West Central Iowa Rural Water Association
2017 WATER QUALITY REPORT
2017 Report for 2016 Testing Results

This report contains important information regarding the water quality in our water system. The West Central Iowa Rural Water Association (WCIRWA) routinely monitors for constituents in your drinking water according to Federal and State laws. The source of our water is groundwater. Some of the water is purchased. Purchased water comes from the Denison Municipal Utility's water supply. All of the water for the Denison Subsystem is purchased and some of the water for the Nishnabotna Subsystem is purchased from the Denison Municipal Utility.

Our water quality testing shows the following results:

BOYER SUBSYSTEM TEST RESULTS

CONTAMINANT	MCL - (MCLG)	Compliance		Date	Violation	Source
		Type	Value & (Range)		Yes/No	
Total Trihalomethanes (ppb) [TTHM]	80 (N/A)	LRAA	56.00 (56 - 56)	09/30/2016	No	By-products of drinking water chlorination
Total Haloacetic Acids (ppb) [HAA5]	60 (N/A)	LRAA	29.00 (29 - 29)	09/30/2016	No	By-products of drinking water disinfection
Lead (ppb)	AL=15 (0)	90th	2.00 (ND - 3)	2014	No	Corrosion of household plumbing systems; erosion of natural deposits
Copper (ppm)	AL=1.3 (1.3)	90th	1.2 (ND - 1.8) 1 sample(s) exceeded AL	2014	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	1.2 (1.2 - 1.2)	4th qtr 2016	No	Water additive used to control microbes
01 - WELLS 2 & 3 @ TREATMENT PLANT LAB TAP						
Fluoride (ppm)	4 (4)	SGL	1.20 (0.55 - 1.20)	Dec 2016	No	Water additive which promotes strong teeth; Erosion of natural deposits; Discharge from fertilizer and aluminum factories
Barium (ppm)	2 (2)	SGL	0.15	08/08/2012	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Cadmium (ppb)	5 (5)	SGL	2	08/08/2012	No	Water additive used to control microbes
Chromium (ppb)	100 (100)	SGL	10	08/08/2012	No	Discharge from steel and pulp mills; Erosion of natural deposits
Arsenic (ppb)	10 (N/A)	SGL	1	08/08/2012	No	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronic production wastes
Sodium (ppm)	N/A (N/A)	SGL	9.2	11/25/2015	No	Erosion of natural deposits; Added to water during treatment process

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

DENISON SUBSYSTEM TEST RESULTS

CONTAMINANT	MCL - (MCLG)	Compliance		Date	Violation	Source
		Type	Value & (Range)		Yes/No	
Total Trihalomethanes (ppb) [TTHM]	80 (N/A)	LRAA	38.00 (35 - 41)	09/30/2016	No	By-products of drinking water chlorination
Total Haloacetic Acids (ppb) [HAA5]	60 (N/A)	LRAA	4.00 (ND - 8)	09/30/2016	No	By-products of drinking water disinfection
Copper (ppm)	AL=1.3 (1.3)	90th	ND	2016	No	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives
Lead (ppb)	AL=15 (0)	90th	ND	2016	No	Corrosion of household plumbing systems; erosion of natural deposits
950 - NORTH DISTRIBUTION SYSTEM						
Chlorine (ppm)	MRDL=4.0 (MRDLG=4.0)	RAA	1.27 (1.2 - 1.3)	2nd Qtr 2016	No	Water additive used to control microbes
951 - SOUTH DISTRIBUTION SYSTEM						

Chlorine (ppm)	MRDL=4.0 (MRDLG=4.0)	RAA	0.8 (0.7 - 0.8)	1st Qtr 2016	No	Water additive used to control microbes

PURCHASED WATER - 2424027 - **DENISON WATER SUPPLY**						
02 - WELLS 1-3, 5, 7, 9-13 & 2A @ WATER PLANT						
Barium (ppm)	2 (2)	SGL	0.0272	May 2013	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Fluoride (ppm)	4 (4)	SGL	1.01 (0.60 - 1.01)	Mar 2016	No	Water additive which promotes strong teeth; Erosion of natural deposits; Discharge from fertilizer and aluminum factories
Sodium (ppm)	N/A (N/A)	SGL	23.6	Mar 2014	No	Erosion of natural deposits; Added to water during treatment process
Nitrate (as N) (ppm)	10 (10)	SGL	0.5	2016	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits

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

NISHNABOTNA SUBSYSTEM TEST RESULTS

CONTAMINANT	MCL - (MCLG)	Compliance		Date	Violation	Source
		Type	Value & (Range)		Yes/No	
Total Trihalomethanes (ppb) [TTHM]	80 (N/A)	LRAA	27.00 (18 - 36)	09/30/2016	No	By-products of drinking water chlorination
Total Haloacetic Acids (ppb) [HAA5]	60 (N/A)	LRAA	7.00 (7 - 7)	09/30/2016	No	By-products of drinking water disinfection
Lead (ppb)	AL=15 (0)	90th	2.00 (ND - 7)	2014	No	Corrosion of household plumbing systems; erosion of natural deposits
Copper (ppm)	AL=1.3 (1.3)	90th	0.82 (ND - 0.93)	2014	No	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives
950 - DISTRIBUTION SYSTEM-WCIRW						
Chlorine (ppm)	MRDL=4.0 (MRDLG=4.0)	RAA	0.9 (0.8 - 0.9)	1st Qtr 2016	No	Water additive used to control microbes
951 - DISTRIBUTION SYSTEM-DENISON						
Chlorine (ppm)	MRDL=4.0 (MRDLG=4.0)	RAA	0.9 (0.8 - 0.9)	1st Qtr 2016	No	Water additive used to control microbes
01 - WELLS 1, 3, 5-9 @ WATER PLANT						
Alpha Emitters (pCi/L)	15 (0)	SGL	5.4	06/01/2016	No	Erosion of natural deposits
Barium (ppm)	2 (2)	SGL	0.12	11/21/2012	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Fluoride (ppm)	4 (4)	SGL	0.83 (0.66 - 0.83)	July 2016	No	Water additive which promotes strong teeth; Erosion of natural deposits; Discharge from fertilizer and aluminum factories
Sodium (ppm)	N/A (N/A)	SGL	15.2	11/25/2015	No	Erosion of natural deposits; Added to water during treatment process
Nitrate [as N] (ppm)	10 (10)	SGL	6.1 (4.4 - 6.1)	2016	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Chromium (ppb)	100 (100)	SGL	10	11/21/2012	No	Discharge from steel and pulp mills; Erosion of natural deposits
Cadmium (ppb)	5 (5)	SGL	2	11/21/2012	No	Water additive used to control microbes
Arsenic (ppb)	10 (N/A)	SGL	1	11/21/2012	No	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronic production wastes
PURCHASED WATER - 2424027 - DENISON WATER SUPPLY 02 - WELLS 1-3, 5,7, 9-13 & 2A @ WATER PLANT						
Barium (ppm)	2 (2)	SGL	0.0272	05/15/2013	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Fluoride (ppm)	4 (4)	SGL	1.01 (0.60 - 1.01)	Mar 2016	No	Water additive which promotes strong teeth; Erosion of natural deposits; Discharge from fertilizer and aluminum factories

Sodium (ppm)	N/A (N/A)	SGL	23.6	03/12/2014	No	Erosion of natural deposits; Added to water during treatment process
Nitrate [as N] (ppm)	10 (10)	SGL	0.50	2016	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits

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

UNREGULATED CONTAMINANTS

The U.S. Environmental Protection Agency developed an Unregulated Contaminant Monitoring program to better understand the existence of contaminants in the environment that are not regulated by the national Primary Drinking Water regulations, which are known or anticipated to occur at public water systems and may warrant regulation under the safe Drinking Water act. Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted. Denison Municipal Utilities was selected to test for numerous contaminants at two different sites in 2013. Those results indicate the following:

UNREGULATED CONTAMINANTS RESULTS: DENISON MUNICIPAL UTILITIES

DMU Distribution Point MR Location: 2241 Hwy 39

Analyte	Unit	Average Value	Date
Chromium	µg/L (ppb)	2.034	10/01/2013
Molybdenum	µg/L (ppb)	2.639	10/01/2013
Strontium	µg/L (ppb)	92.587	10/01/2013
Vanadium	µg/L (ppb)	1.694	10/01/2013
Chromium-6	µg/L (ppb)	1.889	12/03/2013
Chlorate	µg/L (ppb)	95.079	10/01/2013

DMU TP Entry Point #1

Analyte	Unit	Average Value	Date
Chromium	µg/L (ppb)	2.1	10/01/2013
Molybdenum	µg/L (ppb)	2.7	10/01/2013
Strontium	µg/L (ppb)	82.15	10/01/2013
Vanadium	µg/L (ppb)	2	10/01/2013
Chromium-6	µg/L (ppb)	1.895	12/03/2013
Chlorate	µg/L (ppb)	90.247	10/01/2013

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
- IDSE – Initial Distribution System Evaluation
- 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

- µg/L - Micrograms per liter or parts per billion (ppb). Parts of contaminant per billion parts of water. One part per billion is equivalent to a single penny in ten million dollars.

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. West Central Iowa Rural Water Association 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 – none

OTHER VIOLATIONS – none

SOURCE WATER ASSESSMENT INFORMATION

The WCIRWA's Boyer System obtains its water from the North Raccoon River sand and gravel of the 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. WCIRWA's Boyer System Alluvial wells will be highly susceptible to surface contaminants such as leaking underground storage tanks, contaminant spills, and excess fertilizer application. A detailed evaluation of your source water was completed by the Iowa Department of Natural Resources, and is available from West Central Iowa Rural Water Assn. at 712-655-2534. The water supply is filtered, disinfected and fluoridated. Incorporated towns that can be served from the Boyer Subsystem include Lidderdale, Westside, and Vail. Also, the Town of Arcadia can be served either from the Boyer Subsystem or the Denison Subsystem.

The WCIRWA's Denison System is served water from the Denison Municipal Utilities (DMU), Supply ID IA2424027 in Denison as a consecutive water supply. This water supply obtains water from an alluvial formation along the Boyer River bottom. The 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 will be highly susceptible to surface contaminants such as leaking underground storage tanks, contaminant spills, and excess fertilizer application. A detailed evaluation of the source water was completed by the Iowa Department of Natural Resources, and is available from DMU at 1-712-263-4458. The water supply is filtered, disinfected and fluoridated and softened through a cold lime softening process. Incorporated towns that can be served from the Denison Subsystem include Aspinwall, Arthur, Charter Oak, Dow City, Kiron and Schleswig. The incorporated towns of Arion, Buck Grove and Ricketts are franchised by WCIRWA and are served with DMU water. Also, the Town of Arcadia can be served either from the Boyer Subsystem or the Denison Subsystem.

The WCIRWA's Nishnabotna System obtains its water from the West Nishnabotna sand and gravel of the 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 will be highly susceptible to surface contaminants such as leaking underground storage tanks, contaminant spills, and excess fertilizer application. A detailed evaluation of the source water was completed by the Iowa Department of Natural Resources, and is available from the Manager at 712-655-2534 or 888-844-2614. The water supply from the Nishnabotna System is filtered, disinfected and fluoridated. This System also obtains some or of its water from Denison Municipal Utilities, Supply ID IA2424027. It is a consecutive water supply, where an originating parent supply

provides drinking water to one or more downstream supplies. Incorporated towns that can be served from the Nishnabotna Subsystem include Halbur, Irwin and Templeton. The incorporated town of Gray is also served through a franchise agreement with WCIRWA.

OTHER INFORMATION

Implementation of a well head protection program is being done for the Nishnabotna Subsystem with the assistance of the Iowa Rural Water Association and the Natural Resource Conservation Service. A well head protection program allows for an area of up to 2,000 feet around a public well to be put into set-aside areas. It is a known fact that native grasses will filter surface runoff and contaminants. Currently, WCIRWA is working with several landowners to achieve this type of protection around our wells. The program is administered through the county NRCS in a similar fashion to the filter strip program along streams and creeks.

CONTACT INFORMATION

For questions regarding this information, please contact Dean Lorenzen at 1-888-844-2614 during the following hours 7:30 a.m. to 4:30 p.m., closed over the lunch hour, Monday through Friday.

Decisions regarding the water system are made at the board meetings held on second Thursday at 1607 Enterprise Street in Manning, Iowa. Please call 1-888-844-2614 to be placed on the agenda.
