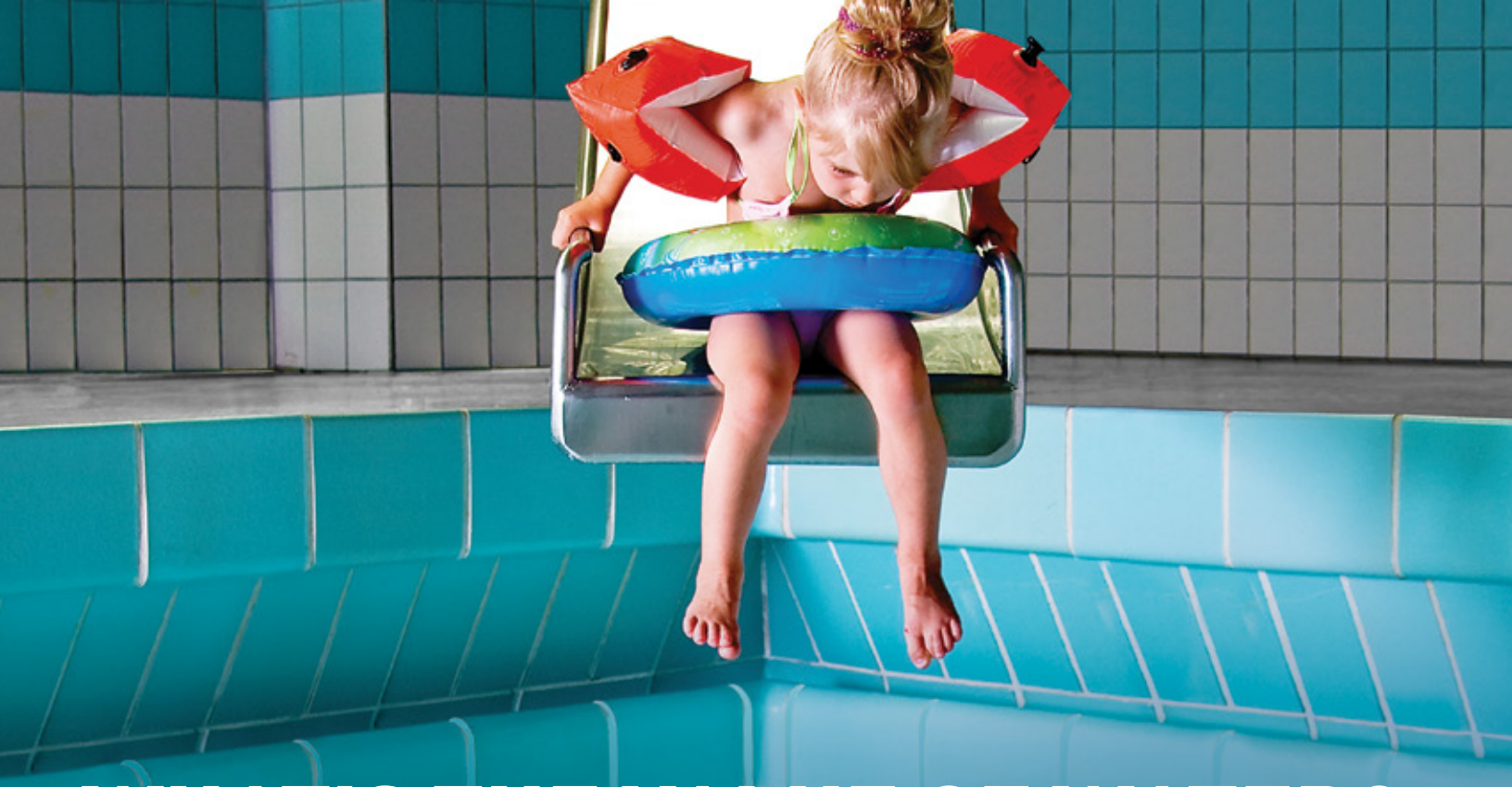
s.weinacht@cedar-rapids.org



# WHAT'S THE VALUE OF WATER?

Splashing in a pool, tossing a water balloon—water is one of life's great pleasures.

Most of us never think about how water gets to us or where it goes when it swirls down the drain. Luckily, we don't have to. Pumps, treatment plants, and pipes bring us clean water and remove wastewater.

But our water systems need investment so they can continue to deliver life's most precious resource. All day, every day.

Water—Essential. Reliable. Invaluable.

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**Learn how water works for you. Visit TheValueofWater.org.**

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CEDAR RAPIDS
City of Five Seasons®

#ValueWater

Value of Water
COALITION

Presented in cooperation with the Value of Water coalition