MARION HOWELL OCEOLA GENOA

Sewer and Water Authority

2911 Dorr Rd., Brighton, MI 48116
Ph: 810-227-5225
Fax: 810-227-3420

The Facts on Lead and the MHOG Water System

Dear Customers of the MHOG Water System;

With the constant stream of news and reports of lead in the drinking water in Flint, other major cities, and now much closer to home at the NW Elementary School in Howell; we wanted to provide a fact sheet on the MHOG water system serving your home or business. It is our goal you find this information reassuring and informative.

Where Does Lead in Drinking Water Come From?

One of the most confusing issues with the lead crisis in Flint is the source of the lead in the drinking water. Lead, in drinking water systems, comes from the leaching of lead from lead service lines and lead solder that was used historically to join copper water tubing. In 1961, the use of lead service lines was banned, so it is possible that a home constructed prior to 1961 could have a lead service line. In 1987, the use of lead in solder was banned. Therefore, any home constructed before 1987 may have plumbing containing lead solder. So, it is important to clarify as part of this crisis that the water supply is not the direct source of lead, but rather the lead is coming from services in the homes.

Regarding the piping in the MHOG System, the oldest components of the MHOG System date back to 1996. All water main piping in the MHOG system is either cement lined ductile iron pipe joined and sealed with rubber gaskets, PVC, or fused high density polyethylene plastic pipe. No lead was used to fuse any MHOG piping. All service lines in the MHOG System that provide water to the homes and businesses are copper, and these service lines are connected with either copper flair fittings or rubber gasket compression fittings. Due to when our service lines were installed, after 1996, no lead solder was used in fusing any copper service lines. Another potential source of lead is brass fittings in the system. Lead was used as a component of brass to improve the malleability of the metal alloy. However, lead is present in brass only at a concentration of 1.5%. On January 1, 2014, the EPA mandated that all brass be made lead free. MHOG was ahead of this curve using lead free brass components as soon as 2012. In most home systems, brass components represent a small component of the overall home plumbing system as they are primarily just fittings.

For our older homes in the system, which were historically on private wells and connected to MHOG when the water lines were installed, it is possible that lead could be in original piping from the well, into the home. Usually, the well was abandoned, and the water service line was connected to old well line at the point where the well was installed. This was done for ease of access into the home and cost saving measures. As part of our lead and copper sampling

performed, we target these older homes to develop this worst case scenario. Further information on sampling and results is presented below.

Another potential source of lead is brass fittings in the system. Lead was used as a component of brass to improve the malleability of the metal alloy. However, lead is present in brass only at a concentration of 1.5%. On January 1, 2014, the EPA mandated that all brass be made lead free. MHOG was ahead of this curve using lead free brass components as soon as 2012.

Source of MHOG Water

One of biggest issues in the Flint Crisis was the change of the Flint water supply from the Detroit Sewerage and Water Department (DWSD) to the Flint River. This change in source resulted in phosphates not being added to the water and a different pH level, which made the new water source impact the lead oxide coating that had built up over the years in the lead service and lead solder. As a result, the water was able to leach the lead minerals from the lead services and solder, which caused the dissolved lead to be in the drinking water.

The source of MHOG Water is an ample ground water aquifer in Marion Township. Water is supplied by 6 wells, each capable of producing 2,000,000 Million Gallons (MG) of water per day. Depending on demand, 3 or 4 wells are used at a time. The wells are screened approximately 400 feet below the ground in bedrock. Therefore, the source of the water is protected by several confining layers of clay. In addition, MHOG actively participates in a well head protection program, to protect this source of water for all future generations. Because the source of MHOG water is ground water, it is much safer from potential contamination than surface water sources which are subject to pollutants from run-off such as oil, sediments, and organics. In addition, because our water is so low in organics, we have a much lower risk for development of tri-halo-methane compounds as part of the chlorination process. Those familiar with the Flint crisis, may have also heard this was a problem with the source water change. Tri-halo-methane compounds are not a source of concern in the MHOG system.

As part of the treatment process for the ground water, we perform iron removal, lime softening, and chlorine addition. To keep the MHOG water from being corrosive, we soften to a level of 100 mg/L of $CaCO_3$, which is the component of water that makes it hard. In addition, we distribute the water at a pH of 8, so that it is not corrosive to piping and plumbing systems. The chlorine assures that bacteria cannot grow in or contaminate the drinking water. We aim to keep this concentration at 1mg/L in the water. Since the MHOG plant began operation in 1998, the source of, and treatment process for, the water supplied has not changed.

Where and How Often is Lead Testing Performed?

When the MHOG system was started in the late 1990's, lead testing occurred on a quarterly basis. Once a baseline determination of safe lead levels was conducted, testing was reduced to annually, and then in early 2000's was reduced to occurring once every three years. MHOG most recently conducted system wide lead sampling in the summer of 2015. To conduct our lead sampling, we contact 20 homeowners in the system whose homes, based on age, have the highest probability of lead in their plumbing. Sample bottles are dropped off at the homes, and we ask that they be filled from an internal sink, first thing in the morning, when water has had the most

time to remain in contact with the plumbing. We then collect these samples from the homeowners, and submit to an independent testing lab. In addition, we conduct this sampling in the summer, when our water is at its warmest, since warm water can leach minerals at a greater rate than cold water. In this way, we are assured that our water that is being tested represents the worst case scenario for potential lead contamination in the system. Of the 20 samples collected in August 2015, only 2 had measurable concentrations of lead. These two samples had concentration of 2µg/L or ppb and 4 µg/L or ppb. 18 other samples were all non-detect or 0.0 ppb for lead. The EPA action level for lead is 15 ppb. MHOG, in its history, has never had a lead sample above the EPA limit.

Quality Assurance

In June of each year, we mail to each customer in our system a consumer confidence report. This report summarizes the quality of MHOG water with regard to each contaminant of potential concern in the system. In addition, we maintain copies of our consumer confidence reports on our website, which is www.mhog.org for the past three years so that our customers can review the quality history of their drinking water. In addition, if a customer ever has a concern regarding the quality of their water, we ask them to contact us to address any questions or investigate the quality concern. You, the customers, having safe water, are our number one priority.

Future of MHOG and Water

If there is one thing that can be taken away from the crisis in Flint is that we should not take the quality of our water supply and infrastructure for granted any longer. At MHOG, we continually invest in our system to assure that it meets the current standards of today as we discover more and more the importance of quality drinking water, and concurrently safe and effective waste water treatment. In the MHOG system, we maintain reserve and O&M Fund Balances to be able to invest in and adapt the system to regulatory changes. Having quality drinking water and waste water systems has done more to improve the public health of our Country than any other improvement in the 20th century. We have seen in the Flint crisis how quickly these resources can become impacted and affect the quality of life for many citizens.

Sincerely,

Greg Tatara, Ph.D.
Director, MHOG Sewer and Water Authority