

2016 Water Quality Report for Village of Armada

This report covers the drinking water quality for the Village of Armada for the calendar year 2016. This information is a snapshot of the quality of the water that we provided to you in 2016. Included are details about where your water comes from, what it contains, and how it compares to Environmental Protection Agency (EPA) and state standards.

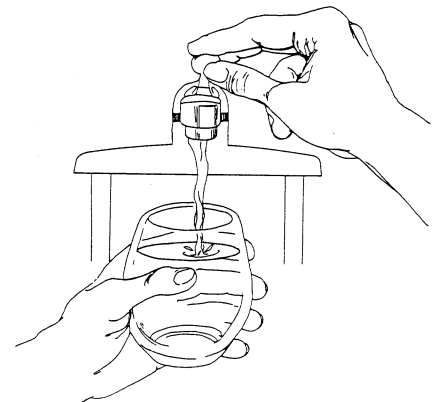
Your water comes from three groundwater wells located in the village that draw from the Saginaw Aquifer. The State has performed an assessment of our source water during 2016. We have a copy of the assessment report on file. Copies are available for review please contact the village office for a copy. A short source water assessment is included on the final page of our consumer confidence report for 2016.

- **Contaminants and their presence in water:** 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 **EPA's Safe Drinking Water Hotline (800-426-4791)**.
- **Vulnerability of sub-populations:** Some people may be more vulnerable to contaminants in drinking water than the general population. Immune-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).
- **Sources of drinking water:** The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. Our water comes from 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.

- Contaminants 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.
 - * **Inorganic contaminants**, such as salts and metals, which can be naturally-occurring or 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 and residential uses.
 - * **Radioactive contaminants**, which are naturally occurring or be the result of oil and gas production and mining activities.
 - * **Organic chemical contaminants**, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.

In order to ensure that tap water is safe to drink, EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration regulations establish limits for contaminants in bottled water which provide the same protection for public health.



Water Quality Data

The Village of Armada tests for many contaminants that are not detected in your drinking water. The table below lists all the drinking water contaminants that we detected during the 2016 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, 2016. 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.

Terms and abbreviations used below:

- **MAXIMUM RESIDUAL DISINFECTANT LEVEL (MRDL):** Means the highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary to control microbial contamination.
- **MAXIMUM RESIDUAL DISINFECTANT GOAL (MRDLG):** Means the level of drinking water disinfectant below which there is no known or expected health risk. MRDLGs do not reflect the benefits of the use disinfectants to control microbial contaminants
- **Maximum Contaminant Level Goal (MCLG):** 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.
- **Maximum Contaminant Level (MCL):** 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.
- **N/A:** Not applicable **ND:** not detectable at testing limit **ppb:** parts per billion or micrograms per liter **ppm:** parts per million or milligrams per liter **pCi/l:** picocuries per liter (a measure of radioactivity).
- **Action Level:** The concentration of a contaminant, which, if exceeded, triggers treatment or other requirements that a water system must follow.
- **RAA:** Running Annual Average.

Regulated Contaminant	MCL	MCLG	Level Detected	Range of Detections	Sample Date	Violation Yes / No	Typical Source of Contaminant
Arsenic (ppb)	10	N/A	7	5-7**	2016	No	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes
Barium (ppm)	2	2	0.25	0.25	2013	No	Discharge of drilling wastes; Discharge of metal refineries; Erosion of natural deposits
Fluoride (ppm)	4	4	1.1	1.1	2016	No	Erosion of natural deposits. Discharge from fertilizer and aluminum factories.
Total Xylenes (ppm)	10	10	0.0005	0.0005	2013	No	Discharge from petroleum factories; discharge from chemical factories

Alpha Emitters (PCi/l)	15	0	4	WTP- 4	2016	No	Erosion of natural deposits.
Total Trihalomethanes TTHM (ppb)	80	N/A	50.3	42.3 – 50.3	2016	No	By-Product of drinking water chlorination
Haloacetic Acids HAA5 (ppb)	60	N/A	9	0 - 9	2016	No	By-product of drinking water chlorination Armada Center Rd West Main St.
Chlorine Residual (ppm)	Date 2016	MRDLG 4	MRDL 4	0.08 – 1.75	RAA 0.69	No	By-Product of drinking water Chlorination
Special Monitoring and Unregulated Contaminant *			Level Detected	Sample Date	Range		Typical Source of Contaminant
Sodium (ppm)			199	2016	199		Erosion of natural deposits.
Contaminant Subject to AL		Action Level		90% of Samples ≤ This Level	Sample Date	Number of Samples Above AL	Typical Source of Contaminant
Lead (ppb)		15		6	2015	1	Corrosion of household plumbing systems; Erosion of natural deposits 1 of 10 samples exceeded the action level.
Copper (ppb)		1300		240	2015	0	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives
2016 Microbiological Contaminants – Monthly Monitoring in Distribution System							
Contaminant	MGLC	MCL		Highest Number Detected	Violation Yes/No	Major Sources in Drinking Water	
Total Coliform Bacteria	0	Presence of Coliform bacteria >5% of monthly samples		0 - in one month	No	Naturally present in the Environment.	
E.coli or fecal Coliform Bacteria	0	A routine sample and a repeat sample are total coliform positive, and one is also fecal or E. coli positive		0 – in entire year	No	Human waste and animal fecal waste	

Health effects language (Xylenes) Some people who drink water containing xylenes in excess of the MCL over many years could experience damage to their nervous system.

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

** While your drinking water meets EPA's standard for arsenic, it does contain low levels of arsenic. EPA's standard balances the current understanding of arsenic's possible health effects against the costs of removing arsenic from drinking water. EPA continues to

research the health effects of low levels of arsenic, which is a mineral known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems.

Monitoring and Other Important Information

The State and EPA require us to test our water on a regular basis to ensure its safety. We met all the monitoring and reporting requirements for 2016.

We will update this report annually and will keep you informed of any problems that may occur throughout the year, as they happen. Copies are available at the Village of Armada office and will be mailed to all water customers.

Important Health Information about LEAD

If present, elevated levels of Lead can cause serious health problems, especially for pregnant women and children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The Village of Armada 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 at 800-426-4791 or at <http://www.epa.gov/safewater/lead>.

We invite public participation in decisions that affect drinking water quality. We want your valued customers to be informed about their water utility. If you want to learn more, please attend any of our regularly scheduled meetings. They are held on the second and fourth Mondays of each month at 7:00 pm located at the Municipal Office Building, 74274 Burk Street, Armada, Michigan 48005-0903. For more information about your water, or the contents of this report, contact Edward Serwatowski, Superintendent of Public Works, Village of Armada, (586) 784-8553. For billing questions call (586) 784-9151. For more information about safe drinking water, visit the U.S. Environmental Protection Agency at www.epa.gov/safewater/.

The Village of Armada Water Department is available daily Monday through Friday, 7:00 am to 4:00 pm. In our continuing efforts to maintain a safe and dependable water supply, it may be necessary to make improvements in your water system. The costs of these improvements may be reflected in the rate structure. Rate adjustments may be necessary in order to address these improvements. We welcome your comments and your opinions about this report and will be happy to answer any questions at (586) 784-8553.

The Water Department will be inspecting for cross connection violations. This is very important to maintain a safe drinking water supply. If a violation is found please correct the problem as soon as possible to avoid possible contamination of the public water supply.

We at the Village of Armada Water Department work around the clock to provide a safe and dependable water supply. We ask all our customers to help us to protect our water sources, which are the heart of our community, our way of life and our children's future. Our 24-hour Emergency Service Number is (586) 531-5364.

Summarization of the Village of Armada Water Assessment Report

The Village of Armada draws water from three water wells ranging from 113 feet to 162 feet drawing from the Saginaw Aquifer. The Michigan Department of Environmental Quality has performed an assessment of our source water in 2016 to determine the susceptibility or the relative potential of contamination. The susceptibility rating is on a six-tiered scale from “very-low” to “high” based primarily on geologic sensitivity, water chemistry and contaminant sources. The susceptibility of our source is as follows.

Well #6 - Susceptibility is **Moderate**.

Well #7 - Susceptibility is **Moderately High**.

Well #8 - Susceptibility is **Moderately High**.

Significant sources of contamination include but are not limited to. Improper wellhead isolation, Industrial and Waste Water Treatment Plants built within 2000 feet of a wellhead, sanitary sewer and storm drains located inside wellhead isolation areas along with geologic formations.

The Village of Armada is proud to announce that there were no Bacterial Violations for the 2016 calendar year, we collect Bacteriological Samples from the Distribution System and at all Wells on a monthly basis.

If you would like to know more about the water quality report please contact Edward T. Serwatowski at 586-784-9151 or pick up a copy from the Village of Armada Municipal Building located at 74274 Burk Street Armada, Michigan 48005. Office hours are 8:00am to 4:00pm Monday thru Thursday, Friday 8:00am to 12:00 noon.

Fire Hydrants are flushed on Wednesday and or Thursday afternoons thru out the year, please check water before doing laundry.

Edward T. Serwatowski
Armada Water Department