

2010 Quality on Tap Report

CITY OF STURGIS WATER SYSTEM

We're pleased to present you the 2010 Quality on Tap Report. This report is designed to inform you about the quality water and services we deliver to you every day. Our constant goal is to provide you with a safe and dependable supply of drinking water. We want you to understand the efforts we make to continually improve the water treatment process and protect your water resources. We are committed to ensuring the quality of your water. This report shows your water quality and what it means. If you have any questions about this report or your water utility, please contact the Engineering Department at 659-7249. We want our valued customers to be well informed about their water utility.

Este informe contiene informacion muy importante sobre su agua de beber. Si desea entender este reporte puede buscar alguien que lo traduzca para ud.

Source Water Information

Your source water comes from four groundwater wells located in the east and south areas of Sturgis, which pump the water from an underground aquifer. The State of Michigan performed an assessment of your source water in 2003 to determine the susceptibility or relative potential for contamination. The susceptibility rating is a seven-tiered scale from "very low" to "very high" based primarily on geological sensitivity, water chemistry, and contaminant sources. All four of the City's source wells have a moderately high susceptibility rating. There are no significant potential sources of contamination within the standard well isolation area.

We continue to take measures to protect your source water. The City has an established Wellhead Protection Program (WHPP). The WHPP includes the following elements: identification of potential sources of contamination; wellhead protection area management, public education / participation and contingency plans. The WHPP "Local Team" has developed a ground water protection ordinance as a mechanism to provide wellhead protection area management. We anticipate implementing the ordinance in 2011. An Emergency Response Plan was completed in 2004. The plan goal is to protect the health of our customers and integrity of water system operations from events which could cause harm. The Emergency Response Plan will be used to effectively minimize system threats which may disrupt your water supply. The City's Cross Connection Control Program continued its emphasis on initial inspections rather than low hazard re-inspections in an effort to get all facilities inspected. Cross Connection Control involves checking to see whether proper back flow prevention devices are in place and testing those devices to verify proper operation. Sixty seven devices were tested and 29 accounts received their initial inspection in 2010.

Your source wells have three chemicals added before entering the water system. At each well, the following chemicals are added: chlorine, fluoride (hydrofluosilicic acid), and a polyphosphate polymer. Chlorine is a disinfectant added to prevent bacterial growth in the water supply system. Normal chlorine concentrations are 0.8 to 1.0 parts per million (ppm) at each well to maintain a chlorine residual in your water supply system. Fluoride is added to your supply water to help prevent tooth decay. The polyphosphate polymer is used for aesthetics to minimize "red water". It also helps control corrosion and scale in your water supply system. We are adding variable frequency drives to two of the wells this year to reduce energy consumption and reduce pressure changes within the water system. The two remaining wells will have variable frequency drives installed in the future.

Water Quality Monitoring

The City of Sturgis routinely monitors for contaminants in your drinking water according to Federal and State laws. Table 1 shows all required monitoring results for the period of January 1st to December 31st, 2010. Required monitoring for some regulated contaminants occurs less often than annually. Testing results older than 5 years are not included. 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 the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA Safe Drinking Water Hotline (1-800-426-4791) or at EPA's web site (<http://www.epa.gov/safewater/hfacts.html>).

Contaminant Monitoring Results

In Tables #1 and #2 below you will find many terms and abbreviations you might not be familiar with. To help you better understand these terms we've provided the following definitions:

- **Non-Detects (ND)** - laboratory analysis indicates that the constituent is not present.
- **Parts per million (ppm)** - one part per million corresponds to one minute in two years or a single penny in \$10,000.
- **Parts per billion (ppb)** - one part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.
- **Action Level (AL)** - the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
- **Maximum Contaminant Level (MCL)** - The "Maximum Allowed" is 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 "Goal" is 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.
- **Trace** - A compound detected at levels above the detection limits, but at levels too low to quantify.
- **N/A** - Not Available
- **Maximum residual disinfectant level (MRDL)** - The highest level of a disinfectant allowed in drinking water.
- **Maximum residual disinfectant level goal (MRDLG)** - The level of drinking water disinfectant below which there is no known or expected risk to health.

TABLE 1. REGULATED CONTAMINANTS MONITORING RESULTS					
Inorganic	Range of Values Detected	Maximum Level Detected	MCL	MCLG	Likely Sources of Contamination
Barium	0.04 - 0.06 ppm	0.06 ppm	2 ppm	2 ppm	Erosion of natural deposits.
Nitrate (as Nitrogen)	ND – 0.9 ppm	0.9 ppm	10 ppm	10 ppm	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits.
Fluoride	0.17 - 1.1 ppm	1.1 ppm	4 ppm	4 ppm	Water additive which promotes strong teeth.
Volatile Organic	Range of Values Detected	Running Annual Average	MCL	MCLG	Likely Sources of Contamination
TTHM's -[Total trihalomethanes]	1.0 – 1.0 ppb	1.0 ppb	80 ppb	N/A	By-product of drinking water chlorination.
Microbiological	Range of Values Detected	Maximum Level Detected	MCL	MCLG	Likely Sources of Contamination
<i>Total Coliform Bacteria</i>	<i>1 Positive Sample</i>	N/A	Presence of coliform bacteria in > 5% of monthly samples	zero	Naturally present in the environment.
Disinfectant	Range of Values Detected	Highest Quarterly Running Annual Average	MRDL	MRDLG	Likely Sources of Contamination
Chlorine Residual	0.03 – 0.97 ppm	0.45 ppm	4 ppm	4 ppm	By-product of drinking water chlorination.

TABLE 1. REGULATED CONTAMINANTS MONITORING RESULTS, Continued

LEAD/COPPER	90th Percentile Value	# of sites above the AL	Action Level AL	MCLG	Likely Sources of Contamination
Copper*	0.388 ppm	0	1.3 pm	1.3 ppm	Corrosion of household plumbing systems; erosion of natural deposits
Lead*	1 ppb	0	15 ppb	0 ppb	Corrosion of household plumbing systems, erosion of natural deposits

TABLE 2. SPECIAL CONTAMINANT MONITORING RESULTS

Special Contaminant	Range of Values Detected	Average of Values Detected	MCL	EPA Goal MCLG	Likely Sources of Contamination
Sodium	6.0 – 9.0 ppm	8.0 ppm	N/A	N/A	Erosion of Natural Deposits

* 2008 Results for Lead and Copper

Meaning of Testing Results

So what do the testing results mean? We have learned through our monitoring and testing that some contaminants have been detected. Regulated contaminant detects are found in Table 1. Eight contaminants were detected. (Note: Some regulated contaminants are tested on intervals longer than five years). Sodium monitoring results in Table 2 are required by EPA regulations while they consider setting a limit on it. The City of Sturgis is required to monitor your drinking water for specific contaminants. Results of regular monitoring are an indicator of whether or not your drinking water meets health standards. The City of Sturgis water system is also required to monitor for unregulated contaminants which don't yet have a drinking water standard set by the USEPA. The purpose of monitoring for these contaminants is to help the EPA decide whether the contaminants should have a standard. No unregulated contaminants were monitored in 2010. Previous unregulated contaminant monitoring results can be obtained by contacting Rick Miller at 651-2879.

Your water system had one Total Coliform bacteria positive test results out of 163 Total Coliform bacteria samples taken in 2010. The positive sample occurred in March. Repeat samples were taken at the original sample site, upstream and downstream of the original sample site, and at all three municipal wells which supplied water during the 72 hours prior to the positive test. All repeat samples tested negative for Total Coliform, Fecal coliform, and E-coli bacteria. A positive test for Total Coliform bacteria indicates the potential presence of disease causing organisms. Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially-harmful, bacteria may be present. If Coliforms were found in more samples than allowed this would be a warning of potential problems within your water system. The positive result could have occurred due to accidental contamination while obtaining the sample, at the testing lab, or caused by an unknown factor.

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. The City of Sturgis 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 (1-800-426-4791) or at <http://water.epa.gov/safewater/lead>.

Population Vulnerability & Contamination Sources

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 (1-800-426-4791).

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

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 byproducts of industrial processes and petroleum production, and can 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.

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. Food and Drug Administration regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

Risk Assessment & Health Effects

MCL's are set at very stringent levels. To understand the possible health effects described for many regulated constituents, a person would have to drink 2 liters (about 2 quarts) of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect.

For Additional Information

At this time, the City does not anticipate any meetings regarding the quality of your drinking water. If a meeting were scheduled, local media outlets, including the City's newsletter "The Wire" and/or weekly "E-Wire" would have additional information. We hope our 2010 Quality on Tap Report has answered your questions regarding your water supply system and tap water quality. If you have any questions or wish to be notified of meetings or other opportunities for public participation in decisions that affects the quality of your drinking water, please call the Engineering Department at 659-7249.