



# 2013 Water Quality Report

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 facility.

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



For more information, visit us online at [www.CityofCR.com/WaterReport](http://www.CityofCR.com/WaterReport)



# Building Resiliency

The Cedar Rapids Water Division (CRWD) is tasked with delivering clean, safe water to our customers every day of the year, regardless of the weather. While there are many challenges to delivering on this commitment, severe weather conditions present the most significant challenges. Whether it is a record-breaking flood threatening to submerge our well system or a severe drought threatening to dry up our water supply, the Cedar Rapids Water Division is better prepared to respond to Mother Nature's swings.

## Rising Above Future Floods

The wells that bring water from the aquifer near the river to our treatment plants have been raised to withstand a 2008-magnitude flood. Cedar Rapids has wells placed near the river to draw water from the sand and gravel deposits surrounding the riverbed, also called an alluvial aquifer. Using the alluvial aquifer allows the city to produce enough water to efficiently meet the needs of our residents and support local industries.

Following the Flood of 2008, the city sought and received assistance from the Federal Emergency Management Agency (FEMA) to help protect our water from future floods. The project raised the height of 43 vertical wells at least three feet above the 2008 flood level and raised the electrical equipment for three horizontal collector wells to protect the equipment from future flood damage. Raising the wells keeps the electrical and control panels out of danger, protecting our water supply from future floods.

## More Capacity During Droughts

The construction of a new horizontal collector well has increased Cedar Rapids' ability to draw water from the aquifer and deliver it to either water treatment plant, helping the Cedar Rapids Water Division meet customers' needs. Horizontal collector wells are shaped like a pedestal table. The horizontal collection screens extend out like the feet of the table and deliver water to a central shaft, where it can be pumped to our treatment plants. One horizontal collector well can provide as much water as five to ten vertical wells.

The City of Cedar Rapids has also developed a drought response plan to guide our community in responding to future drought conditions. The drought response plan incorporates different water conservation measures based on how much strain the drought is placing on our water resources. You can find more information about our drought response plan at [www.CityofCR.com/Drought](http://www.CityofCR.com/Drought).

## Looking to the Future

While we cannot predict the weather, we can be prepared to respond to the challenges the weather may create. The Cedar Rapids Water Division has invested in key infrastructure improvements to ensure we can deliver some of the best tasting water in Iowa to our customers rain or shine.



## Educational Information

### Nitrate

Samples of Cedar Rapids drinking water did not exceed 10 ppm of nitrates in 2013.

A dissolved form of nitrogen found in fertilizers and sewage by-products 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 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 healthcare provider.

### Lead

Our drinking water contains little or no lead when it leaves our treatment plant. 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 – 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(800-426-4791) or at [www.EPS.gov/Safewater/Lead](http://www.EPS.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 Laboratory Inc. Newton, IA 641-792-8451
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Additional information is available from the Safe Drinking Water Hotline, 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 7**, from 7:30 a.m. - noon, at the downtown Farmers Market booth in Greene Square Park (400 4th Avenue SE)

**Thursday, June 12**, from 5 - 7 p.m., at the NewBo City Market (1100 3rd Street SE)

You are also welcome to bring questions to any of the regular City Council meetings, which are held at the new City Hall Building at 101 1st Street SE. These meetings are announced in The Gazette, and a schedule of future meetings can be viewed at [www.CityofCR.com](http://www.CityofCR.com).

For more information on this Water Quality Report or for copies of our monitoring reports (CRWD's or USGS'), contact the Cedar Rapids Water Department at 319-286-5900.

## 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. Immunocompromised persons — those undergoing cancer chemotherapy or organ transplants, the elderly, infants or people with HIV/AIDS or other immune system disorders — can be especially susceptible to infections. We ask anyone who is immunocompromised to seek advice about drinking water from healthcare providers. Guidelines from the EPA and Centers for Disease Control on appropriate steps to lessen the risk of infection by microbial contaminants are available from the National Safe Drinking Water Hotline at 800-426-4791.

## Water Value

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

### \$3.74 Buys You 1,000 Gallons of Clean Water:

Engineering and Administrative Support \$0.31

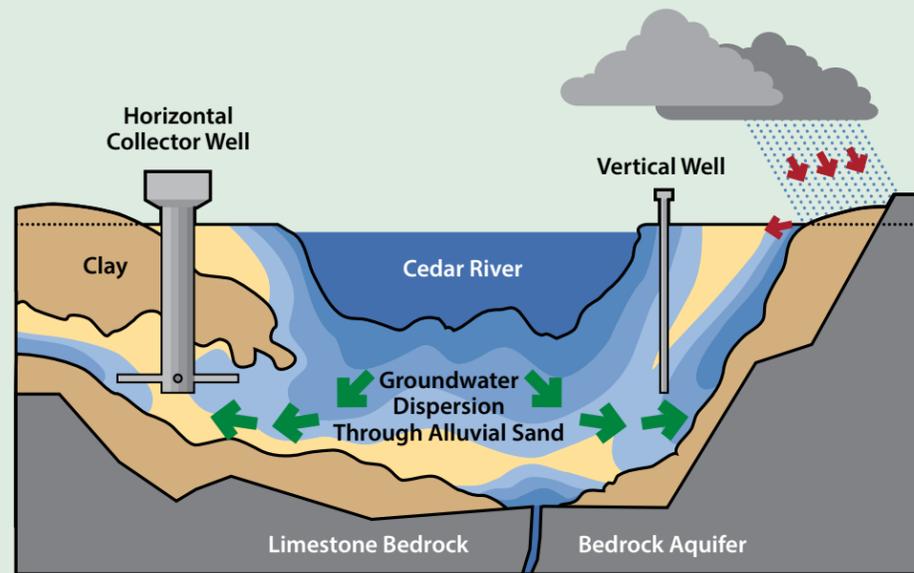
Water Source (Wells) \$0.45

Meter and Customer Service \$0.47

Distribution and Storage \$0.94

Water Treatment \$1.57





## 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

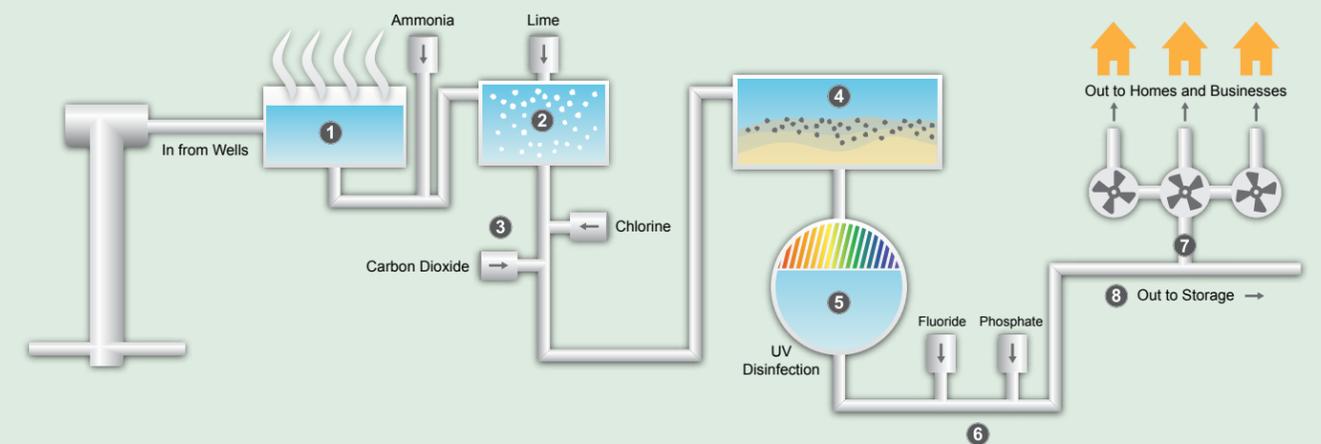
The Cedar Rapids Water Division continues to work with state and federal agencies to monitor and assess our watershed. The Cedar River watershed covers more than 6,500 square miles upstream of Cedar Rapids and extends

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. (If you are interested in reviewing our source water assessment or any monitoring results, please contact the CRWD at 319-286-5900.)

## 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; riverbank restoration; 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 slaked lime 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.

### 8. RESERVES

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 2013 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			SOURCE OF CONTAMINANT
	UNITS	MCL	MCLG	RANGE	AVG	RANGE	AVG			
Nitrate	mg/L	10	10	0.22 - 6.54	3.38	0.77 - 7.52	4.46	Runoff from fertilizer, leaching from septic tanks, sewage; erosion of natural deposits		
Nitrite	mg/L	1	1	0.0 - 0.04	0.03	0.0 - 0.04	0.03	Runoff from fertilizer, leaching from septic tanks, sewage; erosion of natural deposits		
Fluoride	mg/L	4	4	0.12 - 0.71	0.45	0.11 - 0.62	0.44	Water additive that promotes strong teeth; erosion of natural deposits; discharge from fertilizer and aluminum factories		
Sodium	mg/L	NA	NA	8.8 - 20.7	13.9	8.8 - 21.7	14.1	Erosion of natural deposits; added to water during treatment process		
Sulfate	mg/L	NA	NA	27.6 - 42.0	34.8	28.3 - 46.3	38.7	Erosion of natural deposits		
Chloride	mg/L	NA	NA	26.4 - 45.2	33.8	25.3 - 44.6	33	Erosion of natural deposits, runoff		
Arsenic	µg/L	10	10	0.0 - 1.68	0.9369	0.0 - 0.3	0.1692	Erosion of natural deposits		

COMMON HERBICIDES										
				J AVE. PLANT			NW PLANT			SOURCE OF CONTAMINANT
	UNITS	MCL	MCLG	MAX	RANGE	AVG	MAX	RANGE	AVG	
Atrazine	µg/L	3	3	0.7	0.0 - 0.7	0.13	0.5	0.0 - 0.50	0.1	Runoff from fertilizer used on row crops
Metalachlor	µg/L	Unregulated	Unregulated	0.2	0.0 - 0.2	0.03	0.2	0.0 - 0.2	0.02	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			SOURCE OF CONTAMINANT
	UNITS	MCL	MCLG	MAX	RANGE	AVG	MAX	RANGE	AVG	
Radon	pCi/L	300 pCi/L	0 pCi/L	53	24 - 53	34.3	23	<17 - 23	20.3	Erosion of natural deposits
COMBINED RADIUM	pCi/L	5 pCi/L	0 pCi/L	NA	NA	<1.0	NA	NA	<1.0	Erosion of natural deposits
Radium -228	pCi/L	5 pCi/L	0 pCi/L	NA	NA	<0.9	NA	NA	<0.4	Erosion of natural deposits
Gross Alpha	pCi/L	5 pCi/L	0 pCi/L	NA	NA	<0.8	NA	NA	<1.0	Erosion of natural deposits

TOTAL ORGANIC CARBON (TOC)										
				J AVE. PLANT			NW PLANT			SOURCE 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	0.56 - 3.21	1.75	NO	0.0 - 2.53	1.41	NO	Naturally present in the environment

DISTRIBUTION SYSTEM MONITORING										
Lead and Copper Rule										
	Units	Action Level (AL)	MCLG	MAX	Range	90%	95%	Samples exceeding AL	Violation	SOURCE OF CONTAMINANT
Lead	µg/L	15	0	9.0	0 - 9	2	4.0	0	NO	Corrosion of household plumbing systems; erosion of natural deposits
Copper	mg/L	1.3	1.3	0.10	0 - 0.10	0.03	0.04	0	NO	Corrosion of household plumbing systems; erosion of natural deposits

Total Coliform Rule												
	Units	MCL	MCLG	MAX	Range	AVG	Total # Samples Annually	Total # Positive Samples Annually	% Positive Samples Annually	Annual Violation	Monthly Violation	SOURCE OF CONTAMINANT
	%	Positive Samples > 5% per month	0	NA	NA	NA	1265	3	0.24%	NO	NO	Naturally present in the environment

Disinfectant										
	MRDL	MRDLG	MAX	RANGE	AVG	VIOLATION	SOURCE OF CONTAMINANT			
Total Chlorine Residual	4	4	3.4	3.1 - 3.4	3.3	NO	Water additive used to control microbial growth			

DISINFECTION BY-PRODUCTS												
				J AVE. PLANT				NW PLANT			SOURCE OF CONTAMINANT	
	Units	MCL	MCLG	MAX	RANGE	AVG	VIOLATION	MAX	RANGE	AVG		
Total Trihalomethanes (TTHM)	µg/L	80	NA	0	0 - 0	0	NO	1.2	0 - 1.2	0.55	NO	By-product of chlorinating drinking water
Total Haloacetic Acids (HAA5)	µg/L	60	NA	0	0 - 0	0	NO	6	0 - 6	0.38	NO	By-product of chlorinating drinking water

UCMR2 (UNREGULATED CONTAMINANT MONITORING RULE)					
NITROSAMINE COMPOUNDS					
EPA Method 521 N-nitroso-dimethyl amine (NDMA)	UNITS	J Ave. Treatment Plant	J Ave. Distribution Area	NW Treatment Plant	NW Plant Distribution Area
Average	µg/L	0.004	0.005	0.001	0.005
Range	µg/L	0.0032 - 0.0056	0.0038 - 0.0059	0.0000 - 0.0027	0.0000 - 0.0097

NO CURRENT REGULATORY MCL - EPA mandatory sampling and analysis to determine contaminant occurrence nationally and establish regulatory MCLs.

UCMR3 (UNREGULATED CONTAMINANT MONITORING RULE)												
		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	Seven Specific Hormones µg/L	Six Specific Perfluorinated Compounds µg/L	Seven Specific Volatile Organic Compounds µg/L
J Ave. Treatment Plant	Method	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	EPA 524.3
	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	ND
	Average	0.030	ND	1.7	1.7	1.4	64	1.2	ND	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	ND
	Average	NA	ND	1.7	1.7	1.5	63.5	1.2	ND	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	ND
	Average	0.038	ND	1.6	1.8	0.88	73.3	1.2	ND	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	ND
	Average	NA	ND	1.6	1.7	1.5	66	1.2	ND	ND	ND	ND
	MCL	NA	NA	NA	100	NA	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									
	UNITS	MCL	J AVE. PLANT			NW PLANT			SOURCE OF CONTAMINANT
Treatment technique requires that turbidity of Combined Filter Effluent (CFE) not exceed 1.0 NTU at any time	NTU	1.0	RANGE	AVERAGE	VIOLATION	RANGE	AVERAGE	VIOLATION	Soil Runoff
			0.03 - 0.23	0.04	NO	0.02 - 0.21	0.05	NO	

	UNITS	MCL	J AVE. PLANT			NW PLANT			SOURCE OF CONTAMINANT
Treatment technique also requires that no more than 5% of Combined Filter Effluent (CFE) samples exceed 0.3 NTU monthly	NTU	5%	% > 0.3 NTU	0%	VIOLATION	% > 0.3 NTU	0%	VIOLATION	Soil Runoff
					NO			NO	

**Source Water Monitoring:** 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.

	Total Coliform	E. coli	Cryptosporidia	Giardia	Lead µg/L	Copper µg/L	Zinc µg/L	Manganese µg/L	Iron µg/L	Sodium mg/L
2011 Annual Average	27	<1	ND	ND	ND	5.0	1.1	153	80	12.7
2012 Annual Average	9	<1	ND	ND	ND	0.1	0.2	270	80	14.7
2013 Annual Average	108	<1	ND	ND	ND	2.4	0.9	348	87	13.9

**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 **Max:** Highest Level Detected

**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](http://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 does not pose a health risk.

### 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.

### 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 the water. We monitor it because it is a good indicator of the effectiveness of our filtration system.

### Violation

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