What's In My Water?

We are pleased to report that during the past year, the water delivered to your home or business complied with, or was better than, all state and federal drinking water requirements. Each year we analyze over 50,000 water samples for bacteria, turbidity, inorganic contaminants, lead and copper, nitrate, volatile organic contaminants, total trihalomethanes, and synthetic inorganic contaminants. For your information, we have compiled a list in the table below showing what substances were detected in our drinking water. Although all of the substances listed below are under the Maximum Contaminant Level (MCL) set by U.S. EPA, we feel it is important that you know exactly what was detected and how much of the substance was present in the water. None of the other substances regulated by EPA were detected in our water.

Alpena's water use during the year 2003:
- 771.07 million gallons, yearly total.
- 2.11 million gallons, average day.
- 3.52 million gallons, maximum day.

REGULATED SUBSTANCES: 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.

SUBSTANCE (UNITS)	YEAR SAMPLED	DATE SAMPLED	MCL	MCLG	AVERAGE DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Barium (ppm)	2003	6/17/03	2	2	0.02	NA	No	Discharge of drilling wastes; Discharge from metal refineries Erosion of natural deposits.
Fluoride (ppm)	2003	6/10/03	4	4	1.1	NA	No	Erosion of natural deposits, Water additive which promotes strong teeth, discharge from fertilizer & aluminum factories.
TTHMs (ppb)	2003	4/quarter	80	0	23.9	9.8-37.2	No	By-product of drinking water chlorination.
Turbidity (NTU)	2003	daily	TT	NA	0.14	.04-0.14	No	Soil runoff.
Alpha Emitters (pCi/l)	2002	7/29/02	15	0	2.74	NA	No	Erosion of natural deposits.
Total Organic Carbon	2003	1/month	Greater than 1.0		1.43	1.00-2.17	No	Naturally present in the environment.

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

SUBSTANCE (UNITS)	YEAR SAMPLED	DATE SAMPLED	MCL	MCLG	AVERAGE DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Sodium (ppm)	2003	6/10/03	NA	NA	10	NA	No	Erosion of natural deposits.
Sulfate (ppm)	2003	6/10/03	NA	NA	42	NA	No	Erosion of natural deposits.
Haloacetic Acid (ppb)	2003	4/quarter	NA	NA	19	6-21	No	By-product of drinking water chlorination.
Chloroform (ppb)	2003	4/quarter	NA	NA	19	6.9-32.8	No	By-product of drinking water chlorination.
Dichlorobromo-methane (ppb)	2003	4/quarter	NA	NA	4.3	2.4-7.6	No	By-product of drinking water chlorination.
Chlorodibromo-methane (ppb)	2003	4/quarter	NA	NA	0.78	0.5-1.4	No	By-product of drinking water chlorination.
Perchlorate (ppb)	2003	1/quarter	NA	NA	18	0.0-62	No	Fertilizer/solid rocket fuel.

DISTRIBUTION SYSTEM SUBSTANCES: Lead and copper samples were collected from taps at 30 high-risk homes. These levels found are not found in the City's water and demonstrate levels found in the plumbing of the household.

SUBSTANCE (UNITS)	YEAR SAMPLED	MONTHS SAMPLED	ACTION LEVEL	MCLG	AMOUNT DETECTED	SITES ABOVE AL	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2002	July-August	1.3	1.3	0.258	0	No	Corrosion of household plumbing.
Lead (ppb)	2002	July-August	15	0	2	0	No	Corrosion of household plumbing.

TABLE DEFINITIONS

MCL - Maximum Contaminant Level: The highest level of a contaminant that is allowed in drinking water. MCL's are set as close to the MCLG's 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. MCLG's allow for a margin of safety.

ppm-Parts per million: One part per million (or milligrams per liter) is equivalent to one penny in $10,000.

ppb-Parts per billion: One part per billion (or micrograms per liter) is equivalent to one penny in $10,000,000.

Turbidity: Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indictor of the effectiveness of our filtration system. It is measured in NTU'S.

NTU - Nephelometric Turbidity Units: Measurement of the clarity, or turbidity, of water.

TT-Treatment Technique: A required process intended to reduce the level of a contaminant in drinking water.

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

NA - Not Applicable.

Pci/L - Picocuries per Liter: A measure of the radioactivity in water.

TTHMs—Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous system, and may have an increased risk of getting cancer.

Substances Expected to be in Drinking Water

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. 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 U.S.EPA's Safe Drinking Water Hotline (1-800-426-4791).

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, and wildlife;

Pesticides and Herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses;

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;

Organic Chemical Contaminants, including synthetic and volatile organic chemicals, which are byproducts of industrial processes and petroleum production, and can also 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.

Total Organic Carbon (TOC) removal ratio is calculated as the ratio between the actual TOC removal and the TOC removal requirements. The ratios shown are the average of the ratios and the range of monthly ratios for the 12 months covered by this report. The TOC removal was measured each month and the system met all TOC removal requirements set by the state.

Drinking Water and People with Weakened Immune Systems

Some people may be more vulnerable to contaminants in drinking water that 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 and other microbial contaminants are available from the Safe Drinking Water Hotline (800-426-4791)

DRINKING WATER IMPROVEMENT PROJECTS

In order to provide exceptional service to our customers, we continuously strive to maintain our existing facilities. Equipment upgrade needs are routinely evaluated and budgeted as required. Examples of these projects appear in the pictures that follow:

The Safe Drinking Water Act requires smooth water flow through the filters. Smooth water flow allows the filter to perform at its best trapping all microscope particles possible.

The filter flow controls on filters 1-4 were replaced with new controllers to allow the smooth flow necessary to meet the requirements of the standards.

We use air pressure to operate the valve and control systems. Our compressors were installed in 1965 and were showing serious signs of age. A new compressor and air dryer system was installed during 2003.


Old mechanical flow controls


New electronic flow controls


Old system


New system

INFORMATION ON THE INTERNET

Water quality reports going back to 1998 can be found on the City of Alpena web site (www.alpena.mi.us). In addition, the EPA Office of Water (www.epa.gov/watrhome) has a web site provides a substantial amount of information on many issues relating to water resources, water conservation and public health.

A web camera view of Thunder Bay and the latest temperature, wind speed and direction can be found at www.glerl.noaa.gov/metdata/apn/

I hope you enjoyed reading this latest water quality report, *enjoy the summer*. *Jplume*

Unregulated Contaminant Monitoring Regulation:

The Safe Drinking Water Act requires community water systems that serve more than 10,000 persons to monitor their water for the presence of unregulated contaminants. The purpose of this monitoring is to collect data to support the U.S. Environmental Protection Agency Administrator's decisions regarding whether or not to a regulate contaminant such as those on the Drinking Water Contaminant Candidate List.

During 2003 Alpena tested its water for the presence of contaminants on this candidate list. Only one of the chemicals was found. This chemical is perchlorate. The utility is actively investigating potential sources of this chemical in the environment.

Water Conservation Tips

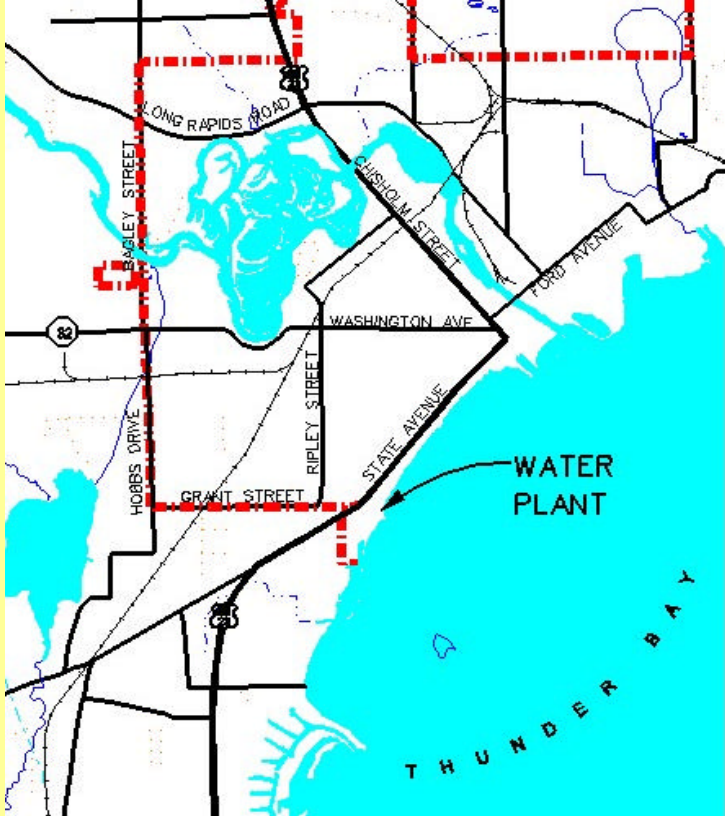
Water conservation measures are an important first step in protecting our water supply. Such measures preserve our water supply and save you money by reducing your water and sewer usage. Here are a few suggestions:

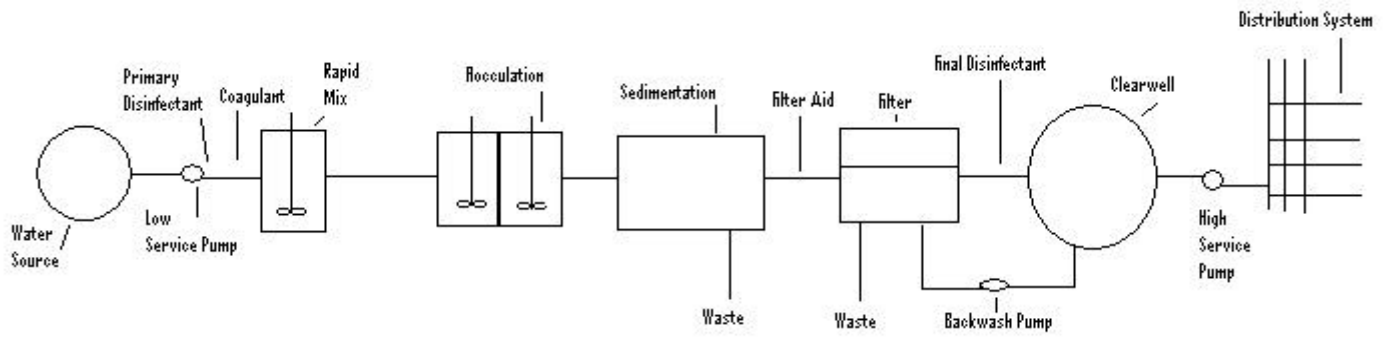
Conservation measures you can use inside your home include:

- Fix leaking faucets, pipes, toilets, etc.
- Install water-saving devices on faucets, in toilets and appliances.
- Replace old fixtures with water saving models (this could reduce water consumption by nearly one-half!).
- Wash only full loads of laundry.
- Take shorter showers.
- Do not let the water run while shaving, washing, brushing teeth, or cleaning fruits and vegetables.
- Soak dishes before washing.
- Run the dishwasher only when full.
- Water the lawn and garden in the early morning or evening.

Where does our water come from?

Our fresh water source is **surface water from Thunder Bay (Lake Huron).** This source has been utilized in Alpena since 1905, sample data shows that it is of high quality. Over the last 25 years, state and federal environmental regulations have progressively become more stringent resulting in significant improvements in Great Lakes water quality. Efforts to protect our fresh water source include a "Source Water Assessment" conducted by the Michigan Department of Environmental Quality. The assessment identifies sources of pollution that may have a negative impact on the quality of our source water. The assessment is in the preliminary stage and copies are available upon request. Customer comment on the information found in the assessment is welcome. Contact your water production plant for information of how to receive your copy (356-0757).





HOW IS MY WATER TREATED AND PURFIED?

The treatment process consists of a series of steps. Raw water is drawn from Thunder Bay (Lake Huron) and pumped to a mixing tank where chlorine, alum and polymer are added. The addition of these chemicals causes small particles to adhere to one another until they are heavy enough to settle in a basin from which sediment is removed. After settling, filter aid is added, if necessary, for turbidity removal (turbidity is a common measure of the clarity of water). Also added at this point are fluoride (which helps prevent tooth decay) and phosphate (which helps prevent corrosion in water system). The water is then filtered through layers of fine carbon and silicate sand. As smaller, suspended particles are removed, turbidity disappears and clear water emerges. Chlorine is added again at this point as a final disinfectant. We carefully monitor the amount of chlorine, adding the lowest quantity necessary to protect the safety of your water without comprising taste. The water is then pumped through the distribution piping to sanitized reservoirs and water towers, and into your home or business.

ANNUAL WATER QUALITY REPORT

ALPENA WATER TREATMENT PLANT
1300 STATE AVE.
ALPENA, MICH. 49707

We are pleased to provide you with our fifth Annual Water Quality Report. Included with this report are details about where your water comes from, what it contains, and how it compares to Environmental Protection Agency (EPA) and State of Michigan standards. The utility welcomes this annual reporting requirement and views it as an opportunity to inform our customers about the high quality drinking water being supplied to them.

Alpena's water meets, or is better than, state and federal standards. No violations of water quality standards were experienced during 2003.

If you have any questions about the contents of this report or have suggestions on making it more understandable, please contact **Jerry Plume (Water Plant Superintendent) at 356-0757.**

Working Hard for You!

Under the Safe Drinking Water Act (SDWA), the United States Environmental Protection Agency (USEPA) sets the national limits for hundreds of substances in drinking water and also specifies treatment methods that water systems must use to remove these substances. Similarly, the United States Food and Drug Administration (USFDA) regulations establish limits for contaminants in bottled water, which must provide the same protection for public health. Each utility continually monitors the water produced for these substances and reports directly to their state regulatory agency, which in turn reports to the EPA, if any are detected in the drinking water. EPA uses this data to ensure that consumers are receiving clean water and verify that states are enforcing the laws that regulate drinking water.

Our Water Quality Report conforms to the federal regulation under the SDWA requiring water utilities to provide detailed water quality information to each of their customers annually. We are committed to providing you with this information about your water supply, because customers who are well informed are our best allies in supporting improvements necessary to maintain our ability to provide the highest quality drinking water.

Customers are invited to contact our utility at any time with questions or concerns. Individual and group tours of our Water Treatment Plant can be arranged by calling (989) 356-0757. Also, please join us at our annual Open Hours during National Drinking Water Week in early May.

Our water utility customers should consider themselves to be investor-owners of the system. The utility is managed as an enterprise fund and all operation, maintenance, and replacement expenditures are financed entirely by user fees. Consequently, all customer inquiries, requests, or suggestions are welcome and encouraged by the utility. ***The Alpena Municipal Council is responsible for overseeing the Alpena Water Utility. The City Council meets on the first and third Monday of every month.*** Utility correspondence may be directed to the following personnel:

Jerry Plume, Earth Tech Plant Manager
phone: 356-0757 email- jerry.plume@earthtech.com
Mike Glowinski, Earth Tech Utility Manager
phone:354-4891 email-michael.glowinski@earthtech.com
Alan L. Bakalarski, City Manager
phone: 354-4158 email - alb@alpena.mi.us
Rich Sullenger, City Engineer
phone: 354-4158 email - richs@alpena.mi.us

QUESTIONS

Call U.S. EPA's Safe Drinking Water Hotline at 1-800-426-4791