CITY OF GRAND ISLAND

Presented By
Grand Island Utilities

ANNUAL WATER QUALITY REPORT

WATER TESTING PERFORMED IN 2015

PWS ID#: NE 31-07902

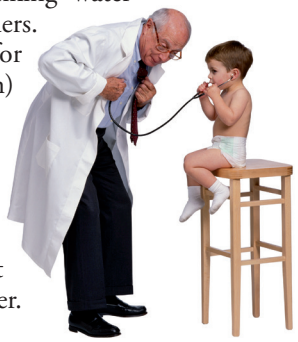
Meeting the Challenge

Once again the Grand Island Utilities Department is proud to present the Annual Drinking Water Report, covering all drinking water testing performed between January 1 and December 31, 2015. Over the years, Grand Island Utilities has been dedicated 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, the Utilities Department will 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.

Important Health Information

Certain minerals are radioactive and may emit a form of radiation known as alpha radiation. Some people who drink water containing alpha emitters in excess of the MCL over many years may have an increased risk of getting cancer.

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.



Community Participation

If you would like to observe or participate in the decision-making processes that affect drinking water quality, please attend the regularly scheduled meetings of the City Council at City Hall, 100 East 1st Street.

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 (e.g., pink and black slime) 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 and 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!)

Substances That Could Be in Water

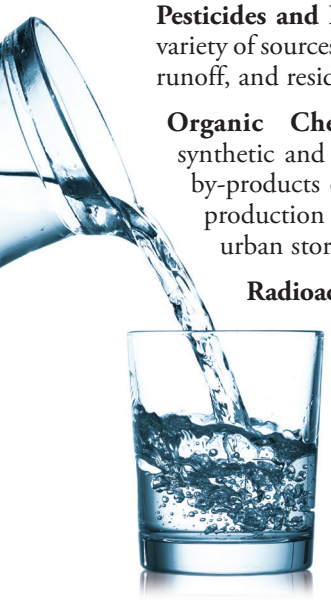
To ensure that tap water is safe to drink, the U.S. EPA prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. U.S. Food and Drug Administration regulations establish limits for contaminants in bottled water that must provide the same protection 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.

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 two 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.

Where Does My Water Come From?

The source of drinking water used by the City of Grand Island is groundwater from the sand and gravel aquifer that underlies the area. This water is pumped from wells maintained by the City.

Source Water Assessment

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, you may contact the NDEQ at (402) 471-6988 or go to www.deq.state.ne.us.

QUESTIONS?

For more information about this report, or for any questions relating to your drinking water, please call Timothy Luchsinger, Utilities Director, at (308) 389-0280.

Failure in Flint

The national news coverage of water conditions in Flint, Michigan, has created a great deal of confusion and consternation over the past year. The water there has been described as being corrosive; images of corroded batteries and warning labels on bottles of acids come to mind. But is corrosive water bad?

Corrosive water can be defined as a condition of water quality that will dissolve metals (iron, lead, copper, etc.) from metallic plumbing at an excessive rate. There are a few contributing factors but, generally speaking, corrosive water has a pH of less than 7; the lower the pH, the more acidic, or corrosive, the water becomes. (By this definition, many natural waterways throughout the country can be described as corrosive.) While all plumbing will be somewhat affected over time by the water it carries, corrosive water will damage plumbing much more rapidly than water with low corrosivity.

By itself, corrosive water is not a health concern; your morning glass of orange juice is considerably more corrosive than the typical lake or river. What is of concern is that exposure in drinking water to elevated levels of the dissolved metals increases adverse health risks. And there lies the problem.

Public water systems are required to maintain their water at optimal conditions to prevent it from reaching corrosive levels. Rest assured that Grand Island Utilities routinely monitors the water to make sure that what happened in Flint never happens here. For more information on how corrosivity impacts water quality, download this informative pamphlet: http://goo.gl/KpTmXv.

What's Not in Our Water?

Here is a list of regulated and unregulated contaminants that we tested for and did not detect:

Vinyl chloride; 1,2-dichloroethane; chlorobenzene; ortho-dichlorobenzene; ethylbenzene; m,p-xylenes; styrene; bromomethane; chloroethane; tetrachloroethylene; cis-1,2-dichlorethene; ortho-chlorotoluene; para-chlorotoluene; dibromomethane; meta-dichlorobenzene; bromobenzene; bromochloromethane; n-butylbenzene; 1,2,3-trichlorobenzene; tert-butylbenzene; hexachlorobutadiene; isopropylbenzene; para-isopropyltoluene; naphthalene; para-dichlorobenzene; 1,1-trichloroethylene; carbon tetrachloride; dichloromethane; 1,2-dichloropropane; trans-1,2-dichloroethylene; 2,2-dichloropropane; 1,1-dichloropropene; 1,2-dichloropropane; 1,1,2-trichloroethane; 1,1,1,2-tetrachloroethane; 1,1,2,2-tetrachloroethane; 1,2,3-trichloropropane; n-propylbenzene; sec-butylbenzene; dichlorodifluromethane; fluorotrichloromethane; 1,2,4-trichlorobenzene; 1,2,4-trimethylbenzene; 1,3,5-trimethylbenzene; 1,3-dichoropropene. Alachlor; aldrin; benzopyrene; butachlor; butylate; chlordane; chlorpyrifos; cyanazine; dieldrin; dyfonate; gamma-BHC; hepachlor; hexachlorobezene; hexachlorocylclopentadiene; methoxychlor; metribuzin; propachlor; simazine; trifluralin; aldicarb; aldicarb sulfone; aldicarb sulfoxide; carbaryl; carbofuran; 3-hydroxycarbofuran; methomyl; oxmyl(vydate); ethylene dibromide; dibromochloropropane; PCBs; 2,4-D; 2,4,5-TP; pentachlorophenol; dalapon; dicamba; dinoseb; picloram; acifluorfen; glyphosate; diquat; paraquat; endothall; dioxin. Antimony; cadmium; mercury; thallium; beryllium; cyanide; metolochlor; chloromethane; perchlorate; EPTC; 2,6-dinitrotoluene; 2,4-dinitrotoluene; molinate; terbacil; acetochlor; 4,4-DDE; MtBE; nitrobenzene; trichloroethene; toluene; benzene; total DCPA; 1,1-dichloroethylene; 1,1,1-trichlorethane; aldicarb sulfoxide; 1,1-dichloroethane; endrin, heptachor epoxide, selenium.

Sampling Results

During the past year, hundreds of water samples have been taken in order to determine the presence of any radioactive, biological, inorganic, volatile organic, or synthetic organic contaminants. The state requires us to monitor 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.

REGULATED SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Arsenic (ppb)	2011	10	0	4.27	2.11–4.27	No	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes
Atrazine (ppb)	2015	3	3	0.502	0.095–0.502	No	Runoff from herbicide used on row crops
Barium (ppm)	2014	2	2	0.162	0.0854–0.162	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Chromium (ppb)	2014	100	100	2.41	2.41–2.41	No	Discharge from steel and pulp mills; Erosion of natural deposits
Combined Radium (pCi/L)	2014	5	0	4.2	2.0–4.2	No	Erosion of natural deposits
Combined Uranium (pCi/L)	2015	20	0	17.3	15.0–17.3	No	Erosion of natural deposits
Fluoride (ppm)	2014	4	4	0.74	0.32–0.74	No	Erosion of natural deposits; Water additive that promotes strong teeth; Discharge from fertilizer and aluminum factories
Gross Alpha (pCi/L)	2015	15	0	16.3	14.4–16.3	No	Erosion of natural deposits
Gross Alpha, excluding Radon & Uranium (pCi/L)	2015	15	0	0.9	0.7–0.9	No	Erosion of natural deposits
Haloacetic Acids [HAAs] (ppb)	2015	60	NA	7.48	4.25–7.48	No	By-product of drinking water disinfection
Nitrate[1] (ppm)	2015	10	10	5.90	0.635–5.90	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Radium 226 (pCi/L)	2014	5	0	1.4	0.3–1.4	No	Erosion of natural deposits
Radium 228 (pCi/L)	2014	5	0	2.8	1.6–2.8	No	Erosion of natural deposits
TTHMs [Total Trihalomethanes] (ppb)	2015	80	NA	75.20	56.9–75.2	No	By-product of drinking water disinfection
Total Coliform Bacteria (% positive samples)	2015	5% of monthly samples are positive	0	0	NA	No	Naturally present in the environment
Uranium (ppb)	2015	30	0	28.7	17.2–28.7	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%TILE)	SITES ABOVE AL/TOTAL SITES	VIOLATION	TYPICAL SOURCE
Copper[2] (ppm)	2013	1.3	1.3	0.64	0/30	No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead (ppb)	2013	15	0	1.06	0/30	No	Corrosion of household plumbing systems; Erosion of natural deposits

SECONDARY SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	SMCL	MCLG	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
pH (Units)	2015	6.5–8.5	NA	7.46	6.70–7.46	No	Naturally occurring

UNREGULATED AND OTHER SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	TYPICAL SOURCE
Hardness (grains/gal)	2015	20.1	16.4–20.1	Minerals in groundwater
Nickel (ppb)	2015	9.63	2.14–9.63	Naturally occurring
Sulfate (ppm)	2015	243	41.8–243	Runoff/leaching from natural deposits; Industrial wastes

[1] 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.
[2] Samples taken from households throughout the service area.

Definitions

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

grains/gal (grains per gallon): Grains of compound per gallon of water.

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).

SMCL (Secondary Maximum Contaminant Level): SMCLs are established to regulate the aesthetics of drinking water like taste and odor.