

*Presented By*



*Annual*  
**WATER  
QUALITY  
REPORT**

*Reporting Year 2011*

PWS ID#: 1860024

## Meeting the Challenge

We are once again proud to present our annual water quality report covering all testing performed between January 1 and December 31, 2011. Over the years, we have dedicated ourselves 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 you. As new challenges to drinking water safety emerge, we remain vigilant in meeting the goals of source water protection, water conservation, and community education while continuing to serve the needs of all our water users.

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

## 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 Act for this public water supply system has 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 Joint Powers Water Treatment Plant 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).

## Community Participation

You are invited to attend and participate at our regularly scheduled Water Board meetings where you have an opportunity to hear about the water utility's current projects, as well as to voice your questions or concerns about your drinking water. We meet the fourth Monday of each month beginning at 6:00 p.m. at the Water Treatment Plant Board Room, 11100 50th Street NE, Albertville, MN.

## QUESTIONS?

For more information about this report, or for any questions relating to your drinking water, please call Andy Ahles, Water Department Manager, or Kelly Daleiden, Utility Manager, at (763) 497-3611.

## 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 in late 2000 and underwent an expansion in 2005-2006 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 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 some 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, specially coated sand, and anthracite coal that trap the mineral particles. The sand is 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/pink color to show up frequently 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 treatment is all in accordance with MN Dept. of Health standards. A phosphate additive is now added that helps reduce the amount of copper and lead (found in older homes) absorbed from your home's plumbing.



All water treatment processes are monitored by state-certified 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.

If you are interested in a tour of the Water Treatment Plant, we would love to have you visit! Just call our Office at (763) 497-3611 to schedule a guided tour.

## 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 or <http://water.epa.gov/drink/hotline>.

### Aquifer Storage and Recovery (ASR)

The Joint Powers has been working on this unique project, the first of its kind in Minnesota, for many years now. We are proud to announce that we have finally received our final permit from the U.S. EPA and Variance from the MN Dept. of Health to begin full-scale operation in the Spring of 2012.

The primary purpose of Aquifer Storage and Recovery (ASR) is for us to provide adequate storage capacity of treated water without the need to build additional treatment plants and water towers. We take already treated and filtered water from the distribution system during the slower winter months and pump it into the aquifer, to be pumped back out during the summer peak water demands. This storage results in a tremendous cost savings to you, the customer, because we will not have to construct more treatment plants and water towers simply to provide water for lawn irrigation in the summer. For a detailed pictorial of how ASR works, please visit our website at [www.jointwaterboard.com](http://www.jointwaterboard.com) and click on “projects”.

## 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.

## Where Does My Water Come From?

All water delivered to Albertville, Hanover, and St. Michael residents is groundwater. Eight wells, ranging in depth from 240 to 504 feet, draw water from the Mt. Simon, Ironton Galesville, and Quaternary Buried Artesian Aquifers.

The Mt. Simon and Ironton Galesville are bedrock aquifers, while the Quaternary Aquifer is in the shallower deposits left behind by the glaciers of the last Ice Age.



## Variations and Exemptions

The Joint Powers Water Board (JPWB) was issued a Variance from MN Rules, Chapter 4725, for full-scale implementation of Aquifer Storage and Recovery (ASR) at Well #9. The Variance was issued to allow Joint Powers to annually recharge the Mt. Simon aquifer with up to 100 million gallons of water taken from the Joint Powers Water Board (JPWB) distribution system and injecting it at a rate of approximately 310 gallons per minute into Well #9. The Variance also allows the JPWB, during peak water demand (summer months), to annually recover up to 90 million gallons of ASR water for discharge directly into the distribution system. The MN Dept. of Health previously approved variances for three progressively larger ASR pilot tests at the JPWB Well Number 9, referred to as Pilot Test Cycles 1, 2, and 3. Monitoring is done at Well Number 9 and at a remote monitoring well. Issuing the Variance includes specific requirements for significant water monitoring and reporting, and recovered water must also meet established State and Federal Drinking Water Standards. A complete written copy of this Variance may be obtained from the Joint Powers Water Board Office. There is no expiration date for this Variance, but it may be revoked or modified if future test results so indicate.

## 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 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).

## 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 tables below show only those contaminants that were detected in the water. 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<br>(UNIT OF MEASURE)      | YEAR<br>SAMPLED | MCL<br>[MRDL] | MCLG<br>[MRDLG] | AMOUNT<br>DETECTED | RANGE<br>LOW-HIGH | VIOLATION | TYPICAL SOURCE   |
|-------------------------------------|-----------------|---------------|-----------------|--------------------|-------------------|-----------|--|
| Alpha Emitters (pCi/L)              | 2010            | 15            | 0               | 3.9                | NA                | No        | Erosion of natural deposits  |
| Chlorine (ppm)                      | 2011            | [4]           | [4]             | 1.28               | 0.9–1.7           | No        | Water additive used to control microbes  |
| Combined Radium (pCi/L)             | 2010            | 5             | 0               | 1.6                | NA                | No        | Erosion of natural deposits  |
| Fluoride (ppm)                      | 2011            | 4             | 4               | 1.2                | 1.1–1.2           | No        | Erosion of natural deposits; Water additive that promotes strong teeth; Discharge from fertilizer and aluminum factories |
| Haloacetic Acids [HAAs] (ppb)       | 2011            | 60            | NA              | 26.7               | 26–26.7           | No        | By-product of drinking water disinfection  |
| TTHMs [Total Trihalomethanes] (ppb) | 2011            | 80            | NA              | 79.7               | 45.4–79.7         | No        | By-product of drinking water disinfection  |

Tap water samples were collected for lead and copper analyses from sample sites throughout the community

| SUBSTANCE<br>(UNIT OF MEASURE) | YEAR<br>SAMPLED | AL  | MCLG | AMOUNT<br>DETECTED<br>(90TH%TILE) | SITES<br>ABOVE AL/<br>TOTAL SITES | VIOLATION | TYPICAL SOURCE   |
|--------------------------------|-----------------|-----|------|-----------------------------------|-----------------------------------|-----------|--|
| Copper (ppm)                   | 2011            | 1.3 | 1.3  | 1.19                              | 0/30                              | No        | Corrosion of household plumbing systems; Erosion of natural deposits |
| Lead (ppb)                     | 2011            | 15  | 0    | 1.2                               | 0/30                              | No        | Corrosion of household plumbing systems; Erosion of natural deposits |

### UNREGULATED SUBSTANCES

| SUBSTANCE<br>(UNIT OF MEASURE) | YEAR<br>SAMPLED | AMOUNT<br>DETECTED | RANGE<br>LOW-HIGH | TYPICAL SOURCE              |
|--------------------------------|-----------------|--------------------|-------------------|-----------------------------|
| Sodium (ppm)                   | 2009            | 10                 | NA                | Erosion of natural deposits |
| Sulfate (ppm)                  | 2009            | 7.94               | NA                | Erosion of natural deposits |

## Definitions

**AL (Action Level):** The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that 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).