2008 Water Quality Report for the City of Rockford

This report addresses the quality of the drinking water, delivered to our customers, during the calendar year 2008. Included are details about where your water comes from, what is in the water, and how it compares to Federal Environmental Protection Agency (**EPA**) and State Department of Environmental Quality (**MDEQ**) standards. Your water comes from 3 groundwater wells located in the S.E. section of the City. After the water is drawn from these wells, it is pumped into a water treatment facility nearby where the iron is removed through aeration and filtration. A disinfectant (chlorine solution) is added to the water for protection against microbial contaminates in our storage tanks and nearly 30 miles of distribution piping. In addition, fluoride is injected into the water to protect against dental caries (tooth decay). An ortho-phosphate is added to protect against lead and copper leaching into your drinking water from household plumbing and fixtures. In 2003 the DEQ performed a source water assessment for the City of Rockford. This assessment found that the production wells have a moderate susceptibility to contamination based on our source of water and possible sources of contamination within the wellhead protection area. For more information or a copy of this report please contact City Hall at 616-866-1537. During this source water assessment we also initiated a Wellhead Protection Plan for the city, which can be very extensive, and is designed to protect the source of our drinking water. Information pamphlets will be posted at City Hall with regards to definitions and results of this plan. One part of Wellhead Protection involves tritium monitoring. Before the 1950's, rainwater had naturally occurring levels of Tritium, about 5 to 10 TU (Tritium Units). Following nuclear weapons testing in 1954, levels in excess of 1000 TU were detected, and are not uncommon. Tritium analysis may be used to estimate the time surface water entered the ground water system and the susceptibility of the ground water system to contamination. Since our water is below 2 TU, it is considered "not vulnerable" and the water we drink is considered to be older than 1954.

- **Contaminants and their presence in water:** 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)**.

- **Vulnerability of sub-populations:** 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 systems 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, from Surface Water sources and other microbial contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

- **Sources of drinking water:** The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. Our water comes from 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 a 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 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 and residential uses.
  - **Radioactive contaminants**, which are naturally occurring or may be the result of oil and gas production and mining activities.
  - **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 stormwater runoff, and septic systems.

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

Water Quality Data

The table below lists all the drinking water contaminants which we detected during the 2008 calendar year. The presence of these contaminants in the water does not necessarily indicate that the water poses a health risk. Unless otherwise noted, the data presented in this table is from testing done January 1 – December 31, 2008. The State allows us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. All of the data is representative of the water quality, but some are more than one year old.

Terms and abbreviations used below:

- **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.
- **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.
- **N/A:** Not applicable. **ND:** not detectable at testing limit. **ppb:** parts per billion or micrograms per liter. **ppm:** parts per million or milligrams per liter. **pCi/l:** picocuries per liter (a measure of radioactivity). **TU:** tritium units (a measure of radioactivity).
- **AL:** Action Level. The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that 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.

Regulated Contaminant	MCL	MCLG	Highest Level Detected	Sample Date (If not in '08)	Violation Yes / No	Typical Source of Contaminant
Arsenic * (ppb)	10	0	ND	(8/04/2008)	No	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes
Barium (ppm)	2	2	0.13	(3/03/2003)	No	Discharge of drilling wastes; Discharge of metal refineries; Erosion of natural deposits
Fluoride (ppm)	4	4	1.1	8/04/2008	No	Erosion of natural deposits. Discharge from fertilizer and aluminum factories.
Nitrate (ppm)	10	10	ND	8/04/2008	No	Runoff from fertilizer use; leaching from septic tanks, sewage; Erosion of natural deposits
Total Haloacetic Acids (ppb)	60	N.A.	6.4	(9/25/2007)	No	By-product of drinking water chlorination
(ppb) Total Trihalomethanes	80	N.A.	5.0	(9/25/2007)	No	By-product of drinking water chlorination
Radioactive Contaminant						
Alpha emitters (pCi/L)	15	0	0.4	(7/23/2003)	No	Erosion of natural deposits
Radium – 226 and 228 (pCi/L)	5	0	0.4	(7/23/2003)	No	Erosion of natural deposits
Special Monitoring and Unregulated Contaminant **			**Level Detected**	**Sample Date (If not in '08)**	**Typical Source of Contaminant**	
Tritium (TU)	NA	< 1	1.62	(8/29/2007)	No	Erosion of natural deposits, and Nuclear weapons testing in 1954
Sodium (ppm)			14	8/04/2008	Erosion of natural deposits	

* These arsenic values are effective January 23, 2006. Until then, the MCL is 50 ppb and there is no MCLG.

** Unregulated contaminants are those for which EPA has not established drinking water standards. Monitoring helps EPA to determine where certain contaminants occur and whether it needs to regulate those contaminants.

Contaminant Subject to AL	Action Level	90% of Samples ≤ This Level	Sample Date (If not in '08)	Number of Samples Above AL	Typical Source of Contaminant
Lead (ppb)	15	2	(8/30/2007)	0	Corrosion of household plumbing systems; Erosion of natural deposits

Copper (ppb)	1300	590	(8/30/2007)	0	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives

Microbial Contaminants	MCL	MCLG	Number Detected	Violation Yes / No	Typical Source of Contaminant
Total Coliform Bacteria	1 positive monthly sample (5% of monthly samples positive)	0	0	No	Naturally present in the environment
Fecal Coliform and *E. coli*	Routine and repeat sample total coliform positive, and one is also fecal or *E. coli* positive	0	0	No	Human and animal fecal waste

Monitoring and Reporting Requirements: The DEQ and EPA require us to test our water on a regular basis to ensure its safety. We met all the monitoring and reporting requirements for 2008.

We invite public participation in decisions that affect drinking water quality. The City of Rockford holds monthly City Council meetings every 2nd Monday at 7:00pm. For more information about your water, or the contents of this report, contact Dennis Brinks at 616-866-0560, or dbrinks@rockford.mi.us. For more information about safe drinking water, visit the U.S. Environmental Protection Agency at www.epa.gov/safewater/.

Water Efficiency

The United States uses about 4.8 billion gallons of water every day to flush waste. In the hospitality industry, guest showers, pools and laundry operations account for a large part of a hotel's energy bill. Toilets and urinals alone account for nearly one-third of building water consumption, making potential for water savings very high. In addition to reducing water consumption through efficient technologies, savings can also be obtained by reducing the amount of energy (pumping and heating) required to provide hot water for sinks and showers. The following sections outline potential water and energy saving opportunities for your facility.

1. Upgrade Laundry Facilities

New washing machines with a horizontal axis design use much less water than the older types of washing machines. The design can help save water as well as reduce water heating costs for laundries. To make sure your facility uses clothes washers meeting strict energy guidelines, it is recommended to purchase ENERGY STAR® qualified clothes washers. ENERGY STAR qualified clothes washers use superior designs that require less water and energy to get clothes thoroughly clean. They use 50 percent less energy than standard washers and 18 to 25 gallons of water per load, compared to the 40 gallons used by standard machines. Most ENERGY STAR qualified washers extract more water from clothes during the spin cycle, reducing drying time. Compared to a model manufactured before 1994, an ENERGY STAR qualified clothes washer can save up to $110 per year on your utility bills. Energy Star washing machines are available in two types, top loading and front loading. Commercial and residential models are available. For more information on these and other appliances visit: www.energystar.gov/products. By repairing a seal that leaks a drop of electrically heated water every five seconds, you can save about 400 gallons of water, 85 kilowatt-hours of electricity, 125 pounds of carbon dioxide and $10 per year. Gray water is water from sinks or washing machines that may contain soap, but is otherwise still clean. Many areas of the country have encouraged the use of gray water for landscaping purposes. Some cities do not permit reuse of gray water at all because of water quality concerns. For information on promotional programs or restrictions on gray water use, call your local building permits office.

2. Install Low-Flow Showerheads

Reducing your showerhead flow rate is a very practical way to reduce water consumption. Typical showerheads use about 4.5 to 8 gallons per minute (gpm). Low-flow showerheads use less than 2.5 gpm, with no marked reduction in quality or service. An upgraded showerhead can save water and reduce water heating bills.

3. Install Low-Flow Toilets

Prior to 1980, toilets were produced that used either seven gallons per flush (gpf) or 5 gpf. After 1980, 3.5 gpf toilets became the standard. In 2002 the federal standard for new commercial and residential construction is 1.6 gpf toilets. The low-flow toilets function by increasing flush velocity by either using the force of gravity or pressurizing the flush water. Replacing older fixtures with the new standard can ease the load on the utility while reducing facility costs.

Water Saved by Installing 1.6 gpf Toilet		
Current Model	**Savings**	**Percent**
7 gpf	5.4 gpf	77%
5 gpf	3.4 gpf	68%
3.5 gpf	1.9 gpf	54%

4. Fix Leaks in All Faucets

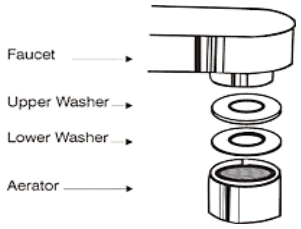
Waste per quarter at 60 psi water pressure

Diameter		Gallons	Cubic Feet	Cubic Meters
◯	1/4"	1,181,500	158,000	4,475
◯	3/16"	666,000	89,031	2,521
◯	1/8"	296,000	39,400	1,115
◯	1/16"	74,000	9,850	280

A continuous leak from a hole this size would, over three months, waste water in the amounts shown above.

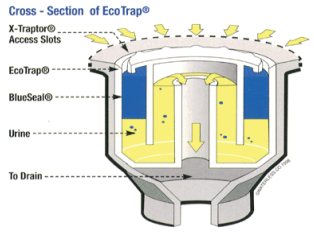
5. Utilize Automatic Faucet Controls or Flow Restrictors/Aerators

Water savings for waterless urinals can measure between 20,000 and 60,000 gallons annually. The savings depends on the size of your facility and the number of uses per day. Hands-free operation of the waterless urinal provides a more sanitary environment. There is less opportunity for bacteria to become airborne during a flush or to be transferred from the surface to hand. The waterless urinal is designed to be a dry surface system helping to prevent bacteria growth. Other important benefits of waterless urinals include reduced energy expenses, reduced sewer costs, lower installation charges, reduced urinal odors and an environmentally friendly product.



6. Install Waterless Urinals

Waterless urinals use a special drain insert that traps urine below a blue liquid and forms a barrier against sewer vapor escape. Urine sinks below the blue liquid because it is heavier. The diagram to the right shows the functions of the waterless urinal trap. There are three major benefits to using waterless urinals: reduced maintenance costs are reduced, maintenance of flush valve repair, encrustations, plugged drains and overflow will all be minimized. The blue liquid cartridge will need to be replaced about 4 times a year due to the sediment that collects in the cartridge.



If you have any questions about this report or your water utility please feel free to call **Dennis Brinks, Water Plant and Laboratory Supervisor at (616) 866-0560.**