



## City Of South Sioux City

### Annual Water Quality Report For January 1 to December 31, 2017

This report is intended to provide you with important information about your drinking water and the efforts made by the City Of South Sioux City water system to provide safe drinking water.

**Para Clientes Que Hablan Español:** Este informe contiene información muy importante sobre el agua que usted bebe. Tradúzcalo ó hable con alguien que lo entienda bien.

For more information regarding this report, or to request a hard copy, contact:

**DAVID L OLSEN**  
402-404-1067

If you would like to observe the decision-making processes that affect drinking water quality, please attend the regularly scheduled meeting of the Village Board/City Council. If you would like to participate in the process, please contact the Village/City Clerk to arrange to be placed on the agenda of the meeting of the Village Board/City Council.

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 poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline (800-426-4791).

#### **Source Water Assessment Availability:**

The Nebraska Department of Environmental Quality (NDEQ) has completed the Source Water Assessment. Included in the assessment are a Wellhead Protection Area map, potential contaminant source inventory, vulnerability rating, and source water protection information. To view the Source Water Assessment or for more information please contact the person named above on this report or the NDEQ at (402) 471-6988 or go to [www.deq.state.ne.us](http://www.deq.state.ne.us).

In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

#### **Sources of Drinking Water:**

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and groundwater wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals

and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

The source of water used by City Of South Sioux City is purchased ground water under the direct influence of surface water. Our drinking water is supplied from another water system through a Consecutive Connection (CC). To find out more about our drinking water sources and additional chemical sampling results, please contact our office at the number provided above.

#### **Contaminants 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 and wildlife.
- \* Inorganic contaminants, such as salts and metals, which can be naturally occurring or result from urban storm water 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 storm water runoff, and residential uses.
- \* Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems.
- \* Radioactive contaminants, which can be naturally-occurring or be the result of oil and gas production and mining activities.

#### **Drinking Water Health Notes:**

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) or the Department of Health and Human Services, Division of Public Health, Office of Drinking Water at 402-471-2541.

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. All Community water systems 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 (800-426-4791), at <http://www.epa.gov/safewater/lead> or at the DHHS/DPH/Office of Drinking Water (402-471-2541).

The City Of South Sioux City is required to test for the following contaminants: Coliform Bacteria, Antimony, Arsenic, Asbestos, Barium,

Beryllium, Cadmium, Chromium, Copper, Cyanide, Fluoride, Lead, Mercury, Nickel, Nitrate, Nitrite, Selenium, Sodium, Thallium, Alachlor, Atrazine, Benzo(a)pyrene, Carbofuran, Chlordane, Dalapon, Di(2-ethylhexyl)adipate, Dibromochloropropane, Dinoseb, Di(2-ethylhexyl)-phthalate, Diquat, 2,4-D, Endothall, Endrin, Ethylene dibromide, Glyphosate, Heptachlor, Heptachlor epoxide, Hexachlorobenzene, Hexachlorocyclopentadiene, Lindane, Methoxychlor, Oxamyl (Vydate), Pentachlorophenol, Picloram, Polychlorinated biphenyls, Simazine, Toxaphene, Dioxin, Silvex, Benzene, Carbon Tetrachloride, o-Dichlorobenzene, Para-Dichlorobenzene, 1,2-Dichloroethane, 1,1-Dichloroethylene, Cis-1,2-Dichloroethylene, Trans-1,2-Dichloroethylene, Dichloromethane, 1,2-Dichloropropane, Ethylbenzene, Monochlorobenzene, 1,2,4-Trichlorobenzene, 1,1,1-Trichloroethane, 1,1,2-Trichloroethane, Trichloroethylene, Vinyl Chloride, Styrene, Tetrachloroethylene, Toluene, Xylenes (total), Gross Alpha (minus Uranium & Radium 226), Radium 226 plus Radium 228, Sulfate, Chloroform, Bromodichloromethane, Chlorodibromomethane, Bromoform, Chlorobenzene, m-Dichlorobenzene, 1,1-Dichloropropene, 1,1-Dichloroethane, 1,1,2,2-Tetrachloroethane, 1,2-Dichloropropane, Chloromethane, Bromomethane, 1,2,3-Trichloropropane, 1,1,1,2-Tetrachloroethane, Chloroethane, 2,2-Dichloropropane, o-Chlorotoluene, p-Chlorotoluene, Bromobenzene, 1,3-Dichloropropene, Aldrin, Butachlor, Carbaryl, Dicamba, Dieldrin, 3-Hydroxycarbofuran, Methomyl, Metolachlor, Metribuzin, Propachlor.

#### **How to Read the Water Quality Data Table:**

The EPA and State Drinking Water Program establish the safe drinking water regulations that limit the amount of contaminants allowed in drinking water. The table shows the concentrations of detected substances in comparison to the regulatory limits. Substances not detected are not included in the table. The state requires monitoring of certain contaminants less than once per year because the concentrations of these contaminants do not change frequently. Therefore, some of this data may be older than one year.

**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.

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

**MRDL (Maximum Residual Disinfectant Level)** – The highest level of a disinfectant allowed in drinking water.

**N/A** – Not applicable.

#### **Units in the Table:**

**ND** – Not detectable.

**ppm (parts per million) = mg/L (milligrams per liter)** – One ppm or one mg/L corresponds to 1 gallon of water in 1,000,000 gallons of water.

**ppb (parts per billion) = ug/L (micrograms per liter)** – One ppb corresponds to 1 gallon of water in 1,000,000,000 gallons of water.

**pCi/L (Picocuries per liter)** – Radioactivity concentration unit.

**ug/L (micrograms per liter)** – Measurement of radioactivity.

**RAA (Running Annual Average)** – An ongoing annual average calculation of data from the most recent four quarters.

**LRAA (Locational Running Annual Average)** – An ongoing annual average calculation of data from the most recent four quarters at each sampling location.

**90<sup>th</sup> Percentile** – Represents the highest value found out of 90% of the samples taken in a representative group. If the 90<sup>th</sup> percentile is greater than the action level, it will trigger a treatment or other requirements that a water system must follow.

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

Microbiological	Highest No. of Positive Samples	MCL	MCLG	Likely Source Of Contamination	Violations Present
COLIFORM (TCR)	In the month of September, 1 sample(s) were positive	MCL: Systems that Collect Less Than 40 Samples per Month - No more than 1 positive monthly sample	0	Naturally present in the environment	No

Lead and Copper	Monitoring Period	90 <sup>th</sup> Percentile	Range	Unit	AL	Sites Over AL	Likely Source Of Contamination
COPPER, FREE	2014 - 2016	0.2737	0.0121 - 0.634	ppm	1.3	0	Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing.
LEAD	2014 - 2016	5.5	0.551 - 536	ppb	15	1	Erosion of natural deposits; Leaching from wood preservatives; Corrosion of household plumbing.

Regulated Contaminants	Collection Date	Highest Value	Range	Unit	MCL	MCLG	Likely Source Of Contamination
BARIIUM	7/26/2016	0.0768	0.0505 - 0.0768	ppm	2	2	Discharge from drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
CHROMIUM	7/26/2016	2.59	2.34 - 2.59	ppb	100	100	Discharge from steel and pulp mills; Erosion of natural deposits.
FLUORIDE	7/26/2016	1.04	0.467 - 1.04	ppm	4	4	Erosion of natural deposits; water additive which promotes strong teeth; Fertilizer discharge.
NITRATE-NITRITE	2/27/2017	0.465	0.0657 - 0.465	ppm	10	10	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits

Disinfection Byproducts	Monitoring Period	Highest RAA	Range	Unit	MCL	MCLG	Likely Source Of Contamination
TOTAL HALOACETIC ACIDS (HAA5)	4/1/2016 - 3/31/2017	8.615	4.66 - 16.8	ppb	60	0	By-product of drinking water disinfection.
TTHM	4/1/2016 - 3/31/2017	27.125	18 - 41.8	ppb	80	0	By-product of drinking water disinfection.

Radiological Contaminants	Collection Date	Highest Value	Range	Unit	MCL	MCLG	Likely Source Of Contamination
COMBINED RADIUM (-226 & -228)	7/24/2017	0.79	0.79	pCi/L	5	0	Erosion of natural deposits
GROSS ALPHA, INCL. RADON & U	1/17/2017	4.93	4.93	pCi/L	15	0	Erosion of natural deposits
RADIUM-226	7/24/2017	0.79	0.79	pCi/L		0	Erosion of natural deposits.

Unregulated Water Quality Data	Collection Date	Highest Value	Range	Unit	Secondary MCL
NICKEL	8/10/2015	0.00247	0.00222 - 0.00247	mg/L	0.1
SULFATE	8/10/2015	206	182 - 206	mg/L	250

During the 2017 calendar year, we had the below noted violation(s) of drinking water regulations.

Type	Category	Analyte	Compliance Period
No Violations Occurred in the Calendar Year of 2017			

**The City Of South Sioux City has taken the following actions to return to compliance with the Nebraska Safe Drinking Water Act:**

**Additional Required Health Effects Language:**

Infants and children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your home's plumbing. If you are concerned about elevated lead levels in your home's water, you may wish to have your water tested and flush your tap for 30 seconds to 2 minutes before using tap water. Additional information is available from the Safe Drinking Water Hotline (800-426-4761).

Coliforms are bacteria that 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.

There are no additional required health effects violation notices.

2017 Water Quality Data-Primary (Health-Related) Contaminants Zenith Water Plant								
<u>Regulated Contaminants</u>		-	-	-	-	-	-	-
<u>Microbiological</u>	<u>Detected</u>	<u>Range</u>	<u>MCL</u>	<u>MCLG</u>	<u>Units</u>	<u>Possible Sources of</u>	<u>Notes</u>	
<u>Contaminants</u>	<u>Amount</u>	-	-	-	-	<u>Contaminants</u>	-	
<u>Turbidity</u>	<u>0.67</u>	<u>.67-.03</u>	<u>MCLG</u>	<u>N/A</u>	<u>NTU</u>	<u>Soil Runoff.</u>	-	<u>99.90% Below 0.03 NTU</u>
<u>Inorganic &amp; Organic</u>	-	-	-	-	-	-	-	-
<u>Compounds</u>	-	-	-	-	-	-	-	-
<u>Fluoride</u>	<u>1</u>	<u>1.00-.53</u>	<u>4</u>	<u>4</u>	<u>ppm</u>	<u>Erosion of natural deposits and runoff</u>	-	
-	-	-	-	-	-	<u>Water additive which promotes strong</u>	-	
-	-	-	-	-	-	<u>teeth, discharge, from fertilizers and</u>	-	
-	-	-	-	-	-	<u>Aluminum factories.</u>	-	
<u>Sodium (A)</u>	<u>79</u>	<u>N/A</u>	<u>N/A</u>	<u>N/A</u>	<u>ppm</u>	<u>Erosion of natural deposits.</u>	-	
-	-	-	-	-	-	<u>Added to water during treatment</u>	-	
-	-	-	-	-	-	<u>process</u>	-	-
<u>Nitrate</u>	<u>1.3</u>	<u>N/A</u>	<u>N/A</u>	<u>10</u>	<u>ppm</u>	<u>Erosion of natural deposits and runoff</u>	-	
<u>Total Organic Carbon - Average % Removed</u>	<u>16.67</u>	<u>16.67-0.00</u>	<u>TT</u>	<u>N/A</u>	-	<u>Naturally present in the environment</u>	-	
<u>Barium</u>	<u>0.05</u>	-	<u>2</u>	<u>2</u>	<u>ppm</u>	<u>Discharge from metal refineries</u>	-	
<u>Disinfection</u>	-	-	-	-	-	-	-	-
<u>Total Trihalomethanes</u>	<u>71</u>	<u>65-82</u>	<u>80</u>	<u>N/A</u>	<u>ppb</u>	<u>By-product of drinking water disinfection</u>	-	
<u>Total Haloacetic Acids</u>	<u>34</u>	<u>22-42</u>	<u>60</u>	<u>N/A</u>	<u>ppb</u>	<u>By-product of drinking water disinfection</u>	-	
<u>Disinfectant</u>	<u>Detected</u>	<u>Range</u>	<u>MRDL</u>	<u>MRDL</u>	<u>Units</u>	-	-	-
<u>Chlorine (Cl2)</u>	<u>5</u>	<u>5.000-1.086</u>	<u>4</u>	<u>4</u>	<u>ppm</u>	<u>Water additive used to control microbes</u>	-	
<u>Radiochemical</u>	<u>Detected</u>	<u>Range</u>	<u>MCL</u>	<u>MCLG</u>	<u>Units</u>	<u>Possible Sources of</u>	-	
<u>Contaminants</u>	<u>Amount</u>	-	-	-	-	<u>Contaminants</u>	-	
<u>Alpha Emitters</u>	<u>5.5</u>	-	<u>15</u>	<u>0</u>	<u>pCi/L</u>	<u>Erosion of natural deposits</u>	-	
<u>Combined Radium</u>	<u>0.8</u>	-	<u>5</u>	<u>0</u>	<u>pCi/L</u>	<u>Erosion of natural deposits</u>	-	
<u>Cryptosporidium</u>	<u>No detects in previous sampling</u>	-	-	-	-	-	-	-
<u>Giardia</u>	<u>No detects in previous sampling</u>	-	-	-	-	-	-	-
<u>Lead &amp; Copper</u>	<u>Action</u>	<u>90th</u>	-	-	-	<u>Possible Sources of</u>	-	
-	<u>Level</u>	<u>Percentile</u>	-	-	<u>Units</u>	<u>Contaminants</u>	-	
<u>Lead (B)</u>	<u>15</u>	<u>5</u>	-	-	<u>ppb</u>	<u>Corrosion of household plumbing systems</u>	<u>One sample exceeded AL</u>	
<u>Copper</u>	<u>1.3</u>	<u>1.20</u>	-	-	<u>ppm</u>	<u>Corrosion of household plumbing systems</u>	<u>Five sample exceeded AL</u>	

