

A close-up photograph of water being poured from a glass pitcher into a clear glass. The water is captured in mid-pour, creating a dynamic splash and bubbles. The background is a blurred wooden surface.

ANNUAL WATER QUALITY REPORT

REPORTING YEAR 2018



Presented By
**West Des Moines
Water Works**

Our Mission Continues

We are once again pleased to present our annual water quality report covering all testing performed between January 1 and December 31, 2018. Over the years, we have dedicated ourselves to producing drinking water that meets all state and federal standards. We continually strive to adopt new methods for delivering the best-quality drinking water to you. As new challenges to drinking water safety emerge, we remain vigilant in meeting the goals of source water protection, water conservation, and community education while continuing to serve the needs of all our water users.

Please remember that we are always available should you ever have any questions or concerns about your water. For more information about this report, or for any questions relating to your drinking water, please call Mitch Pinkerton, Water Production Manager, at (515) 222-3465.



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 typically meets at 4 p.m. on the 3rd Monday of each month. Check www.wdmww.com for the most up-to-date meeting schedule.

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 those with cancer undergoing chemotherapy, those 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 <http://water.epa.gov/drink/hotline>.



Source Water Assessment

West Des Moines Water Works obtains some of its water from the sand and gravel of the Raccoon River Alluvial aquifer. The Alluvial aquifer was determined to be highly susceptible to contamination because the characteristics of the aquifer and overlying materials provide little protection from contamination at the land surface. The Alluvial wells are highly susceptible to surface contaminants such as leaking underground storage tanks, contaminant spills, and excess fertilizer application.

West Des Moines Water Works also obtains its water from the sandstone and dolomite of the Cambrian-Ordovician Aquifer. The Cambrian-Ordovician aquifer was determined to have low susceptibility to contamination because the characteristics of the aquifer and overlying materials provide natural protection from contaminants at the land surface. The Cambrian-Ordovician wells have low susceptibility to surface contaminants such as leaking underground storage tanks, contaminant spills, and excess fertilizer application.

Des Moines Water Works obtains water from one or more surface waters. Surface water sources are susceptible to sources of contamination or pollution within the Raccoon and Des Moines River watersheds. The lab test results for both utilities are listed in this report.

A detailed evaluation of our source water was completed by the Iowa Department of Natural Resources and is available from the Water Operator at (515) 222-3465.

West Des Moines Water Works obtains some of its water from Des Moines Water Works. For additional Des Moines Water Works water quality information, please call 283-8700. It is a consecutive water supply, where an originating parent supply provides drinking water to one or more downstream supplies.

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 that 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;

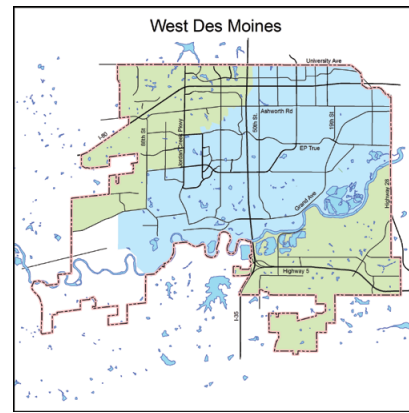
Inorganic Contaminants, such as salts and metals, which can be naturally occurring or may result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming;

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.



West Des Moines water customers in the NW and SE portion of the city, noted in green, receive purchased water from the Des Moines Water Works. Areas in blue receive water produced from West Des Moines Water Works A.C. Ward Water Treatment Plant

Where Does My Water Come From?

West Des Moines Water Works obtains a portion of its water from 17 shallow wells (all between 40 and 50 feet deep) that draw water from the Raccoon River Alluvial Aquifer. Water is also obtained from four 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 and in certain locations is blended with treated water from the West Des Moines Water Works. Approximately 4,500 West Des Moines Water Works customers (see map) receive their water solely from the Des Moines Water Works.

We remain vigilant in delivering the best-quality drinking water

About the Violations

In November 2018, Des Moines Water Works failed to monitor for turbidity. Adverse health effects, if any, are not known. Monitoring procedures have been corrected to avoid future violations.

In September 2018, Des Moines Water Works failed to monitor for inorganic chemicals (IOCs) at the LP Moon Well. Adverse health effects, if any, are not known. Monitoring procedures have been corrected to avoid future violations.

Lead in Home Plumbing

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 we 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 at (800) 426-4791 or at www.epa.gov/safewater/lead.



Arsenic Regulation

Arsenic contamination of drinking water sources may result from either natural or human activities. Volcanic activity, erosion of rocks and minerals, and forest fires are natural sources that can release arsenic into the environment. Although about 90 percent of the arsenic used by industry is for wood preservative purposes, it is also used in paints, drugs, dyes, soaps, metals, and semiconductors. Agricultural applications, mining, and smelting also contribute to arsenic releases. Arsenic is usually found in the environment combined with other elements such as oxygen, chlorine, and sulfur (inorganic arsenic), or combined with carbon and hydrogen (organic arsenic). Organic forms are usually less harmful than inorganic forms.



Low levels of arsenic are naturally present in water: about 2 parts arsenic per billion parts of water (ppb). Thus, you normally take in small amounts of arsenic in the water you drink. Some areas of the country have unusually high natural levels of arsenic in rock, which can lead to unusually high levels of arsenic in water.

In January 2001, the U.S. EPA lowered the arsenic Maximum Contaminant Level (MCL) from 50 to 10 ppb in response to new and compelling research linking high arsenic levels in drinking water with certain forms of cancer. All water utilities were required to implement this new MCL in January 2006.

Removing arsenic from drinking water is a costly procedure but well worth the expenditure considering the health benefits. For a more complete discussion, visit the U.S. EPA's arsenic Web site at <https://goo.gl/3etbFL>.

Test Results

Our water is monitored for many different kinds of substances on a very strict sampling schedule. And the water we deliver must meet specific health standards. Here, we show only those substances that were detected in our water. (A complete list of all our analytical results is available upon request.) Remember that detecting a substance does not mean the water is unsafe to drink; our goal is to keep all detects below their respective maximum allowed levels.

The state recommends monitoring for certain substances less often 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.

We participated in the 4th stage of the U.S. EPA's Unregulated Contaminant Monitoring Rule (UCMR4) program by performing additional tests on our drinking water. UCMR4 sampling benefits the environment and public health by providing the EPA with data on the occurrence of contaminants suspected to be in drinking water, in order to determine if the EPA needs to introduce new regulatory standards to improve drinking water quality. Unregulated contaminant monitoring data are available to the public, so please feel free to contact us if you are interested in obtaining that information. If you would like more information on the U.S. EPA's Unregulated Contaminant Monitoring Rule, please call the Safe Drinking Water Hotline at (800) 426-4791.

REGULATED SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	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		Des Moines Water Works LP Moon ASR Well		VIOLATION	TYPICAL SOURCE
				AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH		
Alpha Emitters (pCi/L)	2018	15	0	NA	NA	NA	NA	NA	NA	1.4	NA	No	Erosion of natural deposits
Antimony (ppb)	2018	6	6	NA	NA	NA	NA	NA	NA	NA	NA	No	Discharge from petroleum refineries; Fire retardants; Ceramics; Electronics; Solder
Arsenic (ppb)	2018	10	0	NA	NA	NA	NA	NA	NA	NA	NA	No	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes
Atrazine (ppb)	2018	3	3	NA	NA	NA	NA	NA	NA	0.10	NA	No	Runoff from herbicide used on row crops
Chlorine (ppm)	2018	[4]	[4]	0.9	0.14–2	NA	NA	NA	NA	NA	NA	No	Water additive used to control microbes
Combined Radium (pCi/L)	2017	5	0	2.7	NA	NA	NA	NA	NA	NA	NA	No	Erosion of natural deposits
Dichloromethane (ppb)	2018	5	0	NA	NA	NA	NA	NA	NA	NA	NA	No	Discharge from pharmaceutical and chemical factories
Fluoride (ppm)	2018	4	4	1.2	NA	NA	NA	NA	NA	0.79	NA	No	Erosion of natural deposits; Water additive that promotes strong teeth; Discharge from fertilizer and aluminum factories
Haloacetic Acids [HAAs] (ppb)	2018	60	NA	8	NA	NA	NA	NA	NA	NA	NA	No	By-product of drinking water disinfection
Nitrate (ppm)	2018	10	10	0.6	NA	8.11	1.78–8.11	8.5	2.96–8.5	4.99	2.32–4.99	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
TTHMs [Total Trihalomethanes] (ppb)	2018	80	NA	65	NA	NA	NA	NA	NA	NA	NA	No	By-product of drinking water disinfection
Uranium (ppb)	2018	30	0	NA	NA	NA	NA	NA	NA	NA	NA	No	Erosion of natural deposits

REGULATED SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	Des Moines Water Works McMullen Plant ASR Well		Des Moines Water Works		Des Moines Water Works Army Post ASR		VIOLATION	TYPICAL SOURCE
				AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH		
Alpha Emitters (pCi/L)	2018	15	0	NA	NA	NA	NA	11.1	NA	No	Erosion of natural deposits
Antimony (ppb)	2018	6	6	NA	NA	NA	NA	5	NA	No	Discharge from petroleum refineries; Fire retardants; Ceramics; Electronics; Solder
Arsenic (ppb)	2018	10	0	NA	NA	NA	NA	4	3–4	No	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes
Atrazine (ppb)	2018	3	3	NA	NA	NA	NA	NA	NA	No	Runoff from herbicide used on row crops
Chlorine (ppm)	2018	[4]	[4]	NA	NA	0.9	0.17–1.37	NA	NA	No	Water additive used to control microbes
Combined Radium (pCi/L)	2017	5	0	NA	NA	NA	NA	2.2 ¹	NA ¹	No	Erosion of natural deposits
Dichloromethane (ppb)	2018	5	0	NA	NA	NA	NA	1.9	NA	No	Discharge from pharmaceutical and chemical factories
Fluoride (ppm)	2018	4	4	0.86	NA	NA	NA	NA	NA	No	Erosion of natural deposits; Water additive that promotes strong teeth; Discharge from fertilizer and aluminum factories
Haloacetic Acids [HAAs] (ppb)	2018	60	NA	NA	NA	12	NA	NA	NA	No	By-product of drinking water disinfection
Nitrate (ppm)	2018	10	10	8.24	2.46–8.24	NA	NA	6.6	2.63–6.60	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
TTHMs [Total Trihalomethanes] (ppb)	2018	80	NA	NA	NA	47	NA	NA	NA	No	By-product of drinking water disinfection
Uranium (ppb)	2018	30	0	NA	NA	NA	NA	1.9	NA	No	Erosion of natural deposits

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 %ILE)	SITES ABOVE AL/TOTAL SITES	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2018	1.3	1.3	0.01	0/60	No	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives
Lead (ppb)	2018	15	0	0.00	0/60	No	Corrosion of household plumbing systems; Erosion of natural deposits

UNREGULATED SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	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		Des Moines Water Works LP Moon ASR Well		Des Moines Water Works McMullen Plant ASR Well		Des Moines Water Works Army Post ASR		TYPICAL SOURCE
		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	AMOUNT DETECTED	RANGE LOW-HIGH	
Sodium (ppm)	2018	200	NA	13.2	NA	18.2	NA	32.62	NA	21.43	NA	28.93	NA	Erosion of natural deposits; Added to water during treatment process

UNREGULATED CONTAMINANT MONITORING RULE - PART 4 (UCMR4)

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	West Des Moines Water Works A.C. Ward Municipal Water Treatment Plant		Des Moines Water Works	
		AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH
Bromoacetic Acid (ppb)	2018	0.61	NA	NA	NA
Bromochloroacetic Acid (ppb)	2018	1.4	NA	4.4	NA
Bromodichloroacetic Acid (ppb)	2018	0.54	NA	0.89	NA
Chlorodibromoacetic Acid (ppb)	2018	0.92	NA	0.64	NA
Dibromoacetic Acid (ppb)	2018	4.9	NA	2.1	NA
Dichloroacetic Acid (ppb)	2018	0.65	NA	8.4	NA
Manganese (ppb)	2018	1	NA	1	NA
Tribromoacetic Acid (ppb)	2018	16	NA	NA	NA
Trichloroacetic Acid (ppb)	2018	NA	NA	1.1	NA

Definitions

90th %ile: The levels reported for lead and copper represent the 90th percentile of the total number of sites tested. The 90th percentile is equal to or greater than 90% of our lead and copper detections.

AL (Action Level):

The concentration of a contaminant that, if exceeded, triggers treatment or other requirements that 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

pCi/L (picocuries per liter): A measure of radioactivity.

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).