

ANNUAL

WATER  
QUALITY  
REPORT

*Water testing performed in 2009*



## Maintaining High Standards

Meeting and exceeding water quality standards in West Des Moines is not just a goal, it is a must. Clean and safe drinking water is vital to our health and well being. Our Annual Water Quality Report covers all testing performed during the last calendar year. Once again, we are proud to report that West Des Moines Water Works has met or exceeded standards set by state and federal regulatory agencies.

Please take time to read this important information. We encourage you to share your thoughts with us on the information contained in this report. Should you ever have any questions, we are always available to assist you.

## Important Health Information

Nitrate in drinking water at levels above 10 ppm is a health risk for infants of 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, you should ask advice from your health care provider.

Some people may be more vulnerable to contaminants in drinking water than the general population.

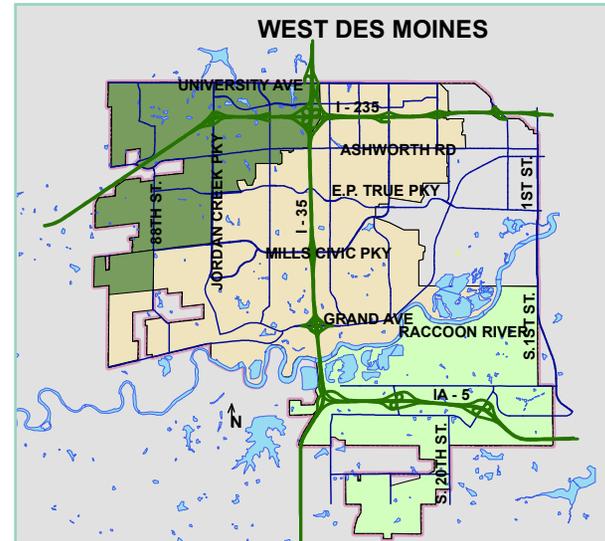


Immunocompromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants may be particularly at risk from infections.

These people should seek advice about drinking water from their health care providers. The U.S. EPA/CDC (Centers for Disease Control and Prevention) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline at (800) 426-4791 or [www.epa.gov/safewater/hotline](http://www.epa.gov/safewater/hotline).

## Community Participation

You are invited to participate in our public forum and voice your concerns about your drinking water. The West Des Moines Water Works Board of Trustees meets at 4 p.m. on the third Monday of each month. Meetings are held at the A.C. Ward Municipal Water Treatment Plant, 1505 Railroad Avenue, West Des Moines, Iowa.



West Des Moines water customers in the NW and SE portion of the city receive their water from the Des Moines Water Works.

## Where Does My Water Come From?

West Des Moines Water Works obtains a portion of its water from 19 shallow wells (all between 40 and 50 feet deep) that draw water from the Raccoon River Alluvial Aquifer. Water is also obtained from three wells drilled into the much deeper Jordan Aquifer (2,500 feet deep). In addition, some West Des Moines water is purchased from the Des Moines Water Works (DMWW). This is treated and purified water from the Raccoon and Des Moines Rivers which is blended with treated water from the West Des Moines Water Works. Approximately 5,000 West Des Moines Water Works customers (see map) receive their water solely from the Des Moines Water Works.

## Substances That Could Be in Water

To ensure that tap water is safe to drink, the U.S. EPA prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. U.S. Food and Drug Administration regulations establish limits for contaminants in bottled water, which must provide the same protection for public health. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of these contaminants does not necessarily indicate that the water poses a health risk.

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals, in some cases radioactive material, and substances resulting from the presence of animals or from human activity. Substances that may be present in source water include:

**Microbial Contaminants**, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, or wildlife;

**Inorganic Contaminants**, such as salts and metals, which can be naturally occurring or may result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming;

**Pesticides and Herbicides**, which may come from a variety of sources, such as agriculture, urban stormwater runoff, and residential uses;

**Organic Chemical Contaminants**, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production and may also come from gas stations, urban stormwater runoff, and septic systems;

**Radioactive Contaminants**, which can be naturally occurring or may be the result of oil and gas production and mining activities.

For more information about contaminants and potential health effects, call the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.

## Source Water Assessment

A Source Water Assessment (SWA) is an evaluation by the Iowa Department of Natural Resources (IDNR) of the delineated area around our listed sources through which contaminants, if present, could migrate and reach our source water. It also includes an inventory of potential sources of contamination within the delineated area and a determination of the water supply's susceptibility to contamination by the identified potential sources.

West Des Moines Water Works' SWA has determined the Raccoon River Alluvial Aquifer to be highly susceptible to contamination because the characteristics of the aquifer and overlying materials allow contaminants to move through the aquifer fairly quickly. The alluvial wells will be most susceptible to dry cleaners, gas stations, industrial sites, and wastewater dischargers. It is important to note that no contaminants resulting from these activities have been found in your drinking water.

The SWA has also determined that the Jordan Aquifer is not susceptible to contamination because the characteristics of the aquifer and overlying materials prevent easy access of contaminants to the aquifer. The Jordan Aquifer will not be susceptible to most contaminant sources except through pathways to the aquifer such as abandoned or poorly maintained wells.

Des Moines Water Works' Source Water Assessment (DMWW SWA) identifies contaminants having an impact on the Raccoon and Des Moines River watersheds. To obtain a copy of the DMWW SWA, visit [www.dmww.com](http://www.dmww.com) or call (515) 222-3460 to request a copy.

## Questions?

For more information about this report, or for any questions relating to your drinking water, please call Mitch Pinkerton, Water Production Supervisor, at (515) 222-3465.



## Water Conservation

You can play a role in conserving water and save yourself money in the process by becoming conscious of the amount of water your household is using and by looking for ways to use less whenever you can. It is not hard to conserve water. Here are a few tips:

Automatic dishwashers use 15 gallons for every cycle, regardless of how many dishes are loaded. So get a run for your money and load it to capacity.

Turn off the tap when brushing your teeth.

Check every faucet in your home for leaks. Just a slow drip can waste 15 to 20 gallons a day. Fix it and you can save almost 6,000 gallons per year.

Check your toilets for leaks by putting a few drops of food coloring in the tank. Watch for a few minutes to see if the color shows up in the bowl. It is not uncommon to lose up to 100 gallons a day from an invisible toilet leak. Fix it and you save more than 30,000 gallons a year.

Use your water meter to detect hidden leaks. Simply turn off all taps and water using appliances. Then check the meter after 15 minutes. If it moved, you have a leak.

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## Lead and 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. We are responsible for providing high-quality drinking water but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at [www.epa.gov/safewater/lead](http://www.epa.gov/safewater/lead).

## What Are PPCPs?

When cleaning out your medicine cabinet, what do you do with your expired pills? Many people flush them down the toilet or toss them into the trash. Although this seems convenient, these actions could threaten our water supply.

Recent studies are generating a growing concern over pharmaceuticals and personal care products (PPCPs) entering water supplies. PPCPs include human and veterinary drugs (prescription or over-the-counter) and consumer products, such as cosmetics, fragrances, lotions, sunscreens, and house cleaning products. Over the past five years, the number of U.S. prescriptions increased 12 percent to a record 3.7 billion, while nonprescription drug purchases held steady around 3.3 billion. Many of these drugs and personal care products do not biodegrade and may persist in the environment for years.

The best and most cost-effective way to ensure safe water at the tap is to keep our source waters clean. Never flush unused medications down the toilet or sink. Instead, check to see if the pharmacy where you made your purchase accepts medications for disposal, or contact your local health department for information on proper disposal methods and drop-off locations. You can also go on the Web at [www.Earth911.com](http://www.Earth911.com) to find more information about disposal locations in your area.

## Sampling Results

During the past year we have taken hundreds of water samples in order to determine the presence of any radioactive, biological, inorganic, volatile organic, or synthetic organic contaminants. The table below shows only those contaminants that were detected in the water. The state allows us to monitor for certain substances less than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

Des Moines Water Works operates two wells known as Aquifer Storage and Recovery (ASR) Wells. Treated drinking water is injected into the wells during cold-weather months and recovered for use during warm-weather months. Year 2009 testing data unique to this water can be seen below.

REGULATED SUBSTANCES									
				West Des Moines Water Works A.C. Ward Municipal Water Treatment Plant		Des Moines Water Works McMullen Plant			
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
<b>Alpha Emitters</b> (pCi/L)	2008	15	0	2.1	NA	NA	NA	No	Erosion of natural deposits
<b>Arsenic</b> (ppb)	2009	10	0	NA	NA	NA	NA	No	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes
<b>Atrazine</b> (ppb)	2009	3	3	NA	NA	0.1	NA	No	Runoff from herbicide used on row crops
<b>Chlorine</b> (ppm)	2009	[4]	[4]	0.99	0.1–2.2	NA	NA	No	Water additive used to control microbes
<b>Di(2-ethylhexyl) Phthalate</b> (ppb)	2009	6	0	NA	NA	NA	NA	No	Discharge from rubber and chemical factories
<b>Fluoride</b> (ppm)	2009	4	4	0.88	0.58–1.17	1.27	0.80–1.27	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
<b>Haloacetic Acids [HAA]</b> (ppb)	2009	60	NA	8	ND-8	NA	NA	No	By-product of drinking water disinfection
<b>Nitrate</b> (ppm)	2009	10	10	1.4	ND–1.4	8.2	0.64–8.2	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
<b>TTHMs [Total Trihalomethanes]</b> (ppb)	2009	80	NA	18.1	ND–43	NA	NA	No	By-product of drinking water chlorination
<b>Total Coliform Bacteria</b> <sup>1</sup> (% positive samples)	2009	5% of monthly samples are positive	0	0.016	NA	NA	NA	No	Naturally present in the environment
<b>Total Organic Carbon</b> (removal ratio)	2009	TT	NA	NA	NA	1.83	NA	No	Naturally present in the environment
<b>Turbidity</b> <sup>2</sup> (NTU)	2009	TT	NA	NA	NA	0.29	0.04–0.29	No	Soil runoff
<b>Turbidity</b> (Lowest monthly percent of samples meeting limit)	2009	TT	NA	NA	NA	100	NA	No	Soil runoff

**REGULATED SUBSTANCES**

				Des Moines Water Works Fleur Drive Plant		LP Moon ASR Well		McMullen Plant ASR Well			
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
<b>Alpha Emitters</b> (pCi/L)	2008	15	0	NA	NA	NA	NA	NA	NA	No	Erosion of natural deposits
<b>Arsenic</b> (ppb)	2009	10	0	NA	NA	2	NA	NA	NA	No	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes
<b>Atrazine</b> (ppb)	2009	3	3	NA	NA	0.2	NA	0.1	NA	No	Runoff from herbicide used on row crops
<b>Chlorine</b> (ppm)	2009	[4]	[4]	NA	NA	NA	NA	NA	NA	No	Water additive used to control microbes
<b>Di(2-ethylhexyl) Phthalate</b> (ppb)	2009	6	0	NA	NA	NA	NA	0.6	NA	No	Discharge from rubber and chemical factories
<b>Fluoride</b> (ppm)	2009	4	4	1.3	0.18–1.3	1.45	NA	1.17	NA	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
<b>Haloacetic Acids [HAA]</b> (ppb)	2009	60	NA	NA	NA	NA	NA	NA	NA	No	By-product of drinking water disinfection
<b>Nitrate</b> (ppm)	2009	10	10	8	0.92–8.0	4.93	3.88–4.93	4.77	3–4.77	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
<b>TTHMs [Total Trihalomethanes]</b> (ppb)	2009	80	NA	NA	NA	NA	NA	NA	NA	No	By-product of drinking water chlorination
<b>Total Coliform Bacteria</b> <sup>1</sup> (% positive samples)	2009	5% of monthly samples are positive	0	NA	NA	NA	NA	NA	NA	No	Naturally present in the environment
<b>Total Organic Carbon</b> (removal ratio)	2009	TT	NA	2.6	NA	NA	NA	NA	NA	No	Naturally present in the environment
<b>Turbidity</b> <sup>2</sup> (NTU)	2009	TT	NA	0.09	0.03–0.09	NA	NA	NA	NA	No	Soil runoff
<b>Turbidity</b> (Lowest monthly percent of samples meeting limit)	2009	TT	NA	100	NA	NA	NA	NA	NA	No	Soil runoff

## UNREGULATED SUBSTANCES

Tap water samples were collected for lead and copper analyses from sample sites throughout the community

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AL	MCLG	AMOUNT DETECTED (90TH%TILE)	SITES ABOVE AL/ TOTAL SITES	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE				
<b>Copper</b> (ppm)	2007	1.3	1.3	0	0/30	ND-.24	No	Corrosion of household plumbing systems				
<b>Lead</b> (ppb)	2007	15	0	3	1/30	ND-34	No	Corrosion of household plumbing systems				
	West Des Moines Water Works A.C. Ward Municipal Water Treatment Plant			Des Moines Water Works McMullen Plant	Des Moines Water Works Fleur Drive Plant		LP Moon ASR Well	McMullen Plant ASR Well				
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	TYPICAL SOURCE
<b>Sodium</b> (ppm)	2009	200	93-200	11	8-21	15	12-30	28	NA	15	NA	Erosion of natural deposits
<b>Sulfate</b> (ppm)	2009	180	ND-180	NA	NA	NA	NA	NA	NA	NA	NA	Erosion of natural deposits

<sup>1</sup>During our regular monthly samples, 1 of the 63 samples taken in May tested positive for total coliform bacteria; repeat confirmation samples showed no contamination present.

<sup>2</sup>Turbidity is a measure of the cloudiness of the water. It is monitored because it is a good indicator of the effectiveness of the filtration system.

## Definitions

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

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

**MCLG (Maximum Contaminant Level Goal):** The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

**MRDL (Maximum Residual Disinfectant Level):** The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

**MRDLG (Maximum Residual Disinfectant Level Goal):** The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

**NA:** Not applicable.

**ND (Not Detected):** Indicates that the substance was not found by laboratory analysis.

**NTU (Nephelometric Turbidity Units):** Measurement of the clarity, or turbidity, of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

**ppb (parts per billion):** One part substance per billion parts water (or micrograms per liter).

**ppm (parts per million):** One part substance per million parts water (or milligrams per liter).

**removal ratio:** A ratio between the percentage of a substance actually removed to the percentage of the substance required to be removed.

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