

ANNUAL

WATER
QUALITY
REPORT

Water testing performed in 2009



PWSID#: 5370

This report was prepared by:
Plainfield Township Water Department
5195 Plainfield Ave NE
Grand Rapids, MI 49525

Maintaining High Standards

Once again we are proud to present our annual water quality report. This report covers all testing performed between January 1, 2009 and December 31, 2009. The events of the past few years have presented many of us with challenges we could not have imagined. Yet, in spite of this we have maintained our high standards in an effort to continue delivering the best quality drinking water possible. There may be other hurdles in the future but know that we will always stand behind you and the drinking water we work diligently to provide.

We encourage you to share your thoughts with us on the information contained in this report. Should you ever have any questions, we are always available to assist you.



For more information about this report, or for any questions relating to your drinking water, please call Donald Petrovich, Water Plant Superintendent, at (616) 364-7174, or e-mail petrovichd@plainfieldcharterwp.org

Community Participation

You are welcome to participate in our public forum and voice your concerns about your drinking water. We have board meetings the 1st and 3rd Monday of each month beginning at 7:30 PM at Town Hall, 6161 Belmont Ave., Belmont Michigan 49306.

Where Does Plainfield water come from?

Plainfield Township Water Department gets its excellent quality raw water from sixteen wells located in three separate well fields. These wells vary in size, and can pump from 600 gallons of water per minute to 1450 gallons of water per minute for a total raw water supply capacity of approximately 24 million gallons a day. This raw water supply is pumped to and treated by our 16 million gallon per day capacity water plant to meet every federal and state requirement for safe drinking water. In 2009 we supplied over 1.3 billion gallons of safe, clean drinking water to our customers. Our minimum daily pumpage was 2.31 million gallons of water a day. Our maximum pumpage was 7.70 million gallons of water a day. Our average daily pumpage was 3.74 million gallons a day.

The water treatment plant is a full treatment, lime softening facility. In the water distribution system there are over 200 miles of water main, water meters in each customers home and facility, and over 2,000 valves and hydrants respectively. There are 13 water tanks ranging in capacity from 200,000 gallons to 4 million gallons of water. These tanks provide pressure and water for fire protection. Five pump stations move water to our tanks and four pressure districts. We provide water to Plainfield Township, Alpine Township, Grand Rapids Township, Algoma Township, and a small part of the City of Walker.



What Are PPCPs?

When cleaning out your medicine cabinet, what do you do with your expired pills? Many people flush them down the toilet or toss them into the trash. Although this seems convenient, these actions could threaten our water supply.

Recent studies are generating a growing concern over pharmaceuticals and personal care products (PPCPs) entering water supplies. PPCPs include human and veterinary drugs (prescription or over-the-counter) and consumer products, such as cosmetics, fragrances, lotions, sunscreens, and house cleaning products. Over the past five years, the number of U.S. prescriptions increased 12 percent to a record 3.7 billion, while nonprescription drug purchases held steady around 3.3 billion. Many of these drugs and personal care products do not biodegrade and may persist in the environment for years.

The best and most cost-effective way to ensure safe water at the tap is to keep our source waters clean. Never flush unused medications down the toilet or sink. Instead, check to see if the pharmacy where you made your purchase accepts medications for disposal, or contact your local health department for information on proper disposal methods and drop-off locations. You can also go on the Web at www.Earth911.com to find more information about disposal locations in your area.

Substances That Could Be in Water

To ensure that tap water is safe to drink, 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 can acquire 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 storm water 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 storm water 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 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.

Source Water Assessment

A Source Water Assessment Plan (SWAP) is available at our office. The state of Michigan performed this assessment of our source water in 2003. This plan is an assessment of the delineated area around our listed sources through which contaminants, if present, could migrate and reach our source water. It also includes an inventory of potential sources of contamination within the delineated area, and a determination of the water supply's susceptibility to contamination by the identified potential sources.

According to the Source Water Assessment Plan, our water system had a susceptibility rating of 'high', due to the geological characteristics of the soils around our wells. We have a state approved wellhead protection program, and have enacted a Wellhead Protection ordinance and a Zoning Overlay ordinance to help protect these wells. We have no contamination violations, our wells meet all standards for construction, and there are no contamination sources within our isolation areas. To learn more about protecting our water, you can get information on wellhead protection and water conservation from the Water Department. If you would like to review the Source Water Assessment Plan, please feel free to contact our office during regular office hours.

Your Award Winning Water Department

Plainfield Township Water Department has received some significant Awards in the last two years. The awards are a testament to the excellence of management and staff working together to provide you a clean, safe drinking water.

2009 - Michigan Section American Water Works Association:

Best Water Quality Report Award

Exemplary Wellhead Protection Program Award

Edward Dunbar Rich Service Award - Matt Weldon, Assistant Water Distribution Superintendent

2010 - Michigan Rural Water Association:

Operator of the Year 2010 Award - Donald Petrovich, Water Treatment Plant Superintendent

Utility of the Year 2010 Over 15,000 Population Award

The Water Treatment Process

The water treatment process consists of a series of steps. First, raw water is drawn from an underground aquifer by wells and sent to the water treatment plant. The water then passes through a clarifier, where alum and lime is added. The addition of these substances cause small particles to adhere to one another (called "floc") making them heavy enough to settle. These small particles are made up of calcium and magnesium, which is commonly called hardness. The heavy hardness particles drop by gravity into a basin from which sediment is removed. Chlorine and fluoride are also added for disinfection and prevention of tooth decay. The clarified, softened water then falls by gravity to filters. At this point, the water is filtered through layers of fine coal, silicate sand, and a specially manufactured filter bottom. As smaller, suspended particles are removed, turbidity disappears and clear water emerges. All chemicals added are carefully monitored, adding the lowest quantity necessary to protect the safety of your water without compromising taste. Finally, a corrosion inhibitor in the form of phosphate (used to protect distribution system pipes) is added before the water is pumped to ground storage reservoirs, and elevated water tanks where gravity takes over to provide water under pressure to homes, schools, and businesses.

LT2 Rule

The U. S. EPA has created the Long Term 2 Enhanced Surface Water Treatment Rule (LT2) for the sole purpose of reducing illness linked with the contaminant *Cryptosporidium* and other disease-causing microorganisms in drinking water. The rule will bolster existing regulations and provide a higher level of protection of your drinking water supply.

Sampling of our water source has shown the following:

Cryptosporidium: (0)

Giardia lamblia: (1 Giardia cyst in one 10 liter volume detected in a raw water sample dated April 13, 2009)

E. coli: (0)

It is important to note that these results are from our raw water source only and not our treated drinking water supply. For more information, contact U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.

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. We are 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 www.epa.gov/safewater/lead.

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 www.epa.gov/safewater/hotline/.

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. The state allows us to monitor for certain substances less 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 (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Alpha Emitters (pCi/L)	2002	15	0	1.3	1.3–1.3	No	Erosion of natural deposits
Chlorine (ppm)	2009	[4]	[4]	0.77	0.15–1.28	No	Water additive used to control microbes
Combined Radium (pCi/L)	2002	5	0	0.9	0.9–0.9	No	Erosion of natural deposits
Fluoride (ppm)	2009	4	4	1.3	0.9–1.3	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Haloacetic Acids [HAA] (ppb)	2009	60	NA	16.4	7.6–24.6	No	By-product of drinking water disinfection
Nitrate (ppm)	2009	10	10	1.83	1.83–1.83	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
TTHMs [Total Trihalomethanes] (ppb)	2009	80	NA	58.5	32.2–75.4	No	By-product of drinking water chlorination
Total Organic Carbon (ppm)	2009	TT	NA	1.67	1.41–1.67	No	Naturally present in the environment
Turbidity ¹ (NTU)	2009	TT	NA	.08	.03–.08	No	Soil runoff
Turbidity (Lowest monthly percent of samples meeting limit)	2009	TT	NA	100	NA	No	Soil runoff

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

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AL	MCLG	AMOUNT DETECTED (90TH% TILE)	SITES ABOVE AL/ TOTAL SITES	VIOLATION	TYPICAL SOURCE
Copper ² (ppm)	2007	1.3	1.3	0.015	0/31	No	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives
Lead ² (ppb)	2007	15	0	6	0/31	No	Corrosion of household plumbing systems; Erosion of natural deposits

OTHER REGULATED SUBSTANCES									
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	AMOUNT DETECTED	MCLG [MRDLG]	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE		
Haloacetic Acids [HAA]- IDSE Results (ppb)	2009	NA	23.9	NA	0–32.5	No	By-product of drinking water disinfection		
TTHMs [Total Trihalomethanes]-IDSE Results (ppb)	2009	NA	78.4	NA	4.7–86.0	No	By-product of drinking water disinfection		

UNREGULATED SUBSTANCES				
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	TYPICAL SOURCE
Sodium (ppm)	2009	31.5	31.5–31.5	Erosion of natural deposits.
Sulfate (ppm)	2009	46.1	46.1–46.1	NA

OTHER UNREGULATED SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	TYPICAL SOURCE
Calcium (ppm)	2009	36	19–36	Naturally present in ground water.
Chloride (ppm)	2009	102	65–102	Naturally present in ground water.
Hardness (ppm)	2009	174	120–174	Naturally present in ground water.
Iron (ppm)	2009	.045	.045–.045	Naturally present in ground water.
Magnesium (ppm)	2009	28	14–28	Naturally present in ground water.

¹Footnote for Plainfield Township Water Department: Turbidity is a measure of the cloudiness of the water. It is monitored because it is a good indicator of the effectiveness of the filtration system.

²Footnote for Plainfield Township Water Department: Tap water samples were collected for lead and copper analyses from 31 representative homes in the service area that had lead solder copper sweat fittings. We will be testing these homes again in 2010.

We were required by the U.S. EPA to conduct an evaluation of our distribution system. This is known as an Initial Distribution System Evaluation (IDSE) and is intended to identify locations in our distribution system that have elevated disinfection by-product concentrations. Disinfection by-products (e.g., HAAs and TTHMs) result from continuous disinfection of drinking water and form when disinfectants combine with organic matter that naturally occurs in the source water.

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

ND (Not detected): Indicates that the substance was not found by laboratory analysis.

NTU (Nephelometric Turbidity Units): Measurement of the clarity, or turbidity, of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

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).

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