



ANNUAL  
WATER  
QUALITY  
REPORT

*Water testing performed in 2008*



JOINT POWERS WATER BOARD  
ALEERTVILLE • HANOVER • ST. MICHAEL



PWS ID#: 1860024

## Meeting the Challenge

We are once again proud to present to you our annual water quality report. This edition covers all testing completed from January 1 through December 31, 2008. Over the years, we have dedicated ourselves to producing drinking water that meets all state and federal drinking water standards. We continually strive to adopt new and better methods for delivering the best quality drinking water to you. As new challenges to drinking water safety emerge, we remain vigilant in meeting the challenges of source water protection, water conservation, and community education while continuing to serve the needs of all our water users.

In these difficult economic times, collectively, we face the added challenge of providing safe drinking water at an affordable price. As costs of materials and energy all increase, it becomes difficult to keep costs down for those that are struggling with unemployment and foreclosure.

At the beginning of 2009, St. Michael and Hanover residents that are on the electronic radio read system have transitioned to monthly billing. Albertville is anticipated to make this same transition near the end of 2009. Monthly



billing is an advantage for several reasons. One is that it is much easier for the customer to budget when on a limited or reduced income. Auto-pay from one's checking or savings account is another option that is offered for those that don't want the hassle of mailing monthly payments in, and the smaller, more consistent monthly bill makes auto-pay more practical and saves everyone money. Monthly billing also makes it much easier for both the customer and the water department to identify excessive water usage that can indicate a leak or some other problem.

In addition to these administrative changes, we also continually work toward operational efficiencies to keep costs down. Our newest project, Aquifer Storage and Recovery (ASR), is another creative way to utilize the capacity of our water system in the most effective way. You can read in more detail about this project later in this report.

Please share with us your thoughts about the information in this report. After all, well-informed customers are our best allies.

## Community Participation

You are invited to participate in our regular board meetings and to 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, and meetings begin at 6:00 p.m.

## 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 Aquifer. 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.

## 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 concluded that source water susceptibility was determined to be 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](http://www.epa.gov/safewater).

Customers may get a copy of the completed assessment at the local Water Dept. Office. It is also available on the Internet at [www.health.state.mn.us/divs/eh/water/swp/swa](http://www.health.state.mn.us/divs/eh/water/swp/swa).

## Water Conservation

You can play a role in conserving water and save yourself money in the process by becoming conscious of the amount of water your household is using and by looking for ways to use less whenever you can. It is not hard to conserve water. Here are a few tips:

- Automatic dishwashers use 15 gallons for every cycle, regardless of how many dishes are loaded. So get a run for your money and load it to capacity.
- Turn off the tap when brushing your teeth.
- Check every faucet in your home for leaks. Just a slow drip can waste 15 to 20 gallons a day. Fix it and you can save almost 6,000 gallons per year.
- Check your toilets for leaks by putting a few drops of food coloring in the tank. Watch for a few minutes to see if the color shows up in the bowl. It is not uncommon to lose up to 100 gallons a day from an invisible toilet leak. Fix it and you save more than 30,000 gallons a year.
- Use your water meter to detect hidden leaks. Simply turn off all taps and water using appliances. Then check the meter after 15 minutes. If it moved, you have a leak.

## Contact us

For more information about this report, or for any questions relating to your drinking water, please call Kelly Daleiden, 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.

## 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, which 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.

## 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 St. Michael Wastewater Treatment Facility 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.



## What Makes Water Hard?

If substantial amounts of either calcium or magnesium, both nontoxic minerals, are present in drinking water, the water is said to be hard. Hard water does not dissolve soap readily, so making lather for washing and cleaning is difficult. Conversely, water containing little calcium or magnesium is called soft water. Our water supply is considered hard, and most homeowners prefer to install water softening systems. If you have one, be sure to set the dial to about 19 or 20 grains per gallon. Our water contains about 22 grains per gallon, but oversoftening can result in a corrosive water that will etch glassware in the dishwasher; it may also cause the water to feel slimy when bathing.

## Tap vs. Bottled

Thanks in part to aggressive marketing, the bottled water industry has successfully convinced us all that water purchased in bottles is a healthier alternative to tap water. However, according to a four-year study conducted by the Natural Resources Defense Council, bottled water is not necessarily cleaner or safer than most tap water. In fact, about 25 percent of bottled water is actually just bottled tap water (40 percent according to government estimates).

The Food and Drug Administration is responsible for regulating bottled water, but these rules allow for less rigorous testing and purity standards than those required by the U.S. EPA for community tap water. For instance, the high mineral content of some bottled waters makes them unsuitable for babies and young

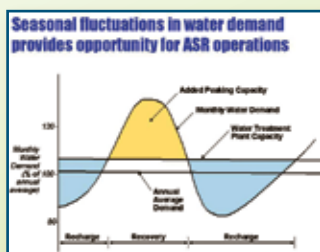
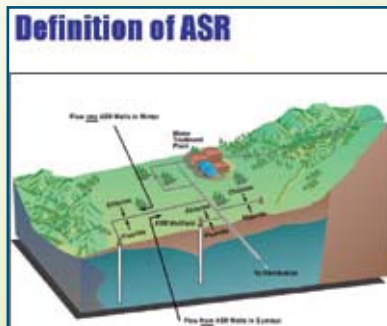
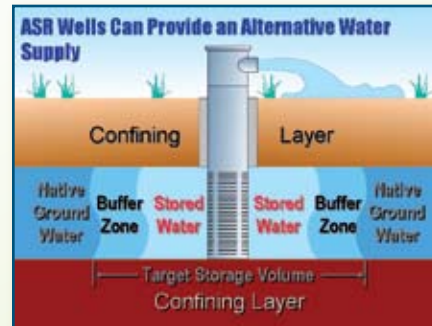
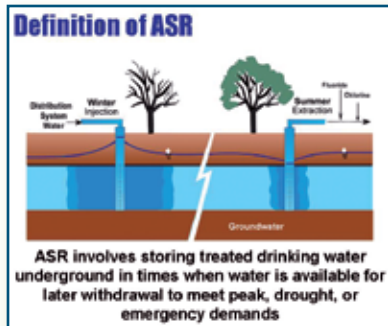
children. Further, the FDA completely exempts bottled water that's packaged and sold within the same state, which accounts for about 70 percent of all bottled water sold in the United States.

People spend 10,000 times more per gallon for bottled water than they typically do for tap water. If you get your recommended eight glasses a day from bottled water, you could spend up to \$1,400 annually. The same amount of tap water would cost about 49 cents. Even if you installed a filter device on your tap, your annual expenditure would be far less than what you'd pay for bottled water.

For a detailed discussion on the NRDC study results, check out their Web site at [www.nrdc.org/water/drinking/bw/exesum.asp](http://www.nrdc.org/water/drinking/bw/exesum.asp).

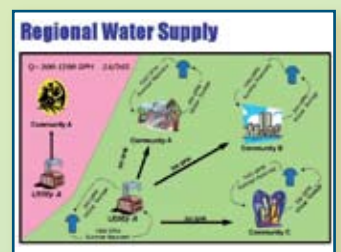
# Aquifer Storage and Recovery (ASR)

The Joint Powers Water Board recently completed construction of 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, because we will not have to construct more treatment plants and water towers to simply provide water for lawn irrigation in the summer. For a detailed pictorial of how ASR works, please visit our Web site at [www.jointwaterboard.com](http://www.jointwaterboard.com) and click on "Projects."



- 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



## Conserve and Save Money

*Sprinkling Restrictions for 2009*

**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 ANY day between the hours of 10 a.m. and 7 p.m.

## 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 much over time. In these cases, the most recent sample data is 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
Alpha Emitters (pCi/L)	2007	15.4	0	5	NA	No	Erosion of natural deposits
Barium (ppm)	2005	2	2	0.24	NA	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Chlorine (ppm)	2008	[4]	[4]	1.23 Average	0.4–2.5	No	Water additive used to control microbes
Combined Radium (pCi/L)	2007	5.4	0	3.6	NA	No	Erosion of natural deposits
Fluoride <sup>1</sup> (ppm)	2008	4	4	1.3 Average	1.2–1.4	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Haloacetic Acids [HAA] (ppb)	2008	60	NA	12.3	NA	No	By-product of drinking water disinfection
TTHMs [Total Trihalomethanes] (ppb)	2008	80	NA	45.7	NA	No	By-product of drinking water chlorination
Total Coliform Bacteria <sup>2</sup> (# positive samples)	2008	1 positive monthly sample	0	2	NA	No	Naturally present in the environment

Tap water samples were collected for lead and copper analyses from sample sites throughout the community (Lead was not detected at the 90th percentile)

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AL	MCLG	AMOUNT DETECTED (90TH%TILE)	SITES ABOVE AL/TOTAL SITES	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2007	1.3	1.3	1.03	1/30	No	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives

### UNREGULATED SUBSTANCES<sup>3</sup>

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

<sup>1</sup>The State of MN requires ALL municipal water systems to add fluoride to the drinking water to promote strong teeth.

<sup>2</sup>Follow-up sampling showed no contamination present. There were two separate positive samples on August 5, 2008, but all follow-up sampling came back negative.

<sup>3</sup>Monitoring for unregulated contaminants as required by the U.S. EPA rules (40 CFR 141.40) was conducted in 2008. Results of the unregulated contaminant monitoring are available upon request from Cindy Swanson, MN Department of Health, at (651) 201-4656.

## 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).

## Lead and Drinking Water

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 Joint Powers Water Board Utility 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 or at [www.epa.gov/safewater/lead](http://www.epa.gov/safewater/lead).