

***Presbyterian Senior Living
Glen Meadows Retirement Community
Annual Drinking Water Quality Report For 2017***

PWSID 0030208

June 30, 2018

We're very pleased to provide you with this year's Annual Water Quality Report. We want to keep you informed about the excellent water and services we have delivered to you over the past year. Our goal is and always has been, to provide to you a safe and dependable supply of drinking water. Our water source consists of two wells that draw from an underground aquifer that has become influenced by surface water. At times (usually during high rainfall events) the source water becomes adversely affected by turbidity which may bring along with it coliform and fecal coliform bacteria. PSL constructed a surface water treatment plant consisting of ultra and reverse osmosis filtration that has been in service since November 2013 to effectively treat source water adversely affected by surface water contaminants.

The following report shows our water quality and what it means:

Some people may be more vulnerable to contaminants in drinking water than 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 system 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 microbiological contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

If you have any questions about this report or concerning your water, please contact Jack Bradshaw at 443-903-4758. We want our residents to be informed about their water.

Glen Meadows Retirement Community routinely monitors for contaminants in your drinking water according to Federal and State laws. This table shows the results of our monitoring for the period of January 1st to December 31st, 2017. As water travels over land or underground, it can pick up substances or contaminants such as microbes, inorganic and organic chemicals, and radioactive substances. All drinking water, including bottled drinking water, may be reasonably expected to contain at least small amounts of some contaminants. It's important to remember that the presence of these contaminants does not necessarily pose a health risk.

In this table you will find many terms and abbreviations you might not be familiar with. To help you better understand these terms we've provided the following definitions:

Parts per million (ppm) or Milligrams per liter (mg/l) - one part per million corresponds to one minute in two years or a single penny in \$10,000.

Parts per billion (ppb) or Micrograms per liter - one part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.

Picocuries per liter (pCi/L) - picocuries per liter is a measure of the radioactivity in water.

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

Maximum Contaminant Level - The "Maximum Allowed" (MCL) is 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.

Maximum Contaminant Level Goal - The “Goal” (MCLG) is 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.

Turbidity: Turbidity is the measurement of the cloudiness of the water caused by suspended particles. Measurement of turbidity (which is performed continuously by the SWTP, source water and finished water instrumentation: Hach turbidity meters) is an indication of filtration effectiveness.

All sources of drinking water are subject to potential contamination by substances that are naturally occurring or manmade. These substances can be microbes, inorganic or organic chemicals and radioactive substances. All 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 the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency’s Safe Drinking Water Hotline at 1-800-426-4791.

MCLs are set at very stringent levels. To understand the possible health effects described for many regulated contaminants, a person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect.

TEST RESULTS						
Contaminant	Violation Y/N	Level Detected	Unit Measurement	MCLG	MCL	Likely Source of Contamination
Radioactive Contaminants						
Alphaemitters (2013)	N	2.0	pCi/l	0	15	Erosion of natural deposits
Beta/photon emitters (2013)	N	4.0	pCi/l	0	50	Decay of natural and man-made deposits
Combined radium (226 & 228) (2013)	N	0.8	pCi/l	0	5	Erosion of natural deposits
Inorganic Contaminants						
Copper (2017)	N	0.100	ppm	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead (2017)	Y	58	ppb	0	AL=15	Corrosion of household plumbing systems, erosion of natural deposits
Nitrate (as Nitrogen) (annual)	N	2.3	ppm	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Fluoride (2017)	N	ND (>0.2)	ppm	4	4	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Synthetic Organic Contaminants including Pesticides and Herbicides						
Di (2-ethylhexyl) phthalate	N	1.0	ug/l	0	6	Discharge from rubber and chemical factories
2,4-D (2013)	N	0.5	ug/l	70	70	Runoff from herbicide used on row crops
Volatile Organic Contaminants						

TTHM (Distribution) [Total trihalomethanes]	N	2.906	ug/l	0	80	By-product of drinking water chlorination
Haloacetic Acids (HAA5) (distribution)(2017)	N	<5	ug/l	0	60	By-product of drinking water chlorination
Unregulated Contaminants						
Chloroform(2017)	N	<0.5	ug/l	N/A	N/A	By product of chlorine disinfection
Bromoform(2017)	N	<1	ug/l	N/A	N/A	By product of chlorine disinfection
Bromodichloromethane (2017)	N	<0.5	ug/l	N/A	N/A	By product of chlorine disinfection
Dibromochloromethane (2017)	N	<0.5	ug/l	N/A	N/A	By product of chlorine disinfection

Note: Test results are for year 2017 unless otherwise noted; all tests are not required on an annual basis.

The GMRC Surface Water Treatment Plant (SWTP) operated continuously thru out 2017 delivering an excellent quality of UF filtered (Ultra Filtration) and RO softened (Reverse Osmosis) treated water to the GMRC campus.

Due to the GMRC source water wells being classified as GWUDI, (ground water under direct influence of Surface Water) the SWTP is required to monitor and record turbidity readings of the treated water discharged to storage every 15 minutes during process operations. The turbidity compliance protocol for the SWTP is: Zero turbidity above 1 NTU and 95% off all turbidity measured not greater than 0.3 NTU. I am pleased to report the SWTP had a 100% compliance record with the highest recorded turbidity level being 0.068 NTU. In addition to filtering particulate materials from the source water, the SWTP also provides 4-log treatment (99.99% removal) of bacteria and virus inactivation in the treated, finished water delivered to the campus. 4-log treatment is achieved by adding a liquid chlorine solution to the finished water in combination with the UF filtration process and providing enough contact time (CT) in the system for proper disinfection. The average chlorine residual concentration during 2017 was 0.8 mg/l. I am pleased to report the SWTP achieved 100% compliance for 4-log removal requirements.

In addition to the source water being considered GWUDI, the source water is also very high in calcium and magnesium concentrations from the limestone that is present in this region. The source water is considered **hard water** (280 mg/l) and needs to be **softened** (60-100 mg/l) before delivery to the campus. Hard water causes problems with downstream equipment and fixtures and reduces cleaning agent efficiency. R/O is used to soften the finished water from the UF process. R/O is the most stringent filtering process, capable of removing all particulates from the water source. The SWTP blends the RO/UF water discharges together before discharging to storage. The RO influence on the UF water reduces the system ph. Low ph water can cause additional problems within the distribution system piping. Low ph is attributed to the leaching of lead and copper concentrations in the water which can lead to additional health concerns. GMRC has been under a lead and copper action level protocol since 2012, due to slightly elevated lead concentrations in the water distribution system.

To increase and maintain a consistent and controllable ph level in the distributed water and as part of the 2016 lead and copper corrosion control treatment recommendation, GMRC installed a sodium hydroxide (caustic soda) chemical feed system to the SWTP on February 1, 2017. The distribution system ph was increased from 7.1 to 7.8 ph. This elevated and maintained ph was expected to reduce the lead concentration in the distribution system below the Action Level of 0.15 mg/l.

Lead and Copper sampling was performed on 3/23/17. As expected, due to the installation of the caustic feed system, the 90th percent lead and copper calculation reduced the GMRC distribution water system below the action level (AL) of 0.015 mg/l to 0.011 mg/l. As a result of being in compliance, GMRC stopped distribution of bottled water to residents as was the practice since August 2016, as recommended by MDE. GMRC continued with the L+C protocol and the next sampling of the distribution system occurred December 17th 2017.

The 90th percent lead and copper calculation of the required sites sampled on December 17th 2017 were not in compliance of the L+C action level protocol. The 90th percentile result of 0.058 mg/l required GMRC to re-enter the L+C Rule protocol, which includes WQP testing, lead public notification protocol, and recommended optional corrosion control to MDE for review. This requirement will begin taking place in early 2018. GMRC management conducted meetings with the residents during 2017 explaining all the steps taken to reduce the lead concentration initially and re-explaining what will be needed and completed (in the near future) once the slight lead problem resurfaced. These meetings were conducted by the Executive Director and the technical explanations were given by the water and wastewater superintendent responsible for system operations.

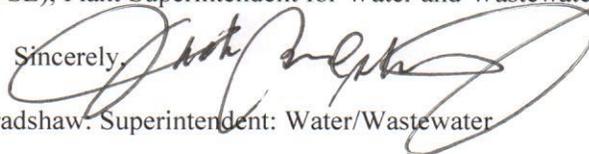
If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. Presbyterian Senior Living is responsible for providing high quality 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 drinking 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 EPA Safe Drinking Water Hotline at 1-800-426-4791 or at <http://www.epa.gov/safewater/lead>.

Lead: Lead in drinking water is rarely the sole cause of lead poisoning, but it can add to a person's total lead exposure. All potential sources of lead in the household should be identified and removed, replaced or reduced.

In addition to lead and copper, the finished water is sampled for many other required contaminants. During 2017 GMRC water distribution was sampled for: Monthly bacteriology, nitrate, fluoride, VOC's, SOC's, TTHM, HAA5 (TTHM+HAA5 are disinfection byproducts from chlorine addition). During routine BACT testing, GMRC had a positive sample for coliform bacteria on October 3rd. The bacteria count was 2 mpn/100ml when it is normally non detect. Repeat sampling of the same site and additional sites up and downstream of original site per the BSSP protocol were taken on October 4th. Sample results were negative. (<1 mpn/100ml) The system was returned to full compliance. An enormous amount of sampling and reporting is required to ensure clean, safe water is being delivered to residents of GMRC. Occasionally, a sample or report is overlooked due to the amount of reporting required. Does not happen often, however, the report for bacteriology (BMR) for August 2017 was not sent in to MDE for review. An oversight by the superintendent. The sample for August was taken and the result was negative. This oversight was reported to the superintendent by MDE in November 2017. A public notice of the monitoring violation was submitted and displayed per protocol on the environmental bulletin board at GMRC for review by all residents on November 30th, 2017.

Thank you in advance for your attention to this Water Quality Report (CCR) for 2017. If you need additional information or have questions concerning this matter please do not hesitate to contact PSL Management or Jack Bradshaw (PSL), Plant Superintendent for Water and Wastewater at Glen Meadows Retirement Community. (#5036)

Sincerely,



Jack Bradshaw, Superintendent: Water/Wastewater