

2020 Water Quality Report

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

Meet the New Utilities Director



Roy Hesemann became the Utilities Director in January 2021. He has been a City of Cedar Rapids employee for more than 21 years, and boasts a career spanning over 35 years of engineering, management and education work in the water and wastewater treatment sectors.

In his time with the City, Hesemann has served as the Water Pollution Control Plant Manager, Water Utility Plant Manager and Project Engineer. He was filling in as Interim Water Utility Plant Manager for the Utilities Department prior to his appointment as Utilities Director.

"Roy demonstrates strong leadership and management abilities, a comprehensive understanding of the evolving needs of our Utilities Department, dedication to innovation

and sustainability, and commitment to our employees and organizational health program," said City Manager Jeff Pomeranz, upon Hesemann's appointment as Utilities Director.

"Whether you live, work, or play in Cedar Rapids, the City's Utilities Department touches your experience," said Hesemann. "From providing some of Iowa's best-tasting water to drink; to treating residential and industrial wastewater; to providing garbage, recycling and yard waste collection — the Cedar Rapids Utilities Department plays an essential role in meeting the community's daily needs. I am looking forward to leading the department as we continue to meet and exceed regulatory obligations while providing dependable services to our customers."

Hesemann grew up in Missouri, but has lived most of this professional life in the Cedar Rapids area. He earned his undergraduate degree from University of Missouri-Columbia. He also serves as an adjunct instructor at Des Moines Area Community College and is active in several watershed organizations across Iowa and Nationally.

NEARLY HALF A MILLENNIA OF OPERATIONAL EXPERIENCE

While water comes from nature, it takes treatment equipment, pipes, and people working 24/7 to deliver clean, safe drinking water to homes and businesses in our community. From monitoring source water; protecting wellheads; ensuring our treatment processes of softening, filtration and disinfection is delivering the intended results; to monitoring and maintaining the distribution system — all of these jobs require skilled employees with a commitment to excellence.

Water division employees boast a cumulative 470 years of service for the City of Cedar Rapids. This experience can be particularly critical during emergency events, such as the August 2020 derecho. "During and after the storm, water operators were monitoring your water system. Our staff worked hard to ensure pumps continued to operate — even when power was disrupted across the community," explained Christine Knapp, Water Plant Operations Manager. "Division staff routinely undergo operational and safety training to prepare for emergency events," said Knapp.

As power was gradually restored, your water and wastewater treatment processes kept pace, serving our community's food and grain processing, manufacturing, and other industrial users. For years, the Cedar Rapids Utilities Department has taken steps to invest in this reliability. In a way, the storm highlighted the importance of that work. Ongoing maintenance and testing of our water systems keep City staff prepared when emergency response is required.

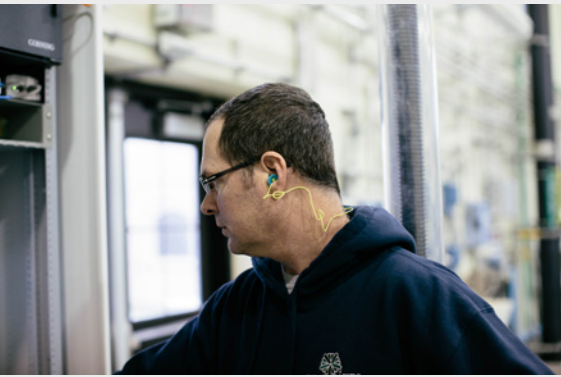
In Cedar Rapids, when you turn on the faucet, you know you can expect safe, great-tasting water to flow. You can also trust that Cedar Rapids Water division staff are working hard — day and night — to ensure your tap continues to provide the highest quality water.



Keeping Water – and Plant Employees – Safe From COVID-19

While this report dives into the details of the City's water quality in 2020, it is hard not to acknowledge one of the biggest news stories of the year — the COVID-19 pandemic. From early in the pandemic, the City of Cedar Rapids understood the importance of not only keeping its water supply safe, but also ensuring staff who monitor the treatment process could continue to perform their essential duties.

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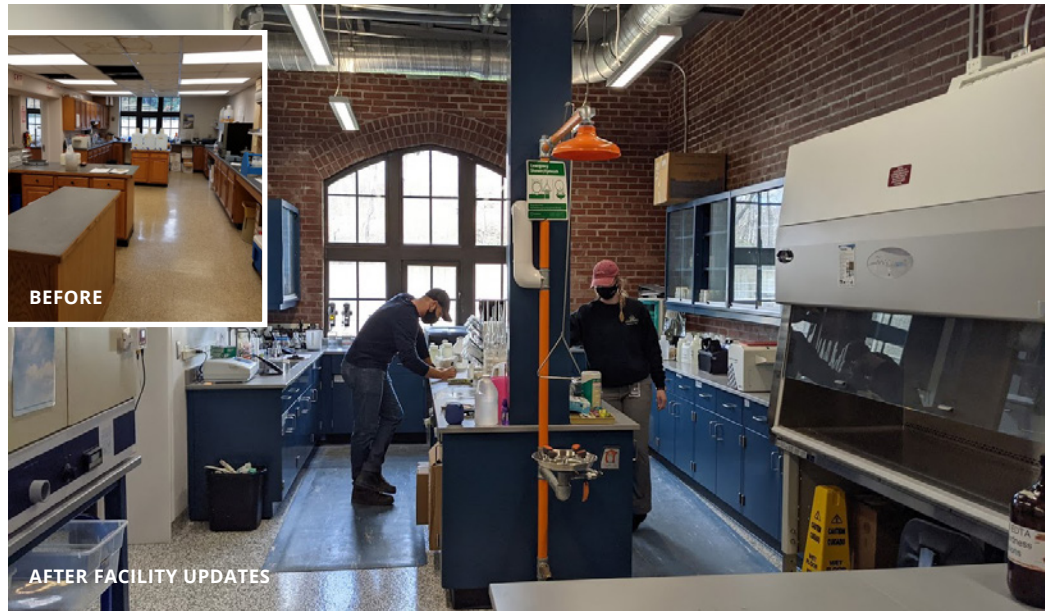
► "COVID-19" CONTINUED

It is important for our customers to know that their tap water remains safe to consume. We use chlorine gas and a trace amount of ammonia as a standard disinfectant for our water supply. As an extra precaution, we utilize powerful ultraviolet lamps to instantly damage any remaining genetic material of microorganisms in our water, eliminating the ability to cause infection. These practices have been shown as effective treatments for viruses and bacteria.



While millions of Americans practiced social distancing and sheltered in place, your water and wastewater utilities workers needed to keep water flowing. From early on in the pandemic, the City of Cedar Rapids initiated both an emergency preparedness plan and a continuity of operations plan, to ensure the safety of our community. Employees were educated about best practices for reducing the spread of COVID-19, and staffing schedules and office practices were modified to limit the number of people sharing limited space together.

The City of Cedar Rapids would like to thank ALL essential workers who have continued to provide critical services during the pandemic. We appreciate all you do to protect our community!



Laboratory Updates

Cedar Rapids has been honing the craft of water treatment since it became one of the first American cities to adopt rapid sand filtration in 1896. The Water division has kept pace with modern trends, installing chlorination equipment, fluoridation, and ultraviolet (UV) disinfection in line with contemporary treatment plants over the past several decades.

As this report demonstrates, another critical component in ensuring the safety and quality of your drinking water is conducting a routine, consistent monitoring and sampling program. Water plant operators and the Utilities laboratory staff ensure the City of Cedar Rapids' water quality is always top-notch. Each year the Water division analyzes more than 530,000 data points at each of its two water treatment plants and more than 6,000 points within the distribution system. You can review many of the results from this analysis starting on page six of this report.

Laboratory operators routinely perform testing that exceeds national and state standards. Amy Knudsen, utilities water quality specialist, offered some enlightening statistics. "The regulatory requirement for lead/copper sampling is once every three years, but we do it every year," said Knudsen. "With atrazine, we need to sample once per year. We test for that monthly. Sodium — one sample is required per year. We monitor it weekly."

Scientists are constantly discovering new trends and challenges affecting water supplies. Meanwhile, the Cedar Rapids Utilities Department remains steadfast in its obligation to keep the city's drinking water safe. That's why recent improvements at the City's Water Treatment Laboratory, completed in November 2020, were critical. The upgrades will help us ensure water that comes out of your tap continues to be of the highest possible quality.

The laboratory renovation project preserved historic architectural details at the J Avenue Water Treatment Plant while improving the safety and workflow of the space. New state-of-the-art fume and microbiological-control hoods improve safety for lab analysts. Additional bench space made room for updated equipment, including an Ion Chromatograph — used to improve efficient analysis of raw and finished water for fluoride, chloride, nitrate, nitrite, and sulfate.

Another new piece of technology is a high-tech autoclave, which allows operators to increase the type and frequency of microbiology testing in the lab. Improvements to the space also opened up room to relocate a lab employee from the Water Pollution Control building, doubling analyst presence at the water lab during the week. This allows our staff to serve and turn around results to customers more quickly.

How Your Water is Treated

1 Aeration

Once water arrives at the City's treatment facilities, it undergoes a process called aeration. During this process, the raw/untreated water falls down a series of trays. These trays help open the water up so gases can be exchanged and removed. This includes the removal of undesirable gases like radon. Aeration is similar to the natural process that happens when water in a stream flows through rapids or over waterfalls.

2 Softening

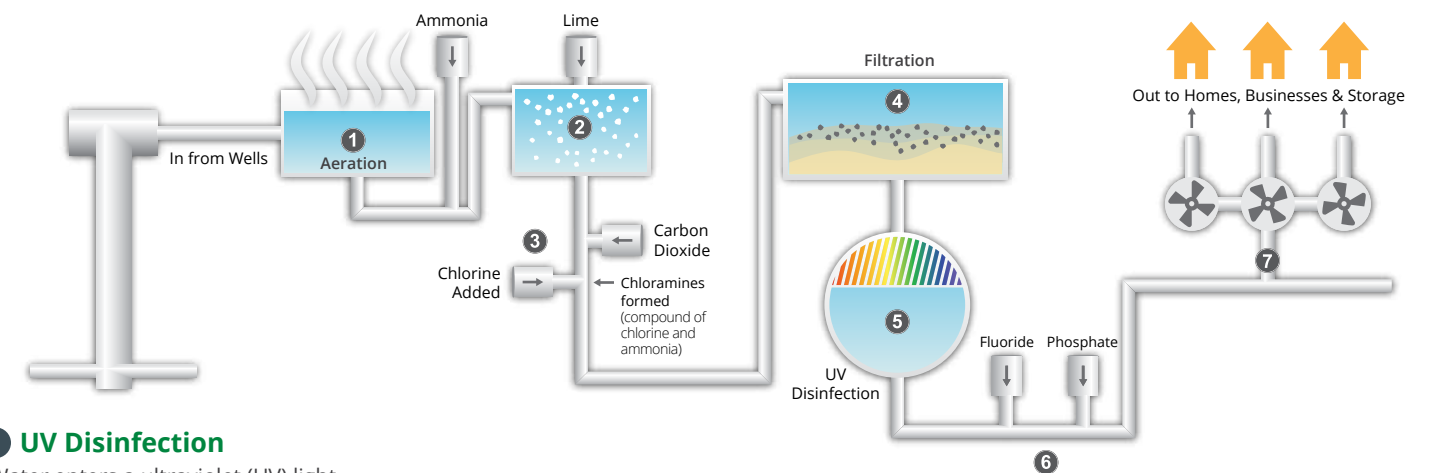
Lime chemical is added to soften the water. This process reduces minerals that make water "hard." Hardness in water means you need to use more soap and detergents. Hard water also causes buildup in water heaters and boilers. Hard water can interfere with industrial processes and sometimes gives water an unappealing taste and odor. Softening water can limit those challenges. After lime chemical is added, residual materials are extracted and applied to farmland as a soil conditioner. The residuals can also be used as fill in approved land-reclamation projects.

3 Recarbonation and Chlorination

Water pH is lowered through the addition of carbon dioxide. Chlorine is added to disinfect the water. This process helps kill disease-causing organisms, making our water safer. During this step, a trace amount of ammonia is also added to further aid in disinfection.

4 Filtration

Water passes through a sand and gravel filter bed, removing any remaining suspended matter.



5 UV Disinfection

Water enters a ultraviolet (UV) light disinfection system in this step. The UV system uses special lamps to instantly damage the genetic material of any microorganisms in the water. The process eliminates the ability for microorganisms to reproduce and cause infection. Then, water passes through a contact tank. Time spent in this tank allows the chlorine compound created in Step 3 to complete its disinfection process.

6 Fluoridation and Phosphate Addition

Fluoride promotes children's dental health. Phosphate is used to stabilize water and lessen the possibility that lead and copper will leach out of pipes and fixtures into tap water.

7 Distribution

Finished water is pumped directly into the distribution system. The distribution system includes water storage tanks, booster stations, and more than 600 miles of water mains. Water stored in elevated tanks or pumped through booster stations helps stabilize pressure in the distribution system and serves as an emergency reserve for fire protection.

Keeping Your Water Flowing

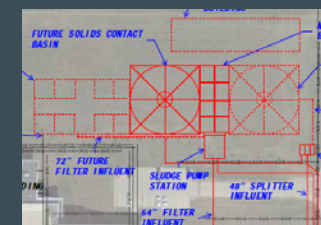
Water keeps our city running and our economy growing. While essential, water infrastructure is often unseen. Many never consider how water gets to the tap, or where it goes after we flush it away. Luckily, Cedar Rapids residents don't have to worry about it. The Utilities Department maintains good functioning pumps, treatment plants, and pipes to bring clean water into homes and businesses, and to remove and treat wastewater.

Many components in our drinking and wastewater treatment facilities were brought online decades ago and have been working ever since! We are constantly working to monitor portions of the system as the time comes to upgrade and replenish equipment. Learn more about recent and upcoming improvements at right.



Bever Park Reservoir Resurfacing

The 1922 Bever Park Reservoir is an 8 million gallon underground water tank. The tank stores water for use during high-demand periods. It also balances water pressure in the area. A recent project emptied, cleaned and refreshed the tank for years to come.



NW Softener Basin Addition

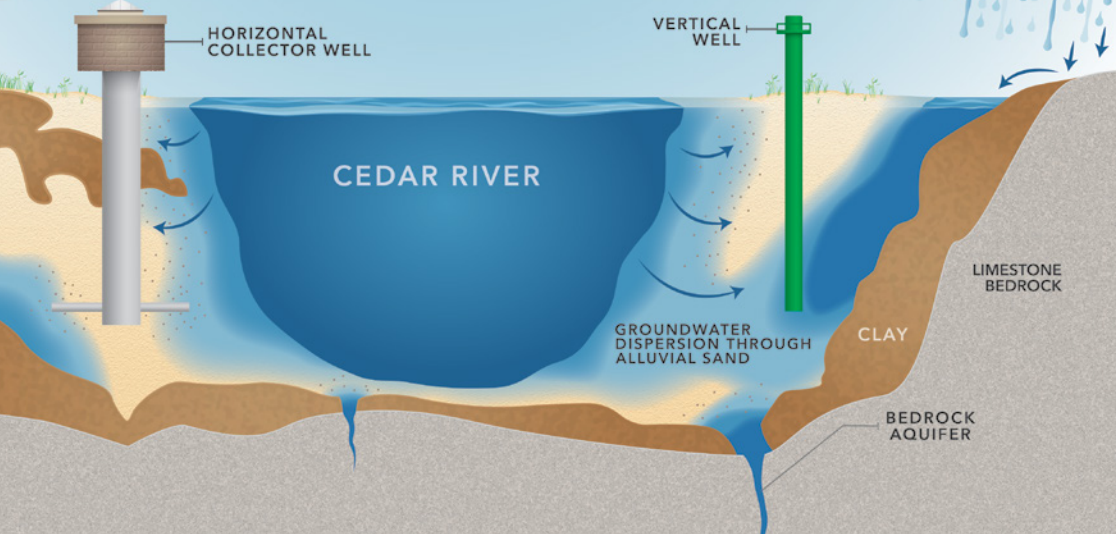
A new softener basin is being constructed at the NW Water Treatment Plant. This project will allow the Water division to preserve treatment capacity while renovating and extending the useful life of existing water softeners.

WHERE OUR WATER COMES FROM

The City of Cedar Rapids obtains its drinking water supplies from wells constructed in 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.

As the wells perform their work, your drinking water benefits from natural filtration through sand in the riverbank. This filtration has proven to be a beneficial pretreatment to water before it reaches the City's conventional lime-softening facilities.



2020 Water Report Shows 100% Compliance

The Water division achieved 100% compliance with the Iowa Department of Natural Resources' water quality expectations in 2020. This marks the third consecutive year the division earned this distinction. Additionally, the Water Pollution Control Facility (WPC) must meet 3,865 points of compliance toward its water discharge permit each year. In 2020, WPC became eligible for the North American Clean Water Agency (NACWA) Silver Peak Performance Award for its exceptional compliance, with only one deviation from the standard. Cedar Rapids residents can be proud of the exceptional standards upheld by their Utilities Department every day.

QUESTIONS?

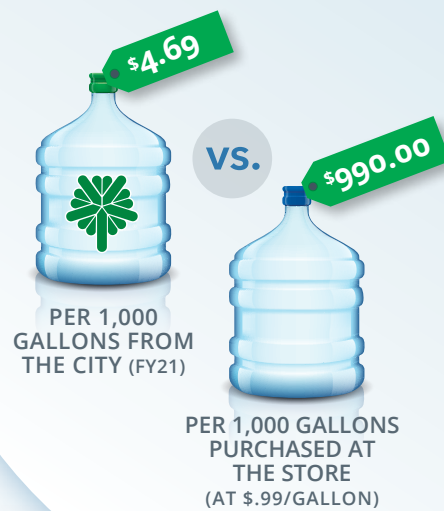
If you have questions or concerns about our water quality or this report, please contact Water Division Customer Service. We are happy to help identify issues and resolve your concerns.

CALL:
319-286-5900

EMAIL:
watermail@cedar-rapids.org



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



WHAT'S THE VALUE of Water?

Invaluable. Reliable. Water—it is essential for everything we do in life. We need water to make a cup of coffee, fight fires, build bridges, and swim on a summer day. From agriculture to manufacturing, most sectors of our economy rely on water.

Water drives economic growth and competitiveness. Water protects public health. Water revitalizes neighborhoods and supports community vitality. It sustains our environment and makes us more resilient in the face of climate change. Water is life.



LEARN MORE AT
www.thevalueofwater.org



WHAT WE'RE DOING ABOUT LEAD

The Water Division (CRWD) routinely tests for lead in the drinking water leaving our treatment plants. In 2020, no lead was detected leaving our plants. Lead can leach into water during overnight contact with pipes and faucets in older homes. CRWD monitors this with a sampling program. Our tests show most homes test at, or well below, the standard set by the Environmental Protection Agency (EPA) for annual monitoring of lead. CRWD performs special sampling and analysis when lead is detected above the standard.

Important Lead and Copper Service Line Information

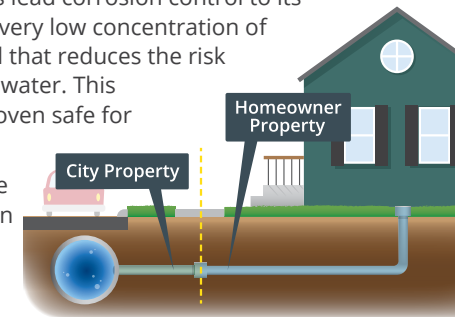
We work hard every day to exceed the EPA's standards. The EPA recently updated its Lead and Copper Rule for Public Water Systems. Learn how these changes may affect you:

Some older homes still utilize lead plumbing, or have a lead service line between their house and the water main. To reduce the risk of dissolved lead from old pipes, CRWD adds lead corrosion control to its water supply. This consists of a very low concentration of zinc ortho-phosphate, a mineral that reduces the risk of dissolved lead in consumers' water. This small amount has long been proven safe for consumption.

CRWD is updating its service line records—the plumbing between City distribution pipes and the water meter on the customer's end. Sometimes, service lines need to be repaired or replaced. The Water Division does not always receive updated information when this happens. Updating records is a high priority and a first step toward determining how precise our monitoring program can be.

The EPA's updated Lead-Copper rule instructs CRWD to fully update its service-line inventory and replace/improve a set amount of older connections through a program spanning several years. Lead lines discovered will need to be replaced. The EPA is working to provide financial assistance to offset the cost for property owners to replace their portion of the lead service line, however, this will not be mandatory. It is important to know that if only the CRWD-owned portion is replaced, a potential for exposure to dissolved lead remains. CRWD will notify homeowners of scheduled service line and water main work in their area. The goal is to complete service line replacements all at one time — as quickly as possible.

The revised Lead and Copper Rule also discontinues collection of water samples from service lines that are made of copper using lead solder. The monitoring program will continue to collect water samples from service lines made of lead. Additional testing of schools and childcare centers is included under the rule revision.



THE CITY NEEDS YOUR HELP!

Customer participation to identify their service line material can reduce the expense of the inventory requirement. This may also reduce inconveniences associated with potential home or office visits. Help the CRWD in its efforts to remove lead service lines from the water system. Fill out our short survey at www.CityofCR.com/inventory.

Educational Information

LEAD IN DRINKING WATER

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:

Coralville, IA | 800-421-4692

TestAmerica: Cedar Falls, IA | 319-277-2401

Keystone Labs: Newton, IA | 641-792-8451

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.

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 Quality Findings This table summarizes required water quality monitoring results for regulated parameters that were detected in the 2020 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 -0.64	0.37	ND - 0.46	0.31	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes
Nitrate	mg/L	10	10	No	0.63 - 5.40	5.40	ND - 5.83	5.83	Runoff from fertilizer use; Leaching from septic tanks, Sewage; Erosion of natural deposits
Nitrite	mg/L	1	1	No	ND - 0.07	0.07	ND - 0.05	0.05	Runoff from fertilizer use; Leaching from septic tanks, Sewage; Erosion of natural deposits
Sodium	mg/L	NA	NA	No	NA	14.0	NA	13.0	Erosion of natural deposits; Added to water during treatment process
Fluoride	mg/L	4	4	No	0.10 - 0.81	0.81	0.12 - 0.88	0.88	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	NA	ND	NA	ND	Discharge from petroleum factories
Atrazine	µg/L	3	3	No	ND - 0.30	0.11	ND - 0.30	0.08	Runoff from herbicide used on row crops
RADIONUCLIDES					RANGE	REPORTED	RANGE	REPORTED	
Combined Radium	pCi/L	5	0	No	NA	ND	NA	ND	Erosion of natural deposits
Radium -226	pCi/L	5	0	No	NA	ND	NA	ND	Erosion of natural deposits
Radium -228	pCi/L	5	0	No	NA	ND	NA	ND	Erosion of natural deposits
Gross Alpha	pCi/L	15	0	No	NA	ND	NA	ND	Erosion of natural deposits
TREATMENT TECHNIQUE INDICATORS					RANGE	REPORTED	RANGE	REPORTED	
Total Organic Carbon	Removal Credits	TT	NA	No	0.48 - 2.09	1.34	0.90 - 4.23	1.64	Naturally present in the environment
					Running Annual Average TOC Credits must be > 1.0				
Turbidity	NTU	TT	NA	No	0.04 - 0.11	0.11	0.03 - 0.23	0.23	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	90 th Percentile	95 th Percentile	Samples Exceeding AL	Source of Chemical
Lead	µg/L	15	0	No	ND - 132	3.7	6.7	1	Corrosion of household plumbing systems; Erosion of natural deposits
Copper	mg/L	1.3	1.3	No	ND - 0.488	0.087	0.193	0	

Revised Total Coliform Rule	JAN	FEB	MAR	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
Total # Samples/Month	108	108	109	108	109	108	108	109	108	108	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	1.8 - 3.9	3.5	Water additive used to control microbial growth
	Units	MCL	MCLG	Violation	Range	Reported	
Total Trihalomethanes (TTHM)	µg/L	80	NA	No	ND - 3.4	3.1*	By-product of drinking water disinfection
Total Haloacetic Acids (HAA5)	µg/L	60	NA	No	ND	1.5**	By-product of drinking water disinfection

*Highest Locational Running Annual Average at Site DB03 ** Highest Locational Running Annual Average at Site DB01

Sample Key

Highest Running Annual Average		Maximum Value	Single Result		Lowest Running Annual Average	Highest Locational Running Annual Average
Arsenic	Total Chlorine Residual	Nitrate	Sodium	Radium -226	Total Organic Carbon	Total Trihalomethanes
Fluoride	Radon	Nitrite	Toluene	Radium - 228		Total Haloacetic Acids
Atrazine		Turbidity	Combined Radium	Gross Alpha		

Unregulated and Secondary Chemicals									
Inorganic Chemicals				J Ave Plant		NW Plant		Possible Sources of Contaminant	
	Units	MCL	MCLG	Range	AVG	Range	AVG		
Chloride	mg/L	NA	250	23.3 - 33.2	27.2	20.7 - 28.9	24.9	Erosion of natural deposits; Run-off	
Copper	mg/L	NA	1.0	ND - 0.010	0.004	ND - 0.018	0.010	Corrosion of household plumbing; Erosion of natural deposits	
Manganese	µg/L	NA	50	ND - 44.5	10.2	ND - 0.27	0.01	Corrosion of household plumbing; Erosion of natural deposits	
Sulfate	mg/L	NA	250	20.8 - 31.2	24.9	19.7 - 32.0	26.1	Erosion of natural deposits	
Zinc	mg/L	NA	5	0.13 - 0.27	0.21	0.20 - 0.25	0.23	Corrosion of household plumbing; Erosion of natural deposits	
Organic Chemicals				Range	AVG	Range	AVG	By-product of drinking water disinfection	
Chloroform	µg/L	NA	70	0.9 - 1.5	1.2	1.7 - 3.5	2.3		
Bromodichloromethane	µg/L	NA	0	ND	ND	ND - 0.8	0.5		
Dichloroacetic Acid	µg/L	NA	0	1.0 - 2.0	1.5	1.0 - 2.0	1.3		
Trichloroacetic Acid	µg/L	NA	20	NA	ND	NA	ND	Run-off from fertilizer used on row crops	
Metolachlor	µg/L	NA	NA	0.10 - 0.40	0.22	ND - 0.30	0.18		
Radionuclides				Range	Reported	Range	Reported	Possible Sources of Contaminant	
Radon	pCi/L	NA	NA	38 - 64	55	20 - 37	30	Erosion of natural deposits	

UNREGULATED CONTAMINANT MONITORING RULE (UCMR) 4									ACRONYMS	
		Manganese µg/L	Germanium µg/L	HAA5 µg/L	HAA6Br µg/L	HAA9 µg/L	TOC mg/L	Bromide mg/L	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	
	Method	EPA 200.8	EPA 200.8	EPA 552.3	EPA 552.3	EPA 552.3	SM 5310B	EPA 300.01		
J Ave. Treatment Plant	Range	8.6 - 113	ND	NA	NA	NA	1.7 - 2.2	26.0 - 34.3		
	Average	44.200	ND	NA	NA	NA	2.0	29.6		
J Ave. Distribution Area	Range	NA	NA	NA	NA	NA	NA	NA		
	Average	NA	NA	NA	NA	NA	NA	NA		
NW Treatment Plant	Range	0.63 - 687	ND - 0.55	NA	NA	NA	1.5 - 2.3	24.0 - 32.9		
	Average	230	0.18	NA	NA	NA	2.0	27.6		
NW Plant Distribution Area	Range	NA	NA	1.4 - 3.2	ND - 1.7	1.4 - 4.7	NA	NA		
	Average	NA	NA	2.5	1.3	3.8	NA	NA		
	MCL	NA	NA	NA	NA	NA	NA	NA		
NO CURRENT REGULATORY MCL - EPA Mandatory sampling and analysis to determine contaminate occurrence nationally and establish regulatory MCL's.										

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/mcqp.*

	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
2015 Annual Average	1.15	720	<1	ND	2.8	1.0	214.9	65.1	11.9	4.0	2.10
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	4.0	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
2019 Annual Average	0.86	55	<1	ND	6.6	2.7	120.0	42.7	9.4	3.6	2.87
2020 Annual Average	1.40	2	<1	ND	7.1	0.9	120.2	289.3	10.2	3.3	1.57

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.

Is there PFAS in my drinking water?

In 2013 we sampled for six PFAS compounds with no PFAS detected. In July 2020, we sampled for 18 PFAS compounds and had lower than reportable results. Currently, there are no formal standards for these compounds. Demonstrating our commitment to high water quality standards, the CRWD will partner with Iowa DNR on a yearlong PFAS study later in 2021. The study will help determine what role, if any, PFAS plays within our water supply. Locations where the compounds were manufactured, or air fields adjacent to streams where a significant amount of fire-fighting foam may have been used, appear to be the most likely sites of concern for these compounds. Neither of these cases present a concern for our source water at this time.

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.

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

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.

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.

Per- and Polyfluoroalkyl Substances (PFAS): A group of manufactured chemicals that have been used in a variety of industries around the globe since the 1940s. The chemicals are very persistent in the environment and in the human body – meaning they don't break down and they can accumulate over time. There is evidence that exposure to PFAS can lead to adverse human health effects.

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

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. If possible, run the water through your bath faucet as this moves the most water and sediment.

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.

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.