2015 WATER QUALITY REPORT FOR CRESCENT WATER SUPPLY

This report contains important information regarding the water quality in our water system. The source of our water is surface water. All of the water is purchased. Purchased water comes from Council Bluffs Water Works. Our water quality testing shows the following results:

CONTAMINANT	MCL - (MCLG)	Compliance		Date	Violation	Source
		Type	Value & (Range)		Yes/No	
Lead (ppb)	AL=15 (0)	90th	1.10 (ND - 1)	2015	No	Corrosion of household plumbing systems; erosion of natural deposits
Copper (ppm)	AL=1.3 (1.3)	90th	0.0483 (0.0086 - 0.133)	2015	No	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives
950 - DISTRIBUTION SYSTEM						
Chlorine (ppm)	MRDL=4.0 (MRDLG=4.0)	RAA	1.7 (1.41 - 2.01)	09/30/2015	No	Water additive used to control microbes
Total Coliform Bacteria	Presence of coliform bacteria in >5% of monthly samples (0)	TCR	2 sample(s) positive	08/31/2015	Yes	Naturally present in the environment
Total Trihalomethanes (ppb) [TTHM]	80 (N/A)	SGL	32.10	10/21/2015	No	By-products of drinking water chlorination
Total Haloacetic Acids (ppb) [HAA5]	60 (N/A)	SGL	27.90	10/21/2015	No	By-products of drinking water disinfection

Note: Contaminants with dates indicate results from the most recent testing done in accordance with regulations.

DEFINITIONS

- Maximum Contaminant Level (MCL) – 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.
- 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.
- ppb -- parts per billion.
- ppm -- parts per million.
- pCi/L – picocuries per liter
- N/A – Not applicable
- ND -- Not detected
- RAA – Running Annual Average
- LRAA – Locational Running Annual Average
- Treatment Technique (TT) – A required process intended to reduce the level of a contaminant in drinking water.
- Action Level (AL) – The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
- Maximum Residual Disinfectant Level Goal (MRDLG) - 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.
- Maximum Residual Disinfectant 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.
- SGL – Single Sample Result
- TCR – Total Coliform Rule

- NTU – Nephelometric Turbidity Units

GENERAL INFORMATION

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water posed a health risk. More information about contaminants or potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline (800-426-4791).

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised 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 can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

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. CRESCENT WATER SUPPLY 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 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 http://www.epa.gov/safewater/lead.

CONTAMINANT VIOLATIONS

Violation Type	Contaminant	Begin date	End Date
Our water system violated a drinking water standard for Coliform (TCR). Coliforms are bacteria which are naturally present in the environment and are used as an indicator that other, potentially-harmful bacteria may be present. Coliforms were found in more samples than allowed and this was a warning of potential problems.			
MCL (TCR), Monthly	Coliform (TCR)	08/01/2015	08/31/2015

OTHER VIOLATIONS

In January 2015 we failed to monitor for Haloacetic Acids (HAA5). Adverse health effects, if any, are not known. Monitoring procedures have been corrected to avoid future violations.

In January 2015 we failed to monitor for Total THM. Adverse health effects, if any, are not known. Monitoring procedures have been corrected to avoid future violations.

SOURCE WATER ASSESSMENT INFORMATION

This water supply obtains some or all of its water from another public water supply. It is a consecutive water supply, where an originating parent supply provides drinking water to one or more downstream supplies.

Original Supply ID	Original Supply Name
IA7820080	Council Bluffs Water Works

OTHER INFORMATION

Turbidity is an indicator of treatment filter performance and is regulated as a treatment technique.

CONTACT INFORMATION

For questions regarding this information or how you can get involved in decisions regarding the water system, please contact CRESCENT WATER SUPPLY at 402-344-4800.

PURCHASED WATER INFORMATION

Our water system purchases water from the system(s) shown below. Their water quality is as follows:

CONTAMINANT	MCL - (MCLG)	Compliance		Date	Violation	Source
		Type	Value & (Range)		Yes/No	
7820080 - COUNCIL BLUFFS WATER WORKS						
01 - MO. R., WELLS #1 & 2 @ NARROWS PLNT						
Fluoride (ppm)	4 (4)	SGL	0.66	04/07/2014	No	Water additive which promotes strong teeth; Erosion of natural deposits; Discharge from fertilizer and aluminum factories
Sodium (ppm)	N/A (N/A)	SGL	76	04/13/2015	No	Erosion of natural deposits; Added to water during treatment process
Nitrate [as N] (ppm)	10 (10)	SGL	5.7 (1.1 - 5.7)	2015	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
02 - WELLS 3-7 @ COUNCIL PT PLNT						
Fluoride (ppm)	4 (4)	SGL	0.65	08/25/2015	No	Water additive which promotes strong teeth; Erosion of natural deposits; Discharge from fertilizer and aluminum factories
Barium (ppm)	2 (2)	SGL	0.06	08/25/2015	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Sodium (ppm)	N/A (N/A)	SGL	41	08/25/2015	No	Erosion of natural deposits; Added to water during treatment process
Turbidity (NTU)	N/A (N/A)	TT	Enter highest single measurement and the lowest monthly percentage of samples meeting turbidity limits here.			Soil runoff

Annual Water Quality Report - Reporting Year 2015

Council Bluffs Water Works
2000 N. 25th Street
Council Bluffs, IA 51501

PWSID#: 7820080

Meeting the Challenge

Once again we are proud to present our annual drinking water report, covering all drinking water testing performed between January 1 and December 31, 2015. 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 your homes and businesses. 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 of our water users.

Please remember that we are always available to assist you, 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 John Meads, Purification Department Manager, at (712) 328-1006 ext. 1020.

Community Participation

We want our valued customers to be informed about their water utility. The Board of Water Works Trustees conduct the business of the Water Works during their regularly scheduled meetings. The meetings are normally held on the third Tuesday of the month at 4:30 p.m. at the Water Works office, 2000 N. 25th Street.

Important Health Information

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 http://water.epa.gov/drink/hotline.

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.

Where Does My Water Come From?

The Council Bluffs Water Works primary water source is the Missouri River and the Missouri River Alluvium.

Source Water Assessment

The City of Council Bluffs obtains its water from the Missouri River and the Missouri River Alluvium. Reservoirs and streams are highly susceptible to contamination because contaminants can move through them quickly. Council Bluffs' water supply will be susceptible to contaminant releases from landfills and livestock confinements. A portion of the Council Bluffs' water supply is obtained from an alluvial aquifer. The alluvial aquifer was determined to be highly susceptible to contamination because the characteristics of the aquifer and overlying materials allow contaminants to move through the aquifer quickly. The City of Council Bluffs' wells will be most susceptible to activities such as dry cleaners, gas stations, industrial sites, and municipal wastewater discharges. A detailed evaluation of

your source water was completed by the Iowa Department of Natural Resources, and is available from John Meads, Purification Manager at (712) 328-1006 ext. 1020.

Testing for Cryptosporidium

Cryptosporidium is a microbial parasite found in surface water throughout the U.S. While monitoring of source water indicates the presence of these organisms, analysis of the treated or finished water have shown none. The Council Bluffs Water Works utilizes a multiple-barrier treatment process that effectively removes and inactivates Cryptosporidium. Symptoms of infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals can overcome the disease within a few weeks. However, immuno-compromised people are at greater risk of developing life-threatening illness. We encourage immuno-compromised individuals to consult their doctor regarding appropriate precautions to take to avoid infection. Cryptosporidium must be ingested to cause disease, and it may be spread through means other than drinking water.

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 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/lead.

UCMR3 Sampling

We participated in the 3rd stage of the EPA's Unregulated Contaminant Monitoring Rule (UCMR3) program by performing additional tests on our drinking water. UCMR3 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 EPA needs to introduce new regulatory standards to improve drinking water quality. Any UCMR3 detections are shown in the data tables in this report. Contact us for more information on this program.

Tip Top Tap
The most common signs that your faucet or sink is affecting the quality of your drinking water are discolored water, sink or faucet stains, a buildup of particles, unusual odors or tastes, and a reduced flow of water. The solutions to these problems may be in your hands.

Kitchen Sink and Drain
Hand washing, soap scum buildup, and the handling of raw meats and vegetables can contaminate your sink. Clogged drains can lead to unclean sinks and backed up water in which bacteria (i.e., pink and black colored slime growth) can grow and contaminate the sink area and faucet, causing a rotten egg odor. Disinfect and clean the sink and drain area regularly. Also, flush regularly with hot water.

Faucets, Screens, and Aerators
Chemicals and bacteria can splash and accumulate on the faucet screen and aerator, which are

located on the tip of faucets, and can collect particles like sediment and minerals resulting in a decreased flow from the faucet. Clean and disinfect the aerators or screens on a regular basis.

Check with your plumber if you find particles in the faucet screen as they could be pieces of plastic from the hot water heater dip tube. Faucet gaskets can break down and cause black, oily slime. If you find this slime, replace the faucet gasket with a higher-quality product. White scaling or hard deposits on faucets and shower heads may be caused by hard water or water with high levels of calcium carbonate. Clean these fixtures with vinegar or use water softening to reduce the calcium carbonate levels for the hot water system.

Water Filtration/Treatment Devices
A smell of rotten eggs can be a sign of bacteria on the filters or in the treatment system. The system can also become clogged over time so regular filter replacement is important. (Remember to replace your refrigerator filter!)

Water Main Flushing

Distribution mains (pipes) convey water to homes, businesses, and hydrants in your neighborhood. The water entering distribution mains is of very high quality; however, water quality can deteriorate in areas of the distribution mains over time. Water main flushing is the process of cleaning the interior of water distribution mains by sending a rapid flow of water through the mains.

Flushing maintains water quality in several ways. For example, flushing removes sediments like iron and manganese. Although iron and manganese do not pose health concerns, they can affect the taste, clarity, and color of the water. Additionally, sediments can shield microorganisms from the disinfecting power of chlorine, contributing to the growth of microorganisms within distribution mains. Flushing helps remove stale water and ensures the presence of fresh water with sufficient dissolved oxygen, disinfectant levels, and an acceptable taste and smell.

During flushing operations in your neighborhood, some short-term deterioration of water quality, though uncommon, is possible. You should avoid tap water for household uses at that time. If you do use the tap, allow your cold water to run for a few minutes at full velocity before use and avoid using hot water, to prevent sediment accumulation in your hot water tank.

Please contact us if you have any questions or if you would like more information on our water main flushing schedule.

Tap vs. Bottled
Thanks in part to aggressive marketing, the bottled water industry has successfully convinced us all that water purchased in bottles is a healthier alternative to tap water. However, according to a four-year study conducted by the Natural Resources Defense Council, bottled water is not necessarily cleaner or safer than most tap water. In fact, about 25 percent of bottled water is actually just bottled tap water (40 percent according to government estimates).

The Food and Drug Administration is responsible for regulating bottled water, but these rules allow for less rigorous testing and purity standards than those required by the U.S. EPA for community tap water. For instance, the high mineral content of some bottled waters makes them unsuitable for babies and young children. Further, the FDA completely exempts bottled water that's packaged and sold within the same state, which accounts for about 70 percent of all bottled water sold in the United States.

People spend 10,000 times more per gallon for bottled water than they typically do for tap water. If you get your recommended eight glasses a day from bottled water, you could spend up to $1,400 annually. The same amount of tap water would cost about 49 cents. Even if you installed a filter device on your tap, your annual expenditure would be far less than what you'd pay for bottled water.

For a detailed discussion on the NRDC study results, check out their Web site at www.nrdc.org/water/drinking/bw/exesum.asp.

Naturally Occurring Bacteria

The simple fact is, bacteria and other microorganisms inhabit our world. They can be found all around us: in our food; on our skin; in our bodies; and, in the air, soil, and water. Some are harmful to us and some are not. Coliform bacteria are common in the environment and are generally not harmful themselves. The presence of this bacterial form in drinking water is a concern because it indicates that the water may be contaminated with other organisms that can cause disease. Throughout the year, we tested many water samples for coliform bacteria. In that time, none of the samples came back positive for the bacteria.

Federal regulations require that public water that tests positive for coliform bacteria must be further analyzed for fecal coliform bacteria. Fecal coliform are present only in human and animal waste. Because these bacteria can cause illness, it is unacceptable for fecal coliform to be present in water at any concentration. Our tests indicate no fecal coliform is present in our water.

Nitrate in Drinking Water

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.

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 requires 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.

Regulated Substances
Council Bluffs Water Works TP01

Substance (Unit of Measure)	Year Sampled	MCL [MRDL]	MCLG [MRDLG]	Amount Detected	Range Low-High	Violation	Typical Source
Chlorine (ppm)	2015	[4]	[4]	2.0	.08 - 2.93	No	Water additive used to control microbes
Chlorite (ppm)	2015	1	0.8	.19	0.00 - 0.19	No	By-product of drinking water disinfection
Chromium (ppb)	2013	100	100	1.1	0.5 - 2.7	No	Discharge from steel and pulp mills; Erosion of natural deposits
Fluoride (ppm)	2015	4	4	.67	.57 - .79	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories

Haloacetic Acids [HAA] - Stage 2 (ppb)	2015	60	NA	17.00	13.00 - 22.00	No	By-product of drinking water disinfection
Nitrate (ppm)	2015	10	10	5.7	1.1 - 5.7	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
TTHMs [Total Trihalomethanes] - Stage 2 (ppb)	2015	80	NA	43.00	34.00 - 61.00	No	By-product of drinking water disinfection
Total Organic Carbon (removal ratio)	2015	TT	NA	1.5	1.0 - 2.4	No	Naturally present in the environment
Turbidity (NTU)	2015	TT	NA	.18	.03 - .18	No	Soil runoff
Turbidity (Lowest monthly percent of samples meeting limit)	2015	TT	NA	100	NA	No	Soil runoff

Council Bluffs Water Works TP02

Substance (Unit of Measure)	Year Sampled	MCL [MRDL]	MCLG [MRDLG]	Amount Detected	Range Low-High	Violation	Typical Source
Barium (ppm)	2015	2	2	.06	.06 - .06	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Fluoride (ppm)	2015	4	4	.65	.25 - .77	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories

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

Council Bluffs Water Works TP01

Substance (Unit of Measure)	Year Sampled	AL	MCLG	Amount Detected (90th% tile)	Sites Above AL/Total Sites	Violation	Typical Source
Copper (ppm)	2013	1.2999999523162842	1.3	.06	0/40	No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead (ppb)	2013	15	0	2.0	0/40	No	Corrosion of household plumbing systems; Erosion of natural deposits

Other Regulated Substances

Council Bluffs Water Works TP01

Substance (Unit of	Year	MCL	MCLG	Amount	Range Low-	Violation	Typical Source

Measure)	Sampled	[MRDL]	[MRDLG]	Detected	High		
Sodium (ppm)	2015	N/A	N/A	76	76 - 76	No	Erosion of natural deposits; Added to water during treatment process

Council Bluffs Water Works TP02

Substance (Unit of Measure)	Year Sampled	MCL [MRDL]	MCLG [MRDLG]	Amount Detected	Range Low-High	Violation	Typical Source
Sodium (ppm)	2015	N/A	N/A	41	41 - 41	No	Erosion of natural deposits; Added to water during treatment process

Other Unregulated Substances

Council Bluffs Water Works TP01

Substance (Unit of Measure)	Year Sampled	Amount Detected	Range Low-High	Typical Source
Chlorate (ppm)	2013	.0438	0 - .142	The most direct source of exposure to chlorate is through drinking water that has been disinfected with sodium hypochlorite or chlorine dioxide.
Hexavalent Chromium (ppm)	2013	.0011	.0005 - .0019	A group of man-made compounds used in the production of stainless steel, chromate chemicals, and pigments.
Molybdenum (ppm)	2013	.0002	.0000 - .0004	Natural sources of molybdenum release to water include wet and dry deposition, soil erosion, and leaching from rocks and soil.
Strontium (ppm)	2013	.2560	.2950 - .3950	Strontium is a natural and commonly occuring element found in the form of minerals.
Vanadium (ppm)	2013	.0002	.0000 - .0004	Natural sources of vanadium release to water include wet and dry deposition, soil erosion, and leaching from rocks and soil.

Turbidity Footnote for Council Bluffs Water Works TP01
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.

Table Definitions

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

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

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

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.

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.

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

LRAA (Locational Running Annual Average): The average of sample analytical results for samples taken at a particular monitoring location during the previous four calendar quarters. Amount Detected values for TTHMs and HAAs are reported as LRAAs.