About Your Drinking Water

Marin Municipal Water District (MMWD) has been providing high-quality drinking water to Marin County since 1912. Currently, MMWD provides drinking water to over 190,300 customers in central and southern Marin County.

Seventy-five percent of MMWD’s water comes from 21,600 acres of protected watershed on Mt. Tamalpais and in the grassy hills of west Marin. These areas are either forested MMWD-owned lands or other undeveloped rural lands. Both the Russian River and its tributaries flow into MMWD’s seven reservoirs. Next the water from our treatment plants is delivered to our water treatment plants, and from there flows into Lake Lagunitas and is released into the Russian River. The Russian River is blended naturally through 80 feet of sand beds adjacent to the river. The SCLR water is treated before it is blended with MMWD’s reservoir water within our distribution system.

We are proud to report that in 2017 as in prior years, your water continued to meet or surpass all federal and state drinking water health standards. This report describes where our water comes from, what it contains, how it impacts the state and federal drinking water standards and summarizes the results of the water quality analyses we conducted on your drinking water during 2017.

Notifications & General Information

Attention, Landlords and Other Property Managers

We recommend that landlords and other property managers download this report in a public location where it can be made available for review by tenants or others.

If you would like to obtain multiple copies of this report, please contact our Water Quality Lab at 415-945-1550.

General Information About Drinking Water and Potential Contaminants

Federal regulations require us to include the follow-
ing information in this report. Because it is general information, it does not necessarily apply to the drinking water provided by MMWD. Information specific to MMWD’s drinking water can be found in the tables on the reverse.

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 USEPA’s Safe Drinking Water Information Hotline (1-800-426-4791).

Inorganic contaminants, such as salts and metals, that can be naturally occurring or can be the result of urban storm water runoff, industrial- trial 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 that are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, agricultural applications and septics systems.

Radionuclides, contaminants, which can be natu-

rally occurring or can be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, the U.S. Environmental Protection Agency (USEPA) and the State Water Board (State Board) promulgate regulations that limit the amount of contaminants that can be in your drinking water, as regulated by public water systems. State board regulations also establish standards for contaminants of water that must provide the same protection for public health.

We recommend that you download and print this report and keep it near your water faucet. This will enable you to easily find this report if you have questions about your drinking water. We also recommend that you periodically review this report to ensure you are informed about changes to state and federal drinking water standards.
Is bottled water better than tap?

Water can come from a variety of sources. Tap water that is not treated in a water treatment plant can be contaminated with germs that can make people sick. Water treatment plants use filtration and disinfection processes to make the water safe for people to drink. Present this information to your community and add a disinfectant that kills germs. The most commonly added disinfectants are chlorine and chloramine.

At MMWD's treatment plants chlorine is added to the water as a disinfectant to make the water safe from microbial pathogens. It is safe to drink in the water. However, chlorine can also form disinfection by-products, some of which may be carcinogenic. In order to limit the formation of these by-products, which are regulated by state and federal agencies, MMWD adds ammonia to chlorinated water in the correct proportion to form mono-chloramine.

Specifically, mono-chloramine is a long-lived and very effective disinfectant that is formed by the addition of ammonia to the treated water. It remains in the water for up to 24 hours and continues to kill germs to which it is exposed. Chloramines have been shown to be superior to chlorine, contributing to the following benefits:

- It is effective against a wide range of pathogens, including viruses and other microorganisms.
- It is less likely to form disinfection by-products (DBPs) that can be harmful to health.
- It is more stable in water, reducing the risk of regrowth of microorganisms.
- It is effective against a variety of waterborne illnesses, including Cryptosporidium and Giardia.
- It is less corrosive to water infrastructure compared to chlorine.

Chloramine levels are within the range of 0.6 - 1.2 mg/L. Treatment Plants operate within this range to ensure the water is clean and safe for drinking.

How can I better understand the Water Quality Report?

To help you better understand this report, key definitions are provided below. These definitions apply to all contaminants listed in this report:

- **Maximum Contaminant Level (MCL):** The highest level of a contaminant that is allowed in drinking water. MCLs are set by the U.S. Environmental Protection Agency (EPA) to protect the health of the American people. The MCL for a contaminant reflects the limit above which treatment steps must be taken to reduce the health risk associated with the contaminant. MCLs are set after considering the benefits of the treatment and the potential health effects of the contaminant.

- **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 are set by the U.S. Environmental Protection Agency (EPA) to protect the health of the American people. MCLGs are established to give the public a reasonable margin of safety in drinking water. MCLGs are not enforceable standards.

- **Regulatory Action Level (RAL):** The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.

- **Radon (219, 222-Radon)**: Radon is a naturally occurring radioactive gas that can be present in the air and water in buildings. Radon is the leading cause of lung cancer deaths in the United States, and is responsible for up to 21,000 lung cancer deaths each year. Radon is found in homes and buildings with basements, and can enter through cracks and openings in foundation walls. Radon is not regulated by the EPA, but many states have programs to help homeowners test for and mitigate radon in their homes.

- **Radon Hotline:** The radon hotline is a number that provides information and resources for reducing radon exposure in homes. The hotline can be used to order a radon test kit or to learn more about radon mitigation options.

- **Internal corrosion of household plumbing systems:** The internal corrosion of household plumbing systems can be caused by the combination of water and air. This can result in the formation of rust-like substances in the water, which can be harmful to health. Internal corrosion can be prevented by maintaining proper water quality and using corrosion-resistant materials in plumbing systems.

- **Erosion of Natural Deposits:** Erosion of natural deposits can occur from natural or human activities, such as stormwater runoff or land development. Erosion can result in the movement of soil and sediment, which can contain contaminants such as nutrients, metals, and organic pollutants. Erosion control measures, such as vegetation and sediment barriers, can be used to reduce the risk of erosion.

- **Haloacetic Acids (HAA5):** Haloacetic acids are a group of disinfection by-products that can form when chlorine or other disinfectants react with naturally occurring organic matter in water. HAA5 levels are regulated to protect public health from potential health effects, such as reproductive and neurotoxic effects. The MCL for HAA5 is 60ug/L.

- **Additional information:** Additional information is provided to help you understand the results of the water quality testing. This information includes the source water, treatment plants, and results for each constituent tested.

- **Turbidity:** Turbidity is a measure of the clarity of water. It is related to the amount of suspended particles or sediments in the water. Turbidity can affect the appearance and taste of water, and can be influenced by natural processes such as rainfall or human activities such as construction or agriculture. Turbidity is measured in nephelometric turbidity units (NTU).

- **Dissolved Organic Carbon (DOC):** Dissolved organic carbon is a measure of the amount of organic matter dissolved in water. Organic matter can come from natural sources such as plants and animals, or from human activities such as sewage discharge or industrial waste. DOC is measured in mg/L.

- **TOC (Total Organic Carbon):** TOC is a measure of the total amount of organic matter in water, both dissolved and particulate. It is measured in mg/L.

- **Dissolved Oxygen (DO):** Dissolved oxygen is a measure of the amount of oxygen dissolved in water. Oxygen is important for aquatic life, and its presence can affect the composition of the water. DO is measured in mg/L.

- **pH:** pH is a measure of the acidity or alkalinity of water. It is measured on a scale of 0-14, with 7 being neutral. pH can affect the solubility of substances in water, and can be influenced by natural processes such as rainfall or human activities such as sewage discharge or acid rain. pH is measured on a scale of 0-14.

- **Thermometer:** A thermometer is a device used to measure temperature. It is used to determine the temperature of water, air, or other substances. Thermometers are available in various types, such as digital and analog, and can be used to measure temperature in different units, such as °C or °F.

- **Water Quality Results:** Water quality results are provided for a variety of constituents, including microbial and chemical contaminants. These results are used to assess the quality of the water and to determine if it meets or exceeds regulatory standards. Water quality results are typically reported in units such as µg/L, mg/L, mg/dm³, or ppm.

- **Conductivity:** Conductivity is a measure of the ability of water to conduct electricity. It is related to the concentration of dissolved salts in the water. Conductivity is measured in µS/cm or mS/cm.

- **Calcium:** Calcium is a mineral that is naturally present in the earth's crust. It is an essential nutrient for human health, and can be found in a variety of foods, such as dairy products, leafy greens, and fish. Calcium is also found in water, and can affect the taste and quality of water. Calcium is measured in mg/L.

- **Magnesium:** Magnesium is a mineral that is naturally present in the earth's crust. It is an essential nutrient for human health, and can be found in a variety of foods, such as leafy greens, nuts, and seeds. Magnesium is also found in water, and can affect the taste and quality of water. Magnesium is measured in mg/L.

- **Iron:** Iron is a mineral that is naturally present in the earth's crust. It is an essential nutrient for human health, and can be found in a variety of foods, such as red meat, legumes, and whole grains. Iron is also found in water, and can affect the taste and quality of water. Iron is measured in µg/L or mg/L.

- **Chlorine:** Chlorine is a disinfectant that is widely used in water treatment plants to kill germs and viruses. Chlorine is measured in mg/L.

- **Chloramine:** Chloramine is a disinfectant that is formed by the addition of ammonia to the treated water. Chloramines are more effective than chlorine in killing germs, and are less likely to form disinfection by-products. Chloramines are measured in µg/L or mg/L.

- **Total Dissolved Solids (TDS):** Total dissolved solids are a measure of the concentration of all dissolved substances in water, including salts, minerals, and organic matter. TDS is measured in mg/L.

- **Hardness:** Hardness is a measure of the concentration of calcium and magnesium in water, which can make water feel hard and leave deposits on fixtures. Hardness is measured in mg/L of CaCO₃ equivalent.

- **Corrosivity Index:** The corrosivity index is a measure of the potential for water to corrode metal pipes and fixtures. It is calculated based on the concentration of dissolved solids, pH, and temperature. Corrosivity indices range from 0 (lowest) to 14 (highest), with higher indices indicating a greater risk of corrosion.

- **Acidity:** Acidity is a measure of the concentration of hydrogen ions in water. Acidity can affect the taste and quality of water, and can be influenced by natural processes such as rainfall or human activities such as sewage discharge. Acidity is measured in mg/L as CO₂.

- **Sulfate:** Sulfate is a mineral that is naturally present in the earth's crust. It is an essential nutrient for human health, and can be found in a variety of foods, such as legumes, nuts, and seeds. Sulfate is also found in water, and can affect the taste and quality of water. Sulfate is measured in mg/L.

- **Nitrate:** Nitrate is a mineral that is naturally present in the earth's crust. It is an essential nutrient for human health, and can be found in a variety of foods, such as leafy greens, legumes, and fish. Nitrate is also found in water, and can affect the taste and quality of water. Nitrate is measured in mg/L.

- **Nitrite:** Nitrite is a mineral that is naturally present in the earth's crust. It is an essential nutrient for human health, and can be found in a variety of foods, such as dried meats, pickles, and fermented foods. Nitrite is also found in water, and can affect the taste and quality of water. Nitrite is measured in µg/L.

- **Ammonium:** Ammonium is a mineral that is naturally present in the earth's crust. It is an essential nutrient for human health, and can be found in a variety of foods, such as meat, fish, and dairy products. Ammonium is also found in water, and can affect the taste and quality of water. Ammonium is measured in µg/L.