

# 2022 ANNUAL DRINKING WATER QUALITY REPORT

This report is a snapshot of the drinking water quality that was provided last year. Included are details about where your water came from, what it contained, and how it compared to state and federal standards. Our system makes every effort to provide you with safe and pure drinking water.

for  
**Madden Estates**  
**PWS ID #2323002**



Prepared by

**McCLURE**  
ENGINEERING, INC

*The water system at Madden Estates is owned by Arthur and Fern Maskell. If you have any questions about this report, or for additional copies, please contact the Maskell's or the McClure Engineering website at <http://www.mcclureengineers.com/water.html> or office at 508.248.2005.*

**This report contains very important information about your drinking water.**  
**Please translate it, or speak with someone who understands it.**

### *Community Drinking Water Source*

**M**adden Estates is located in West Brookfield, MA and is supplied water by PWS Source ID#2323002-04G (04G) (Well #4). Data in this report reflects water quality from Well 04G.

Madden Estates continuously strives to produce the highest quality water possible to meet or surpass every water quality standard. We monitor our water source and distribution system very closely. The standards we operate under were enacted by the U.S. Congress as the Safe Drinking Water Act in 1974 and were amended in 1986 and 1996.

### *Is My Water Treated?*

To ensure that we provide the highest quality of water available, certified operators and MassDEP regularly monitor water quality. When standards are exceeded, MassDEP requires treatment. Currently Well 04G is treated with an acid neutralizer to control (raise) the pH level and a water softener for the removal of iron and manganese. Water is regenerated with a sodium chloride brine rinse. Chlorine disinfection is available for emergency situations.

### *Substances Found in Tap Water ~*

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 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 storm water runoff or domestic wastewater discharges, oil and gas production, mining, and 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 can also come from gas stations, urban storm water runoff, and septic systems.
- **Radioactive contaminants**, can be naturally occurring or be the result of oil and gas production and mining activities.
- **Unregulated Contaminants** are those for which EPA has not established drinking water standards. The purpose of unregulated monitoring is to assist EPA in determining their occurrence in drinking water and whether future regulation is warranted.

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 water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the US Environmental Protection Agency (EPA) Safe Drinking Water Hotline (1-800-426-4791.)

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 from their health care providers. EPA/Centers for Disease Control and Prevention (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 (1-800-426-4791).

In order to ensure that tap water is safe to drink, the Department of Environmental Protection (MassDEP) and EPA prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. The Food and Drug

Administration (FDA) and Massachusetts Department of Public Health (DPH) regulations establish limits for contaminants in bottled water that must provide the same protection for public health.

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~ *CROSS CONNECTION CONTROL AND PREVENTION* ~

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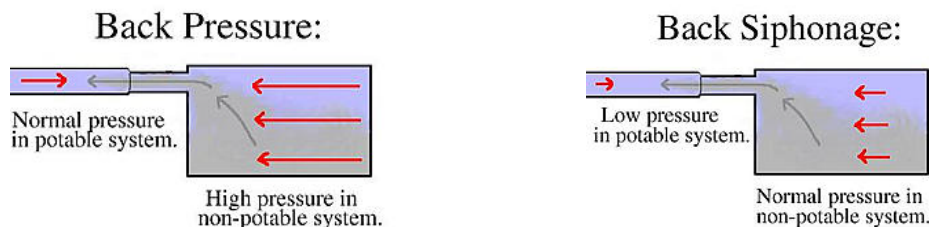
Madden Estates makes every effort to ensure that the water delivered to your home and business is clean, safe and free of contamination. Our staff works very hard to protect the quality of the water delivered to our customers from the time the water is extracted via deep wells from underground aquifers or withdrawal point from a surface water source, throughout the entire treatment and distribution system. But what happens when the water reaches your home or business? Is there still a need to protect the water quality from contamination caused by a cross-connection? If so, how?

### What is a cross-connection?

A cross-connection occurs whenever the drinking water supply is or could be in contact with potential sources of pollution or contamination. Cross-connections exist in piping arrangements or equipment that allows the drinking water to come in contact with non-potable liquids, solids, or gases (hazardous to humans) in event of a backflow.

### What is a backflow?

Backflow is the undesired reverse of the water flow in the drinking water distribution lines. This backward flow of water can occur when the pressure created by equipment or a system such as a boiler or air-conditioning is higher than the water pressure inside the water distribution line (back pressure), or when the pressure in the distribution line drops due to routine occurrences such as water main breaks or heavy water demand causing the water to flow backward inside the water distribution system (back siphonage). Backflow is a problem that many water consumers are unaware of, a problem that each and every water customer has a responsibility to help prevent.



### What can I do to help prevent a cross-connection?

Without the proper protection something as simple as a garden hose has the potential to contaminate or pollute the drinking water lines in your house. In fact over half of the country's cross-connection incidents involve unprotected garden hoses. There are very simple steps that you as a drinking water user can take to prevent such hazards, they are:

- NEVER submerge a hose in soapy water buckets, pet watering containers, pool, tubs, sinks, drains, or chemicals.
- NEVER attached a hose to a garden sprayer without the proper backflow preventer.
- Buy and install a hose bibb vacuum breaker in any threaded water fixture. The installation can be as easy as attaching a garden hose to a spigot. This inexpensive device is available at most hardware stores and home-improvement centers.
- Identify and be aware of potential cross-connections to your water line.
- Buy appliances and equipment with backflow preventers.
- Buy and install backflow prevention devices or assemblies for all high and moderate hazard connections.

Madden Estates recommends the installation of low-cost hose bibb vacuum breakers for all inside and outside threaded spigots and hoses. You can purchase them at a hardware store or plumbing supply store. This is a great way to help protect the water system that serves your home and community!

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*~ IMPORTANT DEFINITIONS ~*

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**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.

**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.

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

**90<sup>th</sup> Percentile** – Out of every 10 homes sampled, 9 were at or below this level. This number is compared to the action level to determine lead and copper compliance.

**Secondary Maximum Contaminant Level (SMCL)** – These standards are developed to protect aesthetic qualities of drinking water and are not health-based.

**Office of Research and Standards Guideline (ORSG)** – This is the concentration of a chemical in drinking water, at or below which, adverse health effects are unlikely to occur after chronic (lifetime) exposure. If exceeded, it serves as an indicator of the potential need for further action.

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

**ppm** = parts per million, or milligrams per liter (mg/l)

**ppb** = parts per billion, or micrograms per liter (ug/l)

**ppt** = parts per trillion, or nanogram per liter (ng/l)

**pCi/l** = picocuries per liter (measure of radioactivity)

**ND** = Not Detected

**N/A** = Not Applicable

## *DISTRIBUTION SYSTEM WATER QUALITY*

### What Does This Data Represent?

The water quality information presented in the table is from the most recent round of testing done in accordance with the regulations. All data shown was collected during the last calendar year unless otherwise noted in the table.

Lead & Copper	Dates Collected	* 90 <sup>th</sup> Percentile	Action Level (AL)	MCLG	# of sites sampled	# of sites above Action Level	Exceeds Action Level	Possible Sources of Contamination
Lead (ppb)	3/8/2022 12/19/2022	6.3 1.65	15	0	5	0	N	Corrosion of household plumbing; erosion of natural deposits
Copper (ppm)	3/8/2022 12/19/2022	0.3205 0.07675	1.3	1.3	5	0	N	Corrosion of household plumbing; erosion of natural deposits; leaching from wood preservatives.
<p>*9 out of every 10 sites sampled were at or below this level. Lead and copper compliance is determined by comparing the 90<sup>th</sup> percentile value to the Action Level (AL) for each contaminant. The AL is the concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.</p> <p>Lead and copper sampling is scheduled twice annually. The last samples collected were on December 19, 2022, and the next sample collection will be during Quarters 2 and 4 of 2023.</p>								

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. Madden Estates 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 drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at <http://www.epa.gov/safewater/lead>.

## DISTRIBUTION SYSTEM WATER QUALITY (continued)

Regulated Contaminants	Date Collected	Highest Result or Highest Avg	Range detected	MCL	MCLG	Violation (Y/N)	Possible Sources
<b>Inorganic Contaminants</b>							
Antimony (ppb)	6/3/2019	5.1	5.1	6	6	N	Discharge from fire retardants; ceramics; electronics; solder
Nitrate (ppm)	4/5/2022	0.431	0.431	10	10	N	Runoff from fertilizer use; leaching from septic tanks; sewage; erosion of natural deposits
Nitrite (ppm)	4/1/2021	ND	ND	1	1	N	Runoff from fertilizer use; leaching from septic tanks; sewage; erosion of natural deposits
Perchlorate (ppb)	7/1/2021	ND	ND	2	N/A	N	Rocket propellants, fireworks, munitions, flares, blasting agents
PFAS6 (ppt)	1/2/2022 4/13/2022 7/11/2022	ND	ND	20	None	N	Discharges and emissions from industrial and manufacturing sources associated with the production or use of these PFAS, including production of moisture and oil resistant coatings on fabrics and other materials. Additional sources include the use and disposal of products containing these PFAS, such as fire-fighting foams.
<b>Radioactive Contaminants</b>							
Radium 226 & 228 (pCi/L) (combined values)	5/19/2021	0.91	0.91	5	0	N	Erosion of natural deposits
<p>- Gross Alpha was sampled in 2015. The next sampling is due Quarter 2 of 2024.</p> <p>- Perchlorate was sampled on July 1, 2021. The next sampling event is due Quarter 3 of 2023.</p> <p>- Inorganic Contaminants (IOCs) were sampled on April 5, 2022. The next sampling event is due in Quarter 2 of 2025</p> <p>- Synthetic Organic Contaminants (SOCs) were sampled on April 5, 2022. <u>SOCs were non-detected.</u> The next sampling event is due in Quarter 2 of 2025.</p> <p>- Volatile Organic Compounds (VOCs) were sampled on April 5, 2022. <u>VOCs were non-detected.</u> The next sampling event is due in Quarter 2 of 2023.</p>							

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## *DISTRIBUTION SYSTEM WATER QUALITY (continued)*

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Unregulated and Secondary Contaminants	Last Date Collected	Result or Range Detected	Average Detected	SMCL (ppb)	ORSG	Possible Sources
Iron (ppb)	12/6/2022	ND	ND	300	N/A	Naturally occurring, corrosion of cast iron pipes
Manganese* (ppb)	12/6/2022	4.17	4.17	50	Health advisory of 300 ppb	Natural sources as well as discharges from industrial uses
Nickel (ppb)	4/5/2022	2.5	2.5	N/A	100	Discharge from domestic wastewater, landfills, and mining and smelting operations
Sodium** (ppm)	4/5/2022	43.9	43.9	N/A	20	Discharge from the use & improper storage of sodium-containing de-icing compounds or in water-softening agents.
Conductivity	7/1/2021	180	180	N/A	N/A	
pH (bi-weekly)	2021	6.0 – 7.4		6.5-8.5	N/A	Runoff and leaching from natural deposits
Alkalinity (bi-weekly)	12/20/2022	155 – 170		N/A	N/A	
<p>*US EPA and MassDEP have established public Health Advisory (HA) levels for manganese to protect against concerns of potential neurological effects and a one-day and 10-day HA of 1000 ppb for acute exposure.</p> <p>**<u>Sodium</u>: Some people who drink water containing sodium at high concentrations for many years could experience an increase in blood pressure.</p>						

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### *~ EDUCATIONAL INFORMATION ~*

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#### ***SWAP (Source Water Assessment and Protection) ~***

In 2010, Well 04G was constructed and approved by MassDEP. A SWAP Report was not prepared by MassDEP for this drinking water source. Currently, Well 04G has a 243 feet Zone I radius and an Interim Wellhead Protection Area (IWPA) of 600 feet. The Zone I is restricted to just water supply activities and Well 04G meets this MassDEP requirement.

#### ***Opportunities to Participate ~***

Any matters that concern your drinking water supply or issues you would like to see addressed can be presented at the regularly scheduled meeting of the trustees, association or board. If your concerns need immediate attention contact System Owner, Fern Maskell at 508-867-7972.

#### ***Water System Improvements ~***

Our water system is routinely inspected by MassDEP for its technical, financial and managerial capacity to provide safe drinking water to you. MassDEP issued an Administrative Consent Order, ACOP-CE-09-5D003-Amend 1 (ACOP) that required the system to permit and construct a new public water supply source to serve the community and to abandon and decommission existing water sources. The PWS has done this and has been operating with new Well 04G since November 22,

2013, and a new treatment system that reduces iron and manganese in the water and increases pH to control corrosion properties in the water. The PWS continues to monitor the water and make adjustments when necessary. In 2017, the PWS installed a new sanitary vented well cap and changed the well pump out. In December of 2018, the MassDEP issued an Administrative Consent Order (ACOP-CE-18-5D00005941) that includes a schedule to address deficiencies identified during a Sanitary Survey, including operation and maintenance of the system. The Consent Order requires upgrades to the treatment, storage and water distribution systems. Upgrades in 2019 included the addition of a 10,000 gallon storage tank, construction of a shed to house the pumping and treatment system, and 90% of a four inch water main was installed. In 2020, we completed the installation of a four-inch water main to comply with the Consent Order. Additionally, we repaired a leak in front of #15 Madden Road.

In 2022, we continued to replace the media in our treatment system as needed to optimize the current treatment while in the process of developing the new treatment system and upgrades. Additionally, a new pump house was constructed for the new treatment system. Grass has grown in the regraded area of the new pump house, treatment equipment install began 9/6/22.

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## WATER SYSTEM NOTIFICATIONS

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### Notice of Lead and Copper Rule (LCR) Violation

Madden Estates is required to provide corrosion control treatment to the drinking water it supplies to its customers to reduce lead levels at consumers' taps. Madden Estates installed an acid neutralizer to control (increase) the pH and buffering capacity of the water to make it less corrosive. An acid neutralizer is a tank to which calcite (calcium carbonate) media is added. As the water comes into contact with this media, it raises the pH of our well water to a neutral pH, making the water less corrosive and thereby reducing the leaching of lead from plumbing materials into the drinking water.

We are required to inform you that our water system failed to maintain proper operation of the corrosion control treatment system during February – April 1, 2019, September 2019 - January 2, 2020, February – April 14, 2020, and July – November 2021, January – December 2022. Our failure to maintain and properly operate this treatment system is a treatment technique violation requiring us to notify our customers within a specified timeline. For 2022, we provided quarterly notifications as required by the Consent Order.

In accordance with the Lead and Copper Rule, Madden Estates is required to collect first draw samples from five customers' taps every six months and to provide the lead and copper results of each tap sample to the resident/occupant within 30 days of when we learn of the results. Notifying participants in our lead and copper sampling program is called a **Consumer Notice**. Both the Quarter 2 and Quarter 4, 2022, samples were **below** the copper 90<sup>th</sup> percentile action level of 1.3 mg/l and the lead 90<sup>th</sup> percentile action level of 0.015 mg/l.

Due to the lead action level exceedances in 2019, we were required to provide a Public Education Program on the health effects of lead in drinking water to our customers. The Public Education program was distributed to all residents on 2/28/2020.

You should know that when the treatment system was not operating optimally, as a result, it is possible that the levels of lead in your tap water may have been elevated. In order to allow the public to determine if their water system is in compliance with the lead and copper rule, MassDEP has provided a link on their webpage at: <https://www.mass.gov/service-details/public-water-systems-90th-percentile-lead-sampling-results> that will bring you to a link to a downloadable spreadsheet that will let you know if your system has exceeded the action level for lead.

#### What should I do?

Listed below are some steps you can take to reduce your exposure to lead and copper in drinking water:



- Find out whether your pipes contain lead or lead solder; most household plumbing contains copper.
- Run your water for 30 seconds or until it becomes cold before using it for drinking or cooking. This flushes any standing lead or copper from the pipes.
- Don't cook with or drink water from the hot water tap; lead and copper dissolves more easily into hot water.
- **Do not boil your water to remove lead or copper.** Excessive boiling of water makes the lead and copper more concentrated - the lead and copper remains when the water evaporates.
- Call us at the number below to find out how to get your water tested for lead and copper.
- If you chose to use a treatment device to control lead levels, select a treatment device that is ANSI/NSF certified for the removal of both particulate and dissolved lead to levels below the lead action level.

If you have health concerns, please contact your health care provider with any questions.

### **What does this mean?**

**This is not an emergency. If it were an emergency, we would have notified you within 24 hours.**

Typically, lead enters the water supply by leaching from home or building service piping, lead solder used in plumbing, and lead and brass pipes and plumbing components. New lead pipes and plumbing components containing lead are no longer allowed for this reason; however, many older homes may contain these types of plumbing materials. Your water is more likely to contain high lead levels if water pipes in or leading to your home or building are made of lead or contain lead solder. Copper pipes are still commonly used in household and building plumbing. Homes that have copper pipes may notice some color changes (green staining) in the sinks, tubs, etc.

*“Lead can cause serious health problems, especially for pregnant women and young children. Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.”*

### **What is being done?**

Madden Estates is currently monitoring water quality by taking the required pH and alkalinity samples (Water Quality Parameters) bi-weekly and scheduling routine maintenance on the treatment system to ensure compliance. Madden Estates is also complying with the Lead and Copper Rule (LCR) and Public Notification Rule by performing the required sampling of lead and copper semi-annually and notifying consumers in the required time frame. Both the Quarter 2 and Quarter 4, 2022, Public Notifications were delivered on time. Madden Estates is also working closely with a Certified Operator, Contractors, and MassDEP to continue to stay in compliance and optimize the treatment system to ensure quality drinking water.

Madden Estates continues to collect lead and copper tap samples in the distribution system at its routine monitoring sites to ensure the treatment system is functioning properly. Madden Estates will provide an updated notice to the customers whose taps were sampled by hand delivery within 30 days of learning the results of the sampling. At the end of 2018 Madden Estates has entered into an Administrative Consent Order with the MassDEP, that establishes timeframes and schedule to implement improvements to the water system to ensure compliance with the Drinking Water Regulations.

The new treatment system installed in the new pump house was approved and activated in April of 2023.

For more information, please contact Fern Maskell at (508)-867-7972.

Madden Estates  
 PWS ID# 2323002  
 46 Madden Road, Unit 19  
 West Brookfield, MA 01585

#508.867.7972

*Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.*

Date Distributed: 06/30/2023

For more information please contact:

**Madden Estates**

**PWS ID# 2303002**

**46 Madden Road, Unit 19**

**West Brookfield, MA 01585**

**#508.867.7972**

This report was prepared by McClure Engineering, Inc.

Also available at <http://www.mcclureengineers.com/>

This notice for **PWS ID# 2323002** was distributed by the **Maskell's** by **6/30/2023**

**IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER**