

## UNIT WELL #11

Drilled in 1956, Unit Well 11 has a pumping capacity of 2300 gallons per minute. It operates year-round and serves Madison's East side including the Emerson East, Eken Park, Marquette, Schenk-Atwood-Starkweather-Yahara, Hawthorne, and Worthington Park neighborhoods and homes in Burke Heights, Hiestand, Rolling Meadows, and Eastmorland. In 2019, the well delivered 605 million gallons of water compared to its 5-year average of 537 million gallons annually.

Unless otherwise noted, data contained in this report, which is updated annually, are from 2019.

### *Bacteria*

In 2019, forty-seven water samples were collected from Well 11 and tested for coliform bacteria, an indicator group of bacteria used to determine drinking water safety. None of the samples were found to have coliform bacteria present. Most samples (43) were chlorinated water while four samples were untreated groundwater. The Water Utility chlorinates drinking water to protect against bacteria and viruses that can be present in groundwater.

### *Hardness and Other Minerals*

Like all groundwater, water from Unit Well 11 contains calcium and magnesium that contributes to its hardness (401 mg/L [ppm] or 23 grains per gallon). Other naturally occurring constituents that are present in water from Well 11 can be found in the [Inorganics Table](#).

### *Iron and Manganese*

Water from Well 11 contains low levels of iron and manganese. Both minerals are well below the US EPA [secondary standards](#), which are 0.3 mg/L for iron and 50 µg/L for manganese.

### *Chromium*

Low levels of naturally occurring chromium, including hexavalent chromium, have been found at Well 11. The level is well below the existing drinking water standard of 100 µg/L for total chromium. More information can be found on the [chromium](#) page.

### *Sodium*

The level of [sodium](#) in Well 11 water exceeds the EPA guideline which recommends drinking water not to exceed 20 mg/L sodium. These guidelines are intended for higher risk populations including individuals with high blood pressure or on severe sodium restricted diets. In 2019, sodium at Well 11 measured 23 mg/L. Road salt application likely contributes to elevated sodium levels at some Madison wells.

## ***Lead***

Madison's groundwater supply does not contain significant amounts of naturally occurring lead.

## ***Radionuclides***

In 2014, water from Well 11 was tested for radium-226, radium-228, and other gross measures of radiation in water. Combined radium (226+228) measured 1.0 picocuries per liter (pCi/L) – well below the maximum contaminant level (MCL) of 5 pCi/L.

Naturally occurring, radioactive elements are found in rock, soil, water, and air. They derive from the creation of our planet and enter our bodies when we drink water, breathe air, and eat foods that contain them. Everyone is exposed to some level of radiation in everyday life. For example, uranium and thorium are found in rock and soil. In time, they decay to other elements including radium, which later decays to radon gas. Radon is the largest contributor to our daily exposure of radiation from the natural world. More information is available from the Agency for Toxic Substances and Disease Registry ([ATSDR](#)).

See [ATSDR](#) for more information on radon.

## ***Man-made Contaminants***

Madison Water Utility annually tests all of its municipal wells for man-made contaminants that may be present in groundwater. In 2019, quarterly samples were collected at Well 11 due to the previous detection of [tetrachloroethylene](#), [cis 1,2-dichloroethylene](#), and trichlorofluoromethane. The [Volatile Organic Compounds](#) table lists the substances that were tested, the results, and how the detected levels compare with the maximum contaminant levels (MCL) established by the EPA.

Low levels of one disinfection by-product (DBP) occasionally also was found at the well. DBPs form when chlorine reacts with impurities in groundwater. Chlorine is added to disinfect water and to guard against bacterial growth in water mains. Finally, routine testing showed the continued presence of a small amount (0.4 µg/L) of [1,4-dioxane](#); an MCL has yet to be established.

### **Per- and Polyfluoroalkyl Substances (PFAS)**

In 2019, eight different [PFAS](#) were confirmed present at Well 11; three others also may be present. The combined PFAS level is estimated to range between 8 and 11 ng/L or parts per trillion (ppt). While there is no state or federal drinking water standard for any PFAS, the Wisconsin Department of Health Services recommended a health-based groundwater standard of 20 ppt for two types of PFAS (PFOA & PFOS). More information about PFAS in drinking water is found on our website, [madisonwater.org](#).

## ***Additional Information***

Information on routine [water quality monitoring](#) activities, including current test results and links to additional resources, is available at [madisonwater.org](#). In addition, you can sign-up to receive periodic updates on Madison drinking water quality or the water main flushing program through the [City of Madison](#) website.

If you have questions about the information in this report or on our website, our staff would be happy to answer them. Please call the Water Quality line at 266-4654 weekdays from 7:45 a.m. to 4:00 p.m.

Click [here](#) to view water quality reports for other Madison municipal wells.