



WATER QUALITY

REPORT | 2016

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.



BUILDING A RESILIENT Drinking Water System

The City of Cedar Rapids Utilities Department Water Division's chief responsibility is protecting public health by providing safe, reliable drinking water to all customers. In support of this mission, the Division is engaged in a variety of projects to enhance and protect the City's water supply. The projects detailed below will keep your water safe from source to tap and allow for continued growth and development in Cedar Rapids.



Middle Cedar Partnership Project

The Middle Cedar Partnership Project (MCP) is a \$4.3 million program designed to encourage upstream producers and landowners to implement conservation practices to help nutrients like nitrogen and phosphorus stay on the land and out of waterways. The program is focused on improving soil health, bettering water quality and reducing water quantity. Since the program began in 2015, those in the project area have implemented the following:

- **16,539 acres of cover crops**
 - **134 percent increase** in cover crop acres from 2015 to 2016
 - Approximately **15 percent** of the total crop acres in the MCP target area is now part of a cover crop program
- **6,522 acres of nutrient management plans or practices**
- **9,173 acres of no-till, strip-till or reduced tillage practices**
- **2 saturated buffers**
- **1 bioreactor**

From the data being collected within the watershed, the conservation practices are making a difference in the amount of nutrients that are reaching our waterways. In the Middle Cedar:

- Bioreactors reduce nitrate concentration by **42 percent**.
- Fields with cover crops have **32 percent** lower nitrate concentrations than fields without.
- Saturated buffers reduce nitrate load by **39 percent**.*
- Water flowing through wetlands show nitrate concentration **84 percent** lower than stream observations over the same period.

**Data provided by the USDA Agricultural Research Service and Iowa State University*



Airborne Geophysical Groundwater Survey

The City of Cedar Rapids and the United States Geological Survey (USGS) conducted an innovative groundwater survey in May 2017. CGG Canada Services, who is under contract with the City, collected and recorded geophysical measurements over the Cedar River Aquifer, which is the source of the City's water supply. These measurements will determine groundwater and soil/sand characteristics in the aquifer. To collect the data, a helicopter traveled

approximately 200 feet above the ground at speeds of almost 70 MPH with a remote sensing device called a "bird" tethered 100 feet below the helicopter. The bird transmitted electromagnetic waves approximately 150 feet into the ground to measure the physical properties and determine where the soil and sand is most porous. The data will be turned into models by the USGS that the City can use to better predict how our aquifer will respond to extreme weather conditions, like a drought, and periods when demand for water is high. The models can also be used to predict where future wells might be most productive.



New Kirkwood Water Tank

In November 2016, demolition of the Kirkwood standpipe located on Kirkwood Boulevard SW between Rolling Ridge Drive SW and 66th Avenue SW was completed.

The new 1.5 million gallon tank will be constructed in 2017-2018 and provide the following benefits:

- Allows the Water Division to reconfigure the water distribution system for increased resiliency
- Enhances fire protection
- Improves the system's storage capacity
- Supports future development
- Increases water pressure for those served by the tank

Educational Information

Nitrate

A dissolved form of nitrogen found in fertilizers and sewage by-products that may leach into ground water and other water sources. Nitrates occur naturally in some waters. Over time, nitrates can accumulate in aquifers and contaminate ground water.

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 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.

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 3
8 a.m. - Noon,
Downtown Farmers' Market

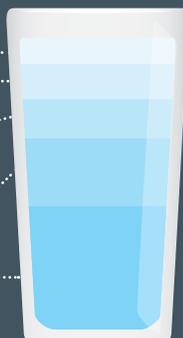
Thursday, June 15
5 - 6 p.m.,
NewBo City Market,
1100 3rd St. SE

Water Value

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

\$3.98 Buys You 1,000 Gallons of Clean Water:

- ENGINEERING AND ADMINISTRATIVE SUPPORT **\$0.36**
- WATER SOURCE (WELLS) **\$0.46**
- METER AND CUSTOMER SERVICE **\$0.59**
- DISTRIBUTION AND STORAGE **\$0.94**
- WATER TREATMENT **\$1.63**



\$3.98
per 1,000 Gallons
from CRWD

VS.



\$840.00
per 1,000 Gallons
purchased at the store
at \$.84/gallon



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.

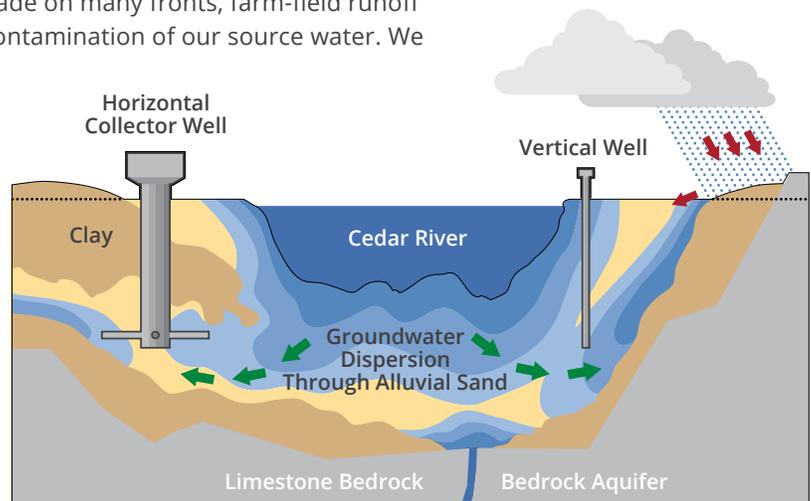
Our drinking water from those wells benefits from natural filtration through the riverbank. This natural sand filtration has proven to be a beneficial pretreatment to water before it reaches the City's two conventional lime-softening facilities.

How We Protect the Quality of Our Drinking Water

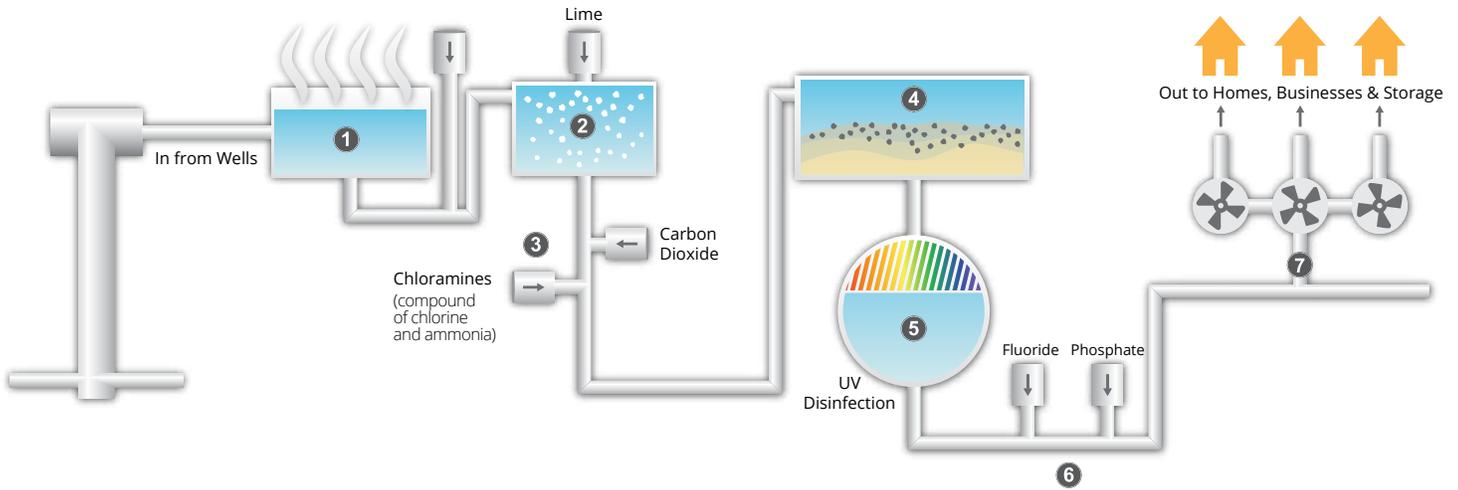
The Cedar Rapids Water Division continues to work with state and federal agencies to monitor and assess our watershed. The Cedar River watershed covers more than 6,500 square miles upstream of Cedar Rapids and extends into southern Minnesota. Source water assessment identifies potential sources of contamination 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; as well as distribution-system monitoring and maintenance.



Treatment Process Highlights



1 Aeration

Once water has been drawn from the wells into the City's treatment plants, it undergoes aeration. Raw or untreated water is allowed to cascade down a series of trays, increasing the surface area of the water and promoting the exchange of gases. Aeration also removes undesirable gases such as radon. Aeration is similar to the natural process that occurs when a stream flows through rapids or over falls.

2 Softening

The CRWD adds lime chemical to the water. This softens or reduces the minerals that typically make water "hard." Excessive hardness increases soap use, deposits scale in water heaters and boilers, interferes with some industrial processes, and sometimes gives water an unappealing taste and odor. Resulting lime residual materials are removed and applied to farmland as soil conditioner or used as fill in approved land reclamation projects.

3 Recarbonation and Chlorination

The CRWD lowers water pH by adding carbon dioxide and adds chlorine to disinfect the water. The chlorine helps ensure our water's microbiological safety by killing disease-causing organisms. The CRWD also adds a trace amount of ammonia to form chloramine to help the disinfection process.

4 Filtration



Water is then passed through a sand and gravel filter bed, removing any remaining suspended matter.

5 UV Disinfection



Next, the water enters the ultraviolet (UV) light disinfection system where special lamps emit ultraviolet light into the water. The UV energy instantly damages the genetic material of any microorganisms in the water, eliminating their ability to reproduce and cause infection. Following UV disinfection, water passes through a contact tank where time is provided for the chlorine compound created in Step 3 to complete the disinfection process.

6 Fluoridation and Phosphate Addition

After UV disinfection, the CRWD adds fluoride to promote children's dental health. Phosphate is also added to chemically stabilize the water and lessen the possibility that lead will leach out of pipes and into tap water.

7 Distribution

From here, finished water is pumped directly into the distribution system. The distribution system includes water storage tanks and more than 600 miles of water main pipes that deliver water to homes and businesses. Water not immediately consumed flows into storage tanks for use when demand exceeds plant pumpage. Water stored in elevated tanks helps stabilize pressure in the distribution system and serves as an emergency reserve for fire protection.



Water Quality Findings

This table summarizes required water quality monitoring results for regulated parameters that were detected in the 2016 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		POSSIBLE SOURCES OF CONTAMINANT
	UNITS	MCL	MCLG	RANGE	AVG	RANGE	AVG	
Nitrate	mg/L	10	10	3.0 - 6.98	5.25	2.94 - 8.23	5.84	Run-off from fertilizer, leaching from septic tanks, sewage; erosion of natural deposits
Nitrite	mg/L	1	1	0.0 - 0.06	0.04	0.0 - 0.03	0.01	Run-off from fertilizer, leaching from septic tanks, sewage; erosion of natural deposits
Fluoride	mg/L	4	4	0.46 - 1.24	0.69	0.15 - 0.91	0.61	Water additive which promotes strong teeth; erosion of natural deposits; discharge from fertilizer and aluminum factories.
Sodium	mg/L	NA	NA	NA	8.8	NA	7.2	Erosion of natural deposits; added to water during treatment process
Sulfate	mg/L	NA	NA	22.0 - 32.3	27	20.5 - 32.3	26.4	Erosion of natural deposits
Chloride	mg/L	NA	NA	21.5 - 30.8	26.6	19.5 - 29.0	24.8	Erosion of natural deposits, run-off
Arsenic	µg/L	10	10	0.0 - 0.84	0.4269	0.0 - 0.56	0.2646	Erosion of natural deposits
Copper	mg/L	NA	1.0	0.0 - 0.02	0.004	0.004 - 0.009	0.006	Corrosion of household plumbing, erosion of natural deposits
Zinc	mg/L	NA	5	0.15 - 0.30	0.2	0.18 - 0.25	0.22	Corrosion of household plumbing, erosion of natural deposits
Manganese	mg/L	NA	0.05	0.0 - 0.05	0.02	0.0 - 0.0007	0.0001	Corrosion of household plumbing, erosion of natural deposits
Toluene	mg/L	1	1	0.0 - 0.0005	0.0005	NA	ND	Discharge from petroleum factories

COMMON HERBICIDES				J AVE. PLANT		NW PLANT		POSSIBLE SOURCES OF CONTAMINANT
	UNITS	MCL	MCLG	RANGE	AVG	RANGE	AVG	
Atrazine	µg/L	3	3	0.1 - 0.3	0.06	0.1 - 0.5	0.07	Runoff from fertilizer used on row crops
Metolachlor	µg/L	Unregulated	Unregulated	0.1 - 0.3	0.03	0.1 - 0.3	0.03	Runoff from fertilizer used on row crops

Analysis for the following Herbicides revealed No Detects (ND) at either plant distribution system entry point: Cyanazine, Alachlor, Metribuzin, Butylate, Trifluralin, Acetochlor, Desethyl Atrazine, Desisopropyl Atrazine, Siamazine, Ametryn, EPTC, Prometon, Propachlor, Propazine, Dimethenamid, Butachlor

RADIOLOGICAL				J AVE. PLANT		NW PLANT		POSSIBLE SOURCES OF CONTAMINANT
	UNITS	MCL	MCLG	RANGE	AVG	RANGE	AVG	
Radon	pCi/L	300 pCi/L	0 pCi/L	34 - 70	49.5	21 - 26	23.5	Erosion of natural deposits
COMBINED RADIUM	pCi/L	5 pCi/L	0 pCi/L	NA	<1	NA	<1	Erosion of natural deposits
Radium -228	pCi/L	5 pCi/L	0 pCi/L	NA	<0.6	NA	<0.6	Erosion of natural deposits
Gross Alpha	pCi/L	5 pCi/L	0 pCi/L	NA	<0.7	NA	0.7	Erosion of natural deposits. Detect from 2015, 2016 result = <0.7

TOTAL ORGANIC CARBON (TOC)				J AVE. PLANT			NW PLANT			POSSIBLE SOURCES OF CONTAMINANT
				RANGE	AVERAGE	VIOLATION	RANGE	AVERAGE	VIOLATION	
Treatment technique requires the Running Annual Average (RAA) of credits given for TOC removal be at least 1			Credits Received for TOC Removal	2.05 - 3.64	2.73	NO	0.5 - 3.09	2.04	NO	Naturally present in the environment

DISTRIBUTION SYSTEM MONITORING

Lead and Copper Rule	UNITS	ACTION LEVEL (AL)	MCLG	RANGE	90%	95%	SAMPLES EXCEEDING AL	VIOLATION	POSSIBLE SOURCES OF CONTAMINANT
Lead	µg/L	15	0	0.0 - 48.0	11.0	12.0	2	NO	Corrosion of household plumbing systems; erosion of natural deposits
Copper	mg/L	1.3	1.3	0.0 - 0.11	0.07	0.08	0	NO	Corrosion of household plumbing systems; erosion of natural deposits

Revised Total Coliform Rule	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUG	SEP	OCT	NOV	DEC	POSSIBLE SOURCES OF CONTAMINANT	
Total # Samples/Month	105	104	104	104	104	104	105	104	104	104	106	104		Naturally present in the environment
# Positive Coliform Samples/Mo.	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	Units	MRDL	MRDLG	Range	Average	Violation	POSSIBLE SOURCE
Total Chlorine Residual	mg/L	4	4	1.2 - 3.9	3.54	NO	Water additive used to control microbial growth

DISINFECTION BY-PRODUCTS <i>Due to consistently low detections — reduced monitoring became effective in 2016</i>				J AVE. PLANT <i>Data Reflects Source Entry Point Only</i>			NW PLANT <i>Data Reflects Distribution sampling sites</i>			POSSIBLE SOURCE
	Units	MCL	MCLG	RANGE	AVG	VIOLATION	RANGE	AVG	VIOLATION	
Total Trihalomethanes (TTHM)	µg/L	80	NA	0 - 0	0	NO	0.0 - 3.4	1.6	NO	By-product of chlorinating drinking water
Total Haloacetic Acids (HAA5)	µg/L	60	NA	0 - 0	0	NO	0 - 0	0	NO	By-product of chlorinating drinking water

UCMR2 (UNREGULATED CONTAMINANT MONITORING RULE)

NITROSAMINE COMPOUNDS	J AVE. PLANT		J AVE. DISTRIBUTION AREA		NW PLANT		NW DISTRIBUTION AREA	
EPA Method 521 N-nitroso-dimethyl amine (NDMA) µg/L	RANGE	AVG	RANGE	AVG	RANGE	AVG	RANGE	AVG
	0.0032 - 0.0056	0.004	0.0038 - 0.0059	0.005	0.0000 - 0.0027	0.001	0.0000 - 0.0097	0.005
NO CURRENT REGULATORY MCL - EPA mandatory sampling and analysis to determine contaminant occurrence nationally and establish regulatory MCLs								

UCMR3 (UNREGULATED CONTAMINANT MONITORING RULE)

	Method	1,4 Dioxane µg/L	Chlorate µg/L	Chromium 6+ µg/L	Total Chromium µg/L	Total Molybdenum µg/L	Total Strontium µg/L	Total Vanadium µg/L	Total Cobalt µg/L	Specific Hormones µg/L	Six Specific Perfluorinated Compounds µg/L
		EPA 522	EPA 300.1	EPA 218.7	EPA 200.8	EPA 200.8	EPA 200.8	EPA 200.8	EPA 200.8	EPA 539	EPA 537
J Ave. Treatment Plant	Range	0.0 - 0.12	ND	1.3 - 2.0	1.5 - 1.9	1.0 - 1.7	58 - 69	0.95 - 1.5	ND	ND	ND
	Average	0.030	ND	1.7	1.7	1.4	64	1.2	ND	ND	ND
J Ave. Distribution Area	Range	NA	ND	1.3 - 1.9	1.5 - 1.8	1.1 - 1.7	55 - 69	0.94 - 1.5	ND	ND	ND
	Average	NA	ND	1.7	1.7	1.5	63.5	1.2	ND	ND	ND
NW Treatment Plant	Range	0.0 - 0.078	ND	1.4 - 1.9	1.6 - 2.1	0.0 - 1.3	69 - 75	1.1 - 1.2	ND	ND	ND
	Average	0.038	ND	1.6	1.8	0.88	73.3	1.2	ND	ND	ND
NW Plant Distribution Area	Range	NA	ND	1.3 - 1.8	1.5 - 2.0	1.1 - 1.6	63 - 70	1.1 - 1.3	ND	ND	ND
	Average	NA	ND	1.6	1.7	1.5	66	1.2	ND	ND	ND
	MCL	NA	NA	NA	100	NA	NA	NA	NA	NA	NA
NO CURRENT REGULATORY MCL - EPA mandatory sampling and analysis to determine contaminant occurrence nationally and establish regulatory MCLs											

TREATMENT TECHNIQUE INDICATORS

Treatment technique requires that turbidity of Combined Filter Effluent (CFE) not exceed 1.0 NTU at any time	UNITS		J AVE. PLANT			NW PLANT			SOURCE OF CONTAMINANT
	MCL		RANGE	AVERAGE	VIOLATION	RANGE	AVERAGE	VIOLATION	Soil runoff
	NTU	1.0	0.04 - 0.22	0.05	NO	0.03 - 0.42	0.06	NO	
Treatment technique also requires that no more than 5% of Combined Filter Effluent (CFE) samples exceed 0.3 NTU monthly	J AVE. PLANT		NW PLANT			SOURCE OF CONTAMINANT			
	MCL	% > 0.3 NTU	VIOLATION	MCL	% > 0.3 NTU	VIOLATION	Soil runoff		
	5%	0%	NO	5%	0%	NO			

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 319-286-5283. *Information about work being done to help minimize contamination of the source water supply can be found at www.cedar-rapids.org/residents/utilities/middle_cedar_partnership_project.php.*

	Arsenic µg/L (ppb)	Total Coliform cfu/100ml	E.coli cfu/100ml	Copper µg/L	Zinc µg/L	Manganese µg/L	Iron µg/L	Sodium mg/L	Nitrate mg/L	TOC mg/L
2012 Annual Average	1.26	9	<1	0.1	0.2	270.0	80.0	14.7	1.5	1.79
2013 Annual Average	1.16	108	<1	2.4	0.9	348.0	87.0	13.9	2.6	2.05
2014 Annual Average	0.88	181	<1	2.5	1.0	228.1	46.1	13.0	3.6	2.02
2015 Annual Average	1.15	720	<1	2.8	1.0	214.9	65.1	11.9	4.0	2.10
2016 Annual Average	3.05	33	<1	6.8	2.1	166.0	63.4	9.2	5.5	2.56

Analysis for the following parameters revealed No Detects (ND): Cryptosporidia, Giardia, Lead

Acronyms: **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

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 water smells terrible at the kitchen tap. What could be wrong?

Many times gases in the drain trap are displaced upward when running water goes down the drain. It is easy to mistake the odor as coming from the running water when it is coming from the drain. Try pouring a mild bleach solution

down the drain and letting the tap run full force for two to three minutes. This should flush the system clean.

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.

This morning I began seeing black particles and debris in my water and it looks yellowish. Do you think I have a broken pipe somewhere?

Most times when water discoloration or particles show up all of a sudden, it is because a hydrant or valve has been opened in the area. This happens often in the spring and fall, when street department crews are cleaning the streets or the fire department is testing hydrants before winter weather hits. This generally settles back down and clears on its own within 24-48 hours and is more of an aesthetic issue than a health concern.

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.

Radioactivity

The spontaneous decay or disintegration of an unstable atomic nucleus, accompanied by the emission of radiation.

Radon

Radon is a radioactive gas that you can't see, taste or smell. It is found throughout the U.S. Radon can move up through the ground and into a home through cracks and holes in the foundation. Radon can build up to high levels in all types of homes. Radon can also get into indoor air when released from tap water from showering, washing dishes and other household activities. Compared to radon entering the home through soil, radon entering the home through tap water will, in most cases, be a small source of radon in indoor air. Radon is a known human carcinogen. Breathing air containing radon can lead to lung cancer. Drinking water containing radon may also cause increased risk of stomach cancer. If you are concerned about radon in your home, test the air in your home. Testing is inexpensive and easy. 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.

For additional information, call your state radon program (800-838-5992) or call 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.