

ANNUAL WATER QUALITY REPORT

Water testing performed in 2006

Proudly Presented By:

 **JOINT POWERS WATER BOARD**
AUGUSTA - GAITHERSBURG - DUMFRIES



PWS ID#: 1860024

Naturally Occurring Bacteria

The simple fact is, bacteria and other microorganisms inhabit our world. They can be found all around us: in our food; on our skin; in our bodies; and, in the air, soil, and water. Some are harmful to us and some are not. Coliform bacteria are common in the environment and are generally not harmful themselves. The presence of this bacterial form in drinking water is a concern because it indicates that the water may be contaminated with other organisms that can cause disease. Throughout the year, we tested 240 samples (20 samples every month) for coliform bacteria. In that time, none of the samples came back positive for the bacteria. Federal regulations now require that public water that tests positive for coliform bacteria must be further analyzed for fecal coliform bacteria. Fecal coliforms are present only in human and animal waste. Because these bacteria can cause illness, it is unacceptable for fecal coliforms to be present in water at any concentration. Our tests indicate no fecal coliform is present in our water.



How Is My Water Treated?

Iron and manganese are harmless minerals found in groundwater throughout Minnesota. They can cause stains on laundry and fixtures and can impart unwelcome tastes to the water. Concentrations of these minerals are reduced through a process of oxidation and filtration.

The Joint Powers Water Treatment Facility was completed late in 2000 and recently underwent an expansion to increase water treatment capacity. Water is drawn from a series of seven wells and is transported to the water treatment plant. Although of high quality, this water is naturally high in iron and manganese, much of which is in a dissolved state at this point. The dissolved minerals, if not removed here, would come out of solution out in the system, causing rusty water.

The well water then passes through a large air stone, similar to that which is found in fish tanks, only much larger. This air, as well as bleach, oxidizes the iron and much of the manganese to bring it out of solution and into a particulate form that can be physically filtered out. Because manganese is more difficult to oxidize than iron, another chemical called potassium permanganate is added to aid in oxidizing the remaining manganese. The water, now full of oxidized iron and manganese and looking very rusty-black, passes through large filters that are filled with rock, sand and anthracite coal that trap the mineral particles. Additionally, the sand in the filters is specially coated with a manganese product that helps buffer the amounts of chemicals that are necessary to remove the minerals. Without this buffer, the amount of potassium permanganate (a very bright purple chemical) added would have to be exact at all times or else it would cause a purple color to show up in the water. On an almost daily basis, the trapped iron and manganese particles are washed out of the filters in a process called backwash. This backwash water is then treated with a polymer to thicken the sludge and reclaim the clean water through the treatment plant. The thickened sludge is then stored on site and routinely taken to the local wastewater treatment facilities for further disposal.

Upon leaving the filters, the processed water is then treated with additional bleach (sodium hypochlorite) for disinfection and fluoride for healthy teeth. This is all in accordance with Minnesota Department of Health recommendations. A phosphate additive is then added that helps reduce the amount of copper absorbed from your home's plumbing.

All water treatment processes are monitored by Veolia Water's state-certified water operators. An advanced alarm system monitors processes after-hours, as well, and pages staff that are on call 24/7 to respond and correct problems.



New reclaim system (plate settler and polymer feed system)



Photo from top of plate settler where backwash sludge is being settled/thickened



Close-up of plate settler



New filter room / piping (from catwalk above)

Continuing Our Commitment

Once again we proudly present our annual water quality report. This edition covers all testing completed from January 1 through December 31, 2006. We are pleased to tell you that our compliance with all state and federal drinking water laws remains exemplary. As in the past, we are committed to delivering the best quality drinking water. To that end, we remain vigilant in meeting the challenges of source water protection, water conservation, and community education while continuing to serve the needs of all of our water users.



We have some exciting projects underway this year to tell you about. The most exciting is that our water utility is pioneering the way for a unique water storage method that will be the first of its kind in Minnesota. It is called aquifer storage and recovery (ASR) and is designed meet peak water demands in the summer without

the need for additional treatment plants to be constructed. This keeps costs down for you, the customer. Be sure to read the special section later in this report about this unique process.



Source Water Assessment

Congress requires that states prepare source water assessments for all public water supply systems. The Joint Powers Water Board's Source Water Assessment was completed by the MN Department of Health in March 2003 and contains the following:

1. A description of the source of drinking water and the area that provides water to the wells.
2. A determination of the susceptibility of the wells to potential contaminant sources.
3. The drinking water contaminants of concern (if any) to anyone using the source of drinking water.

The Source Water Assessment concluded that the Joint Powers Water Board's source water susceptibility is low. This means that the source of drinking water is covered by one or more layers of fine-grained material that probably protect it from potential sources of contamination. Additionally, the Source Water Assessment determined that none of the contaminants regulated under the federal Safe Drinking Water Act for this public water supply system have been detected in the source water. A listing of these contaminants can be found at www.epa.gov/safewater.

Customers may get a copy of the completed assessment at the local utility office. It is also available on the Internet through the MN Department of Health.



Community Participation

You are invited to participate in our regular board meetings and voice your concerns or simply learn about your drinking water system. We meet the fourth Monday of each month at the Joint Powers Water Treatment Facility Board Room. It is located at 11100 50th Street NE, Albertville. Meetings begin at 6:00 p.m.

Contact Us

For more information about this report, or for any questions relating to your drinking water, please call Matt Poythress, Facility Manager, or Kelly Browning, Project Manager, at (763) 497-3611.

For After-Hours Emergencies: The Cities of St. Michael, Hanover and Albertville (served by Veolia Water) (612) 880-1162.

Where Does My Water Come From?

All water delivered to Albertville, Hanover, and St. Michael residents is groundwater. Seven wells, ranging in depth from 240 to 480 feet, draw water from the Mt. Simon, Ironton Galesville, and Quaternary Buried Artesian Aquifers. The Mt. Simon and the Ironton Galesville are bedrock aquifers, while the Quaternary Aquifer is in the shallower deposits left behind by the glaciers of the last Ice Age.

Important Health Information

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised 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 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.





Conserve and Save Money

Sprinkling Restrictions for 2007

Water sprinkling restrictions are mandatory May 1 through September 30 of each year.

- ODD addresses may water on ODD days only.
- EVEN addresses may water on EVEN days only.
- The day **BEGINS AT MIDNIGHT** and **ENDS AT MIDNIGHT**.
- You may not sprinkle between 10 a.m. and 7 p.m.

Watering Tips to Save You Time and Money

- Automatic Sprinklers should have a timer and a moisture sensor.
- Have your sprinkler heads adjusted so that they don't water the sidewalks, driveway, or house.
- Water only when the grass shows signs of stress. (Grass that is under stress doesn't spring back after you step on it.)
- Watering a little heavier and less frequently will allow roots to grow deeper, and they will be more resilient and less susceptible to drier conditions.
- If you do not have an automatic sprinkler, you can purchase a hose timer for very little money at the local hardware store.
- Please don't sprinkle in the rain.
- If you can, always water during the night hours; there is less wind, less evaporation, better soaking down to grow deeper roots.
- Delay starting watering in the spring to allow the roots to grow deeper.
- Keep the grass longer; it will hold water better and dry out slower.
- Let the lawn go dormant in dry weather; it will turn green when it gets wet again.

Thank you for your cooperation and efforts to be a smart consumer! Please call the Water Department Office at (763) 497-3611 if you have any questions.

For Example:

You live at 123 Sunflower Lane: You may sprinkle on May 17 (or any odd-numbered date), beginning at midnight and up until 10 a.m. If you prefer to water in the evening, you may also sprinkle on May 17 from 7 p.m. until midnight.

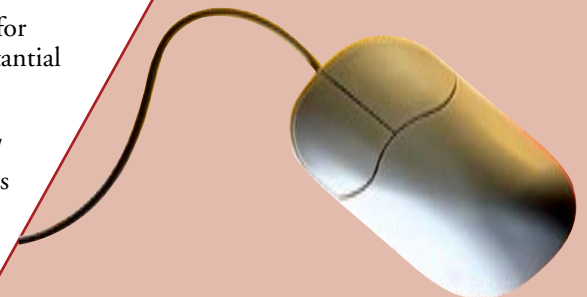
- New sod and seed is exempt from watering restrictions for 60 days only. To claim this exemption, you must notify the Water Department at (763) 497-3611 as soon as possible.
- Children can run in the sprinkler at any time, but please do not leave the sprinkler running or unattended.
- A violation will cost \$50 the first time and goes up by \$25 for each additional violation.



Information on the Internet

The U.S. EPA Office of Water (www.epa.gov/watrhome) and the Centers for Disease Control and Prevention (www.cdc.gov) Web sites provide a substantial amount of information on many issues relating to water resources, water conservation, and public health. Also, the Minnesota Department of Health, Drinking Water Protection Program, has a Web site (www.health.state.mn.us/divs/eh/water) that provides complete and current information on water issues in Minnesota, including valuable information about our watershed.

You may also find valuable information at the Minnesota Rural Water Web site at www.mrwa.com, and of course our own Web site at www.jointpowerswaterboard.org.



Sampling Results

During the past year we have taken hundreds of water samples in order to determine the presence of any radioactive, biological, inorganic, volatile organic or synthetic organic contaminants. The table below shows only those contaminants that were detected in the water. Although all of the substances listed here are under the Maximum Contaminant Level (MCL), we feel it is important that you know exactly what was detected and how much of the substance was present in the water.

The state allows us to monitor for certain substances less 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
Barium (ppm)	2005	2	2	0.24	NA	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Combined Radium (pCi/L)	2002	5.4	0	1.87	NA	No	Erosion of natural deposits
Fluoride (ppm)	2006	4	4	1.33	1.2–1.5	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Haloacetic Acids [HAA] (ppb)	2006	60	NA	9.6	NA	No	By-product of drinking water disinfection
TTHMs [Total Trihalomethanes] (ppb)	2006	80	NA	17.8	NA	No	By-product of drinking water chlorination

Tap water samples were collected from 30 sample sites throughout the community

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	ACTION LEVEL	MCLG	AMOUNT DETECTED (90TH% TILE)	SITES ABOVE ACTION LEVEL	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2006	1.3	1.3	1.25	1	No	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives
Lead (ppb)	2006	15	0	3	0	No	Corrosion of household plumbing systems; Erosion of natural deposits

UNREGULATED SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	TYPICAL SOURCE
Sodium (ppm)	2005	9.7	NA	Erosion of natural deposits
Sulfate (ppm)	2005	7.5	NA	Erosion of natural deposits

Table Definitions

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

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).



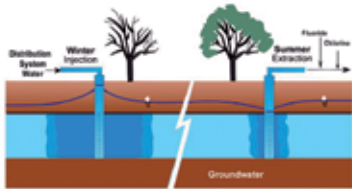
Radon

Radon is a radioactive gas that is naturally occurring in some groundwater. It poses a lung cancer risk when gas is released from water into air (as occurs during showering, bathing, or washing dishes or clothes) and a stomach cancer risk when it is ingested. Water samples taken in 2003 indicated a radon concentration of 280 picocuries per liter (pCi/L). Because radon in indoor air poses a much greater health risk than radon in drinking water, an Alternative Maximum Contaminant Level (AMCL) of 4,000 pCi/L may apply in states that have adopted an Indoor Air Program, which compels citizens, homeowners, schools, and communities to reduce the radon threat from indoor air. For states without such a program, the Maximum Contaminant Level (MCL) of 300 pCi/L may apply. Minnesota plans to adopt an Indoor Air Program once the Radon Rule is finalized.

The Joint Powers Water Utility is a Pioneer in Minnesota

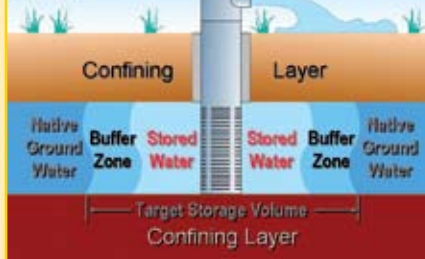
The Joint Powers Water Board is currently in the process of constructing what is referred to as aquifer storage and recovery (ASR), and it is the first such system in Minnesota. The primary purpose for us is to provide adequate storage capacity of treated water without the need to build additional treatment plants and water towers. We will take already treated/filtered water from the distribution system during the slower winter months, pump it into the ground to be pumped back out during the summer peak water demands. This results in a tremendous cost savings to you, the customer.

Definition of ASR

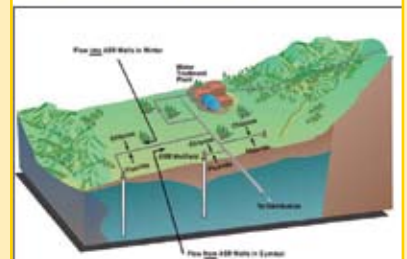


ASR involves storing treated drinking water underground in times when water is available for later withdrawal to meet peak, drought, or emergency demands

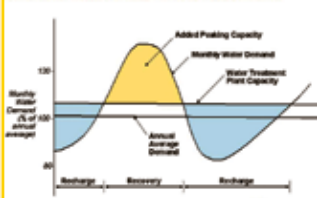
ASR Wells Can Provide an Alternative Water Supply



Definition of ASR



Seasonal fluctuations in water demand provides opportunity for ASR operations



ASR Applications

- Seasonal, long-term or emergency storage
- Maintain distribution system flow/pressure
- Defer expansion of water treatment facilities
- Restore groundwater levels
- Disinfection byproduct reduction
- Control saltwater intrusion, contaminants
- Reduce ecosystem effects of river diversions
- Improve water quality

Applications of ASR

- Regional Water Supply
- Fixing distribution system inadequacies
- Coping with growth and aging

Regional Water Supply

