City of Huron 2013 Water Quality Report

This is the annual City of Huron Water Quality Report. Subsequent reports will be provided to residents of the city annually on or before July 1. The City of Huron's drinking water surpasses all current federal and state water quality regulations. This report summarizes results of all water quality monitoring that the Huron Water Treatment Plant was required to perform on your drinking water in 2013 (except as noted). If you have any questions about the contents of this report, please call Water-Sewer Superintendent Vince Juelfs at (605) 353-8547. The Huron City Commission meets every Monday at 5:30 PM at the Huron Municipal Building, 239 Wisconsin Ave SW. These meetings are open to your questions. An agenda of the meeting is published in the Huron Daily Plainsman every Sunday and may also be found on the city's web site at: http://www.huronsd.com/city-government/city-commission/meetings and click on "Agenda Packet". **We Welcome Your Input.** This report is mandated by the Environmental Protection Agency (EPA) in 40 CFR Parts 141 and 142. If you have any questions about this mandate more information can be found at the Department of Environment & Natural Resources web site at: http://denr.sd.gov or you may contact the city Water Department at (605) 353-8547.

City of Huron Water Sources. The City of Huron's water comes from two different sources. The primary source is the Mid-Dakota Rural Water System. The source of Mid-Dakota Rural Water is the Oahe Reservoir on the Missouri River. The water intake is located on the east bank of the Oahe Reservoir, approximately 6 miles north of Pierre, SD. The DENR, through the South Dakota Association of Rural Water Systems (SDARWS), helped Mid-Dakota Rural Water System staff develop a Source Water Assessment and Protection Plan, which was approved at the February 2002 Mid-Dakota Rural Water System, Inc. Board of Directors Meeting. The plan was completed ahead of schedule before the May 2003 target date. The Source Water Assessment and Protection Plan development was a voluntary effort but it is now mandated by EPA. Mid-Dakota believes the Source Water Assessment and Protection Plan was well worth the time and effort needed for its development. With the information that was obtained, we are pleased to report that the source water quality is excellent, and Mid-Dakota water meets and exceeds federal and state requirements. The secondary source of water is the West Well Field within the Warren Aquifer. It is located 3 miles west of Huron. The City of Huron currently has 6 wells that withdraw water from the aquifer.

Why do we test our water? Our water needs to be safe. Our water needs to be pleasing. 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 land surface or through the soil, it can dissolve naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

What form of disinfection is used? Chloramines are the form of disinfection used to treat Huron's Water Supply. Chloramines are the conversion of the free chlorine residual to a combined chlorine/ammonia residual (chloramines) to minimize disinfection by-products and to form a more stable, longer-lasting disinfectant. To further explain, the ammonia (which is naturally occurring in our well water) combines with any free chlorine in the water to form chloramines. If ammonia wasn't combined with the chlorine, chlorine would combine with organic matter in the water and form trihalomethanes (THMs) in excess of EPA standards. Some studies suggest THMs increase the risk of cancer. A longer-lasting disinfectant is needed to maintain chlorine residual in our large distribution system.

Cross Connections. Without proper protection devices, something as useful as your garden hose has the potential to poison your home's water supply. In fact, over half of the nation's cross-connections involve unprotected garden hoses. Cross connections are installed each day in the United States because people are unaware of the problems they can create. Death, illness, contaminated food products, industrial and chemical products rendered useless are some of the consequences of such connections. As a result, many hours and dollars are lost due to cross connections.

What is a "cross-connection?" A cross-connection is a permanent or temporary piping arrangement which can allow your drinking water to be contaminated if a backflow condition occurs. A cross connection is a point in a plumbing system where the potable water supply is connected to a non-potable source. Briefly, a cross connection exists whenever the drinking water system is or could be connected to any non-potable source (plumbing fixture, equipment used in any plumbing system). Pollutants or contaminants can enter the safe drinking water system through uncontrolled cross connections when backflow occurs.

Additional Health Information. In order to ensure that tap water is safe to drink, EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration (FDA) 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 contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling EPA's Safe Drinking Water Hotline (1-800-426-4791). 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 and Center for Disease Control guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbiological contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791). 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, or runoff from mining or farming activities.
- **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 are naturally occurring in some of the rocks in this region.

Guidelines for Outdoor Water Conservation.

Landscaping is a major consumer of residential water. What can you do to reduce outside water consumption without sacrificing an attractive landscape?

- Water in the early morning or evening. If you sprinkle your lawn under the hot midday sun, you will lose as much as 30 percent of your water to evaporation.
- Several short watering sessions are better than a single long one. Lawns can only absorb water so fast. It is better to water your lawn for three 10-minute sessions – with each session a half hour apart – than it is to water steadily for 30 minutes and cause run-off.
- Better yet, Xeriscape. Xeriscaping is water wise landscaping that stresses proper soil preparation, efficient irrigation, and the use of water stingy plants. For homeowners, it means less maintenance, lower water bills, and a colorful decorative look. Contact your local greenhouse for more information.

Other Tips to Reduce Outdoor Water Usage:

- Use a broom instead of a hose to clean driveways, walks and patios.
- Keep grass at least two inches high to shade roots and hold moisture.
- Aerate lawns regularly and use mulch around plants to reduce evaporation.
- Water trees slowly, deeply and infrequently to encourage deep rooting.

Definitions: Terms used in the water quality table and in other parts of this report are defined here			
AL	Action Level	**NTU**	Nephelometric Turbidity Units (measure of undissolved solids)
≥	Greater Than or Equal To	**pCi/l**	Picocuries per liter (a measure of radioactivity)
<	Less Than	**ppb**	Parts per billion, or micrograms per liter (ug/l)
HAA5	Haloacetic Acids	**ppm**	Parts per million, or milligrams per liter (mg/l)
MCL	Maximum Contaminant Level	**ppq**	Parts per quadrillion, or picograms per liter
MCLG	Maximum Contaminant Level Goal	**pspm**	Positive samples per month
MFL	Million fibers per liter	**ppt**	Parts per trillion, or nanograms per liter
mrem/year	Millirems per year (a measure of radiation absorbed by the body)	**TT**	Treatment Technique
NA	Not Applicable	**TTHMs**	Total Trihalomethanes (Chloroform, Bromodichloroethane, Dibromochloromethane, Bromoform)
ND	Not Detected	**90th % Level**	Level at which 90 percent of the samples measured are less than the concentration listed
Action Level (AL)	The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.		
Detected Level	Actual level of contaminants found.		
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.		
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.		
Treatment Technique (TT)	A treatment technique is a required process intended to reduce the level of a contaminant in drinking water.		

Blend - Inorganic Chemicals

Parameter	Date	Unit	MCLG	MCL	Detected Level	Major Sources
Cadmium	4/24/13	mg/L	.005	.005	0	Erosion of natural deposits
Chromium	4/24/13	mg/L	100	100	0	Discharge from steel and pulp mills; erosion of natural deposits.
Mercury	4/24/13	mg/L	.002	.002	0	Erosion of natural deposits
Nickel	4/24/13	mg/L	.1	.1	0	Erosion of natural deposits
Selenium	4/24/13	mg/L	50	50	0	Erosion of natural deposits
Zinc	4/24/13	mg/L	5	NA	0	Erosion of natural deposits

NOTE: Fluoride is added in the treatment process to aid in the prevention of tooth decay.

Disinfection Byproducts

Parameter	Date	Unit	MCLG	MCL	Detected Level	Range	Major Sources
TTHMs	9/13/11	ppb	0	80	61.5	31.5 – 61.5	By-product of drinking water chlorination
HAA5	9/13/11	ppb	0	60	56.8	12.3 – 56.8	By-product of drinking water chlorination

Huron tested for TTHMs and for an additional list of 23 regulated volatile organic chemicals. Test results for the additional list of 23 regulated volatile organic chemicals were below the detection limit of the SD State Health laboratory.

Lead and Copper

Parameter	Date	Unit	MCLG	Action Level	90th % Level	No. of Sites > Action Level	Major Sources
Lead	7/26/11	ppb	0	15	3	0	Corrosion of household plumbing systems; erosion of natural deposits.
Copper	7/21/11	ppm	0	1.3	0.5	0	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preserves

90th Percent Level = Level at which 90 percent of the samples measured are less than the concentration listed. EPA requires Public Water Systems to implement treatment at the plant to control lead and copper at consumers' homes if the 90th percent level is greater than the MCL (or Action Level) listed in the table above.

The staff at the Huron Water Treatment Plant has tested water from over 30 different homes throughout the City for the past several years. These homes are considered high risk homes because they contain lead service lines or lead solder used on plumbing joints.

SD DENR allows the City of Huron to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of the city's data, though representative, are more than one year old. The next set of samples is due in 2011. The City of Huron is on a reduced monitoring schedule of once every three years.

Mid-Dakota Rural Water - Regulated Inorganic Chemicals

Substance	Date	Unit	90% Level	Ideal Goal	Test Sites > Action Level	Highest Level Allowed (AL)	Major Source of Contamination
Copper	9/2/13	ppm	0.3	0	0	1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead	9/2/13	ppb	2	0	0	15	Corrosion of household plumbing systems; erosion of natural deposits
Substance	**Date**	**Unit**	**MCLG**	**MCL**	**Highest Level Detected**		**Major Sources**
Alpha Emitters	5/15/13	pCi/l	0	15	4.4		Erosion of natural deposits.
Antimony	3/19/13	ppb	6	6	0.4		Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder.
Arsenic	3/19/13	ppb	NA	10	3		Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
Barium	3/19/13	ppm	2	2	0.042		Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Chromium	3/19/13	ppb	100	100	1.6		Discharge from steel and pulp mills; erosion of natural deposits.
Fluoride	7/8/13	ppm	4	4	1.25 (Range 1.04 - 1.25)		Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Haloacetic Acids	9/5/13	ppb	0	60	23.9 (Range 11.9 – 23.9)		By-product of drinking water chlorination
Selenium	3/19/13	ppb	50	50	1.4		Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines
TTHMs	3/15/13	ppb	0	80	50.71 (Range 35.7 – 50.71)		By-product of drinking water chlorination