

2011
CITY OF ALGONAC
WATER QUALITY REPORT

*Algonac Water Filtration Plant
1530 St. Clair River Drive
Algonac, MI 48001*

PWS ID#: MI0000110

Continuing Our Commitment

Once again we proudly present our annual water quality report. This edition covers all testing completed from January through December 2011. 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.

In November, we completed a full replacement of filter membranes that were originally installed during the water plant retro-fit of our membrane system. This retro-fit increased our capability of producing water to our community, lowered the cost of production of water, and continues to function well. We have substantially reduced our backwash amounts and chemicals used in the cleaning of our membranes, saving a substantial amount of money. Also accomplished in this retro-fit is the reduction of power necessary to operate the filtration plant, which also is a major cost cutting measure. All of these were done in order to provide you with the best water that we can, at an affordable cost.

The State performed a Source Water Assessment of our source water in 2004 to determine the susceptibility or the relative potential of contamination. The susceptibility rating is on a seven-tiered scale from “very low” to “very high”, based primarily on geologic sensitivity, water chemistry and containment sources. The susceptibility of our system is high, given land uses and potential contaminant sources. A copy of the report is on file.

Security of Our system

All of our lives have changed dramatically and our outlook on security has evolved since the tragic events of September 11, 2001. To this end, we want to ensure all of our customers and citizens of Algonac and Clay Township that security of our Water Filtration Plant and our distribution system is of utmost importance in our everyday operation. We have security alarms on all of our facilities and are constantly vigilant of

our system. We urge all of our citizens to be vigilant also and even overly cautious as to any suspicious occurrences or questionable persons claiming to be Water Department staff. Please, if in question, request identification of any person(s) claiming to be City personnel before allowing entrance to your home or business. If you have any questions or concerns in this matter, please feel free to call Mr. Mark Scott –water plant superintendent at 810-794-3281 or Mr. Doug Alexander -City Manager at 810-794-5611 and voice your concerns or questions. If you should see any suspicious activity, please do not hesitate to call the Algonac Police Department at (810)794-9772.

We want you to rest assured that we are doing everything in our power to provide the highest level of security for our system and your safety.

Working Hard For You

Under the Safe Drinking Water Act (SDWA), the U.S. EPA is responsible for setting national limits for hundreds of substances in drinking water, and also specifies various treatments that water systems must use to remove these substances. Each system continually monitors for these substances and reports to the U.S. EPA if detected in the drinking water. The U.S. EPA uses this data to ensure that consumers are receiving clean water.

This publication conforms to regulations under the SDWA requiring water utilities to provide detailed water quality information to their customers annually. We are committed to providing you with this information about your water supply because water customers who are well informed are our best allies in supporting improvements necessary to maintain the highest drinking water standards. Copies of this report can be obtained from City Hall and the Water Department. This report will not be mailed to individual customers. For more information about this report, or for any questions relating to your drinking water, please call Mr. Mark Scott, Superintendent at (810) 794-3281, or the City Manager (Doug Alexander) at (810) 794-5611.

Community Participation

You are invited to participate in our public forum and voice your concerns about your drinking water. Council meets the 1st and the 3rd Tuesday of each month beginning at 7:30 p.m. at City Hall, 805 St. Clair River Drive.

Where Does My Water Come From?

The City of Algonac Water Filtration Plant provides an excellent and abundant water supply to the citizens of Algonac and Clay Township. We are extremely fortunate to have at our disposal a superb water source known as the St. Clair River, which is considered part of the Great Lakes Water Source. This source is one of the most desirable and sought after water sources known in North America Today. Our treatment plant processes over 400 million gallons of clean drinking water to our community annually.

Special Health Information

Some people may be more vulnerable to contaminants in the drinking water than the general population. Immuno-compromised 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. EPA/CDC (Center 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.

Substances Expected To Be In Drinking Water

To ensure that tap water is safe to drink, the U.S. EPA prescribes regulations limiting the amount of certain substances in water provided by public water systems. The U.S. Food and Drug Administration (FDA) regulations establish limits for substances 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 and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs and wells. As water travels over the surface of land or through the ground, it can acquire naturally occurring minerals, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity. Substances that may be present in the 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 storm water runoff, including 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 storm water runoffs and residential uses;
- Organic Chemical Contaminants, including synthetic and volatile organic chemicals (VOC's), which are by products of industrial processes and petroleum production, and may also come from gas stations, urban storm water 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.

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 Michigan Department of Environmental Quality (MDEQ), has a Website (www.michigan.gov/deq) that provides complete and current information on water issues in our own state.

Naturally Occurring bacteria

The simple fact is that bacterial and other micro-organisms inhabit our world. They can be found all around us: in our food, on our skin, in our bodies, in the air, soil and water. Some are harmful to us and some are not. A coliform bacterium is common in the environment and is generally not harmful. 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 analyzed over 600 samples (over 50 per month) for coliform bacteria. In this time none of the samples analyzed came back positive for these bacteria. Federal regulations now require that public water resulting in a positive result 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 coliform to be present in drinking water in any concentration. Our tests indicated no fecal contamination is present in our drinking water.

Information on Lead and Copper

If present, elevated levels of lead can cause serious health problems, especially for pregnant women. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The Algonac Water Department 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 (<http://water.epa.gov/drink/info/lead/index.cfm>).

Water Conservation Tips

Water conservation measures are an important first step in protecting our water supply. Such measures not only save the supply of our source water, but can also save you money by reducing your water bill. Here are a few suggestions:

- Fixing leaks in faucets, pipes and toilets;

- Replace old fixtures, install water saving devices in faucets toilets etc.,
- Wash only Full loads of laundry
- Do not use the toilet for trash disposal
- Shorter showering
- Do not allow water to run while shaving or brushing teeth
- Soak dishes before washing
- Run dishwasher only when full

You can conserve outdoors as well:

- Water the lawn and garden in early morning or evening
- Use mulch around plants and shrubs
- Repair leaks in faucets and hoses
- Use water saving nozzles
- Use water from a bucket to wash your car-save the hose for rinsing

Information on additional ways to conserve water can be found at
<http://water.epa.gov/polwaste/nps/chap3.cfm>

Contamination from Cross Connections

Cross connections that could contaminate drinking water distribution lines are a major concern. A cross connection is formed at any point where a drinking water line connects to equipment (boilers), systems containing chemicals (air conditioning systems, sprinkler systems, irrigation systems, car washes) or water sources of questionable quality. Cross connection contamination can occur when the pressure in the equipment or system is greater than the pressure inside the drinking water line –causing backpressure. Contamination can also occur when the pressures in the drinking water lines drop due to fairly routine occurrences (main breaks, heavy water demand) causing contaminants to be sucked out from the equipment and into the drinking water line(back-siphon).

Outside water taps and garden hoses tend to be the most common sources of cross-connection contamination from the home. The garden hose creates a hazard when submerged in a swimming pool or when attached to a sprayer for weed killing. Garden hoses that are left on the ground may be contaminated by fertilizers, cesspools, or garden chemicals. Properly installed vacuum breakers will prevent any contaminants from entering the water system through a garden hose. (Screw on vacuum breakers for hose bibs can be purchased from any hardware store). Improperly installed valves in your toilet could also be a source of cross-connection contamination.

Community water supplies are continuously jeopardized by cross-connections unless appropriate valves (known as backflow prevention devices) are installed and maintained. We have surveyed all industrial and institutional facilities in the service area to make sure that all potential cross-connections are identified and eliminated or protected by a backflow prevention device.

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 exceeded) all State and Federal Drinking Water Standards. For your information, we have compiled a list in the table below showing what substances were detected in our drinking water during 2011. Although all of the substances listed below are under the Maximum Contaminant Level (MCL) set by the U.S. EPA, we feel it is important that you know exactly what was detected and in what amounts.

Table definitions

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

DIST (Distribution)

MCL (maximum contaminant level) The highest level of a contaminant that is allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

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 microbial contaminant reduction.

MRDLG (Maximum residual disinfectant level goal) The level of drinking water disinfectant below which there is no known or expected risk to health. MRDLG's do not reflect the benefits of the use of disinfectants to control microbial contaminants.

RAA Running Annual Average

N/A Not applicable.

ND Non detected

ppb – (part per billion) One part substance per 1 billion parts water.

ppm – (part per million) One part substance per 1 million parts water.

Water Quality Data

The table on the following page lists all the drinking water contaminants that we detected during the 2011 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, 2011. 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. Chlorine, HAA5 and TTHM results are reported as a “Running Annual Average” (RAAs)

| REGULATED CONTAMINANTS | SAMPLE DATE | MCL | MCLG | AMT DETECTED | RANGE LOW-HIGH | VIOLATION | TYPICAL SOURCE |
|---|-------------|----------|--------------------------|-------------------|------------------|-----------|---|
| Flouride | Daily | 4 | 4 | 0.78 | 0.2-1.02 | N | Water additives to protect teeth |
| Distribution Chlorine (ppm) | 5/Monthly | 4 | N/A | 0.92 | 0.64-0.97 | N | Highest running average |
| HAA5 Haloacetic acids (ppb) | Quarterly | 60 | N/A | 18 ppb | 1.9-18 | N | By-product of drinking water disinfection |
| TTHM-Total Trihalomethanes (ppb) | Quarterly | 80 | N/A | 46 ppb | 40-54 | N | By-product of drinking water disinfection |
| Nitrate (ppm) | 7/27/2011 | 10 | 10 | 0.3 | N/A | N | Erosion on natural deposits Discharge from septic tanks & sewage |
| NON-REGULATED CONTAMINANTS | SAMPLE DATE | MCL | MCLG | AMOUNT DETECTED | RANGE | VIOLATION | TYPICAL SOURCE |
| Sodium | 7/27/2011 | N/A | N/A | 6.3 ppm | N/A | N | Erosion on natural deposits |
| SPECIAL MONITORING | SAMPLE DATE | MCL | MCLG | AMOUNT DETECTED | RANGE | VIOLATION | TYPICAL SOURCE |
| Bromodichloromethane | 8/3/2011 | N/A | N/A | 7.5 ppb | N/A | N | Byproduct of drinking water chlorine disinfection part of TTHM's |
| Chloroform | 8/3/2011 | N/A | N/A | 15 ppb | N/A | N | Byproduct of drinking water chlorine disinfection part of TTHM's |
| Dibromochloromethane | 8/3/2011 | N/A | N/A | 2.5 ppb | N/A | N | Byproduct of drinking water chlorine disinfection part of TTHM's |
| MICROBIOLOGICAL CONTAMINANT | SAMPLE DATE | MCL | MCLG | DETECT | RANGE | VIOLATION | MAJOR SOURCE |
| Total Coliform Bacteria | | >1 | 0 | 0 | 0 | N | Naturally present in the environment |
| E-Coli Bacteria | | 0 | 0 | 0 | 0 | N | Human or animal fecal waste |
| SUBSTANCE (UNITS) | SAMPLE DATE | MCL | MCLG | Highest Detection | Range | Violation | MAJOR SOURCE |
| Tap Turbidity (NTU) | Continual | 0.3 NTU | N/A | 0.17 | .03-.17 | N | Soil Run-off |
| Percent of samples at or below 0.3 NTU's = 100% | | | | | | | |
| CONTAMINANT SUBJECT TO ALC | SAMPLE DATE | MCLG | DETECTED 90TH PERCENTILE | ACTION LEVEL | SAMPLES ABOVE AL | VIOLATION | TYPICAL SOURCE |
| LEAD** (ppb) | 7/21/2011 | 0 | 1.8 ppb | 15 ppb | 0 | N | Corrosion of household plumbing systems |
| COPPER (ppb) | 7/21/2011 | 1300 ppb | 290 ppb | 1300 ppb | 0 | N | Corrosion of household plumbing systems |