



220 Nellen Avenue,
Corte Madera, CA 94925

**Inside: Important
Information About Your
Drinking Water**



Annual Water Quality Report

Covering the reporting period of January - December 2018

We are proud to report that in 2018 as in prior years, your water continued to meet or surpass all federal and state drinking water health standards. This report describes where your water comes from, what it contains, and how it compares to the state and federal drinking water standards. It also summarizes the results of the thousands of water quality analyses we conducted on your drinking water during 2018.

About Your Drinking Water

Where Your Water Comes From

As the first municipal water district in California, Marin Municipal Water District (MMWD) has been providing high-quality drinking water since 1912. Today MMWD provides drinking water to 190,800 customers in central and southern Marin County.

Our primary water source originates from rainfall on 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. Rainfall from these watersheds flows into MMWD's seven reservoirs. Next the water from our reservoirs is treated at our water treatment plants, and then travels through an extensive distribution system that includes 900 miles of buried pipe, 128 storage tanks and 97 pump stations on its way to your home or business.

Our Mt. Tamalpais and west Marin water is supplemented with water imported from the Sonoma County Water Agency (SCWA). SCWA water originates from rainfall that flows into Lake Sonoma and Lake Mendocino and is released into the Russian River. The Russian River water is filtered naturally through 80 feet of sand beds adjacent to the river. The SCWA water is treated before it is blended with MMWD's reservoir water within our distribution system.

How We Maintain the Quality of Our Water

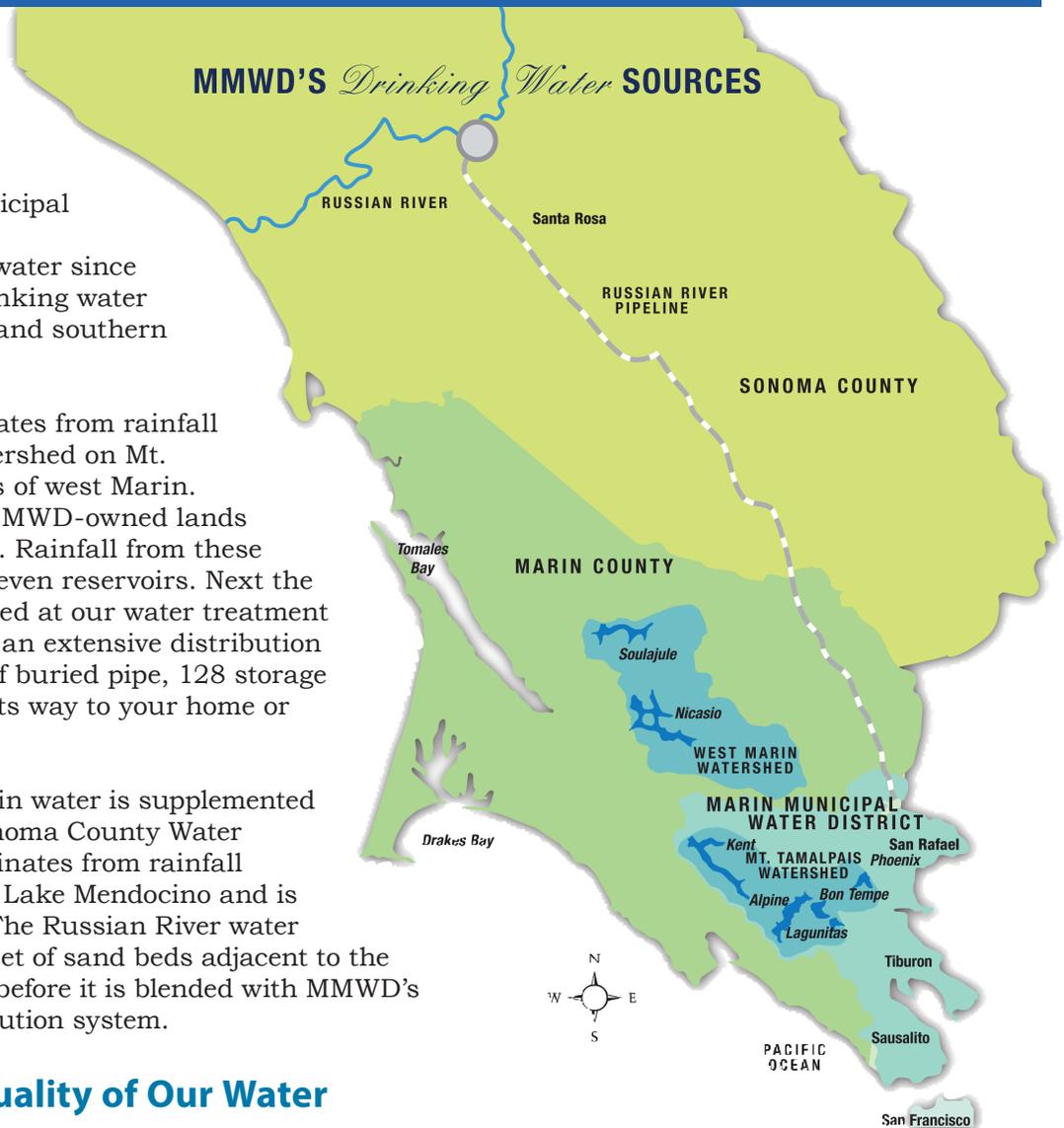
MMWD takes many steps to ensure that the high-quality water delivered to you meets or exceeds federal and state drinking water standards. These steps include carefully managing our watershed lands and reservoirs, treating the water, operating and monitoring a complex distribution system, and maintaining and upgrading our facilities.

Every year MMWD conducts more than 120,000 water quality and process control tests from watershed to faucet to ensure your water is safe to drink. This includes ongoing process control testing at our treatment plants as well as laboratory testing. Many of these samples undergo chemical, bacteriological and physical analysis in the district's water quality laboratory, which is certified by the California Department of Public Health Environmental Laboratory Accreditation Program. Other samples are sent to specialty labs for testing.

The tables in this report show the average level and range of each contaminant detected in the MMWD water supply in 2018. All water supplied to customers during 2018 met the regulatory standards set by the state and federal governments. Additional unregulated parameters, such as sodium levels and hardness, are also included in the tables.

The information in this report is provided in compliance with requirements established by the State Water Resources Control Board Division of Drinking Water and the U.S. Environmental Protection Agency and as a policy of the Marin Municipal Water District to inform customers of the contents of their drinking water and water quality standards. This report and additional water quality information is available on our website:

marinwater.org



Drinking Water Source Assessment

In April 2003 the California Department of Public Health conducted a Drinking Water Source Assessment of MMWD's drinking water sources.

The purpose of this assessment is to identify potential sources of contamination if any exist and to communicate the findings to customers.

For the five reservoirs on the Mt. Tamalpais Watershed (Lagunitas, Bon Tempe, Alpine, Kent and Phoenix), the surrounding watershed is described as "pristine and forested." These sources are considered to be the most vulnerable from recreation use in the area. However, no contaminants associated with this activity were detected in the drinking water.

For Nicasio Reservoir, the surrounding watershed is described as grassy hills and classified as agricultural and rural residential. This source is considered most vulnerable to concentrated animal feeding operations (i.e., local dairy operations). However, no contaminants associated with this activity were detected in the drinking water.

For Soulajule Reservoir, the surrounding watershed is described as grassy hills and classified as agricultural and rural residential. This source is considered most vulnerable to historic mining operations. However, no contaminants associated with this activity were detected in the drinking water. Water in Soulajule Reservoir is held in reserve for use during periods of drought or low rainfall.

Additional information may be found in section 5.6.3.1 of the 2015 Watershed Sanitary Survey available at: marinwater.org/2015WSS

Minimizing Potential Lead Exposure

MMWD's drinking water is virtually lead free. Lead was not detected above the regulatory action level in the MMWD water supply. Lead, when it is present in drinking water, usually comes from older plumbing fixtures or the solder that connects pipes. Water is naturally corrosive and in some cases can corrode plumbing in older homes and buildings, potentially leaching lead into the water.

In response, MMWD maintains an active corrosion control program to reduce the potential for pipes to corrode and leach lead. MMWD regularly performs corrosion tests at the treatment plants and at points throughout the distribution system. Every three years,



MMWD also conducts Lead and Copper Rule (LCR) sampling for lead at a sample of homes built before 1986—when plumbing fixtures like faucets and pipe solder were allowed to contain lead—in compliance with the USEPA LCR.

The EPA requires that 90 percent of the samples be below the regulatory action level of 15 parts per billion. The results of the District's most recent sampling event, in 2018, revealed that 100% of the homes tested were below the regulatory action level. The next lead and copper sampling event will be in 2021.

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.

MMWD 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 do so, you may wish to collect the flushed water and reuse it for another beneficial purpose, such as watering plants.

If you are concerned about lead in your 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 Safe Drinking Water Hotline (1-800-426-4791) or at: www.epa.gov/lead

Lead Testing of Drinking Water in Schools

In 2017, the State Water Resources Control Board Division of Drinking Water directed all permitted water systems in California to provide lead monitoring assistance to all public K-12 schools. Through June 2019, MMWD has assisted 50 public schools in monitoring of lead in their tap water. School monitoring data can be found at: www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/leadsamplinginschools.html

What is 1mg/L?

One milligram per liter = One part per million

One part per million is equivalent to:

1 cent in \$10,000

1 minute in 2 years

1 inch in 16 miles



Photos: San Geronimo Treatment Plant filter basins during construction and completed

Water Treatment Plant Upgrades

MMWD’s water treatment plants are essential to providing high-quality water for our customers. Our two primary treatment plants—San Geronimo and Bon Tempe—were constructed in the late 1950s and early 1960s. We are in the midst of a series of phased upgrades to the plants that will extend the lifespan and improve the reliability of our water treatment operations.

In 2018 the District completed \$9 million in seismic upgrades to the filter basins at both plants, and over the next 10 years, we plan to invest an additional \$16 million to upgrade the clarifiers and washwater basins. These important infrastructure projects will help ensure we can continue to provide safe, reliable drinking water, even in the event of a major earthquake.

Key Water Quality Terms

To help you better understand this report, the following are key definitions of the water quality standards and goals noted in the data tables:

Maximum Contaminant Level (MCL): The highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the PHGs (or MCLGs) as is economically and technologically feasible.

Secondary Maximum Contaminant Levels (SMCL): Secondary MCLs address aesthetic qualities of water and are set to protect the odor, taste and appearance of drinking water.

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.

Maximum Residual Disinfectant Level (MRDL): The level of a disinfectant added for water treatment that may not be exceeded at the consumer’s tap.

Maximum Residual Disinfectant Level Goal (MRDLG): The level of a disinfectant added for water treatment below which there is no known or expected risk to health. MRDLGs are set by the U.S. Environmental Protection Agency.

Primary Drinking Water Standard (PDWS): MCLs and MRDLs for contaminants that affect health along with their monitoring and reporting requirements and water treatment requirements.

Public Health Goal (PHG): The level of a contaminant in drinking water below which there is no known or expected risk to health. PHGs are set by the California Environmental Protection Agency.

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

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

Abbreviations

mg/L = milligrams per liter (equals parts per million)
 µg/L = micrograms per liter (equals parts per billion)
 TON = Threshold Odor Number
 NA = Not Applicable
 ND = Not Detected

pCi/L = PicoCuries per liter
 µS/cm = microSiemens per centimeter
 NTU = Nephelometric Turbidity Units
 SCWA = Sonoma County Water Agency
 MCL = Maximum Contaminant Level

NL = Notification Level
 PHG = Public Health Goal
 UCMR = Unregulated Contaminant Monitoring Rule

2018 Water Quality Results

DETECTED CONTAMINANTS WITH PRIMARY MCL, AL, OR TT

DISTRIBUTION SYSTEM

CONSTITUENT	UNITS	MCLG		AVERAGE	RANGE	SOURCE
		(PHG)	MCL			
Coliform Bacteria	% presence	0	5	2.1 [1]	0 - 2.1	Naturally present in the environment
Copper	mg/L	(0.3)	1.3 [2]	0.15 [3]	No site over action level	Internal corrosion of household plumbing systems
Lead	µg/L	(0.2)	15 [2]	ND [3]	No site over action level	Internal corrosion of household plumbing systems
Haloacetic Acids	µg/L	NA	60 [4]	19 [5]	3 - 24 [6]	By-product of drinking water disinfection
Total Trihalomethanes	µg/L	NA	80 [4]	34 [5]	12 - 52 [6]	By-product of drinking water disinfection
Chloramines	mg/L	4 [7]	4 [7]	1.67	ND - 2.80	Drinking water disinfectant added for treatment

[1] Highest percentage of positive samples collected in any one month.

[2] Action level for 90th percentile value.

[3] 50 sites were analyzed in 2018, and the sixth highest concentration out of 50 (90th percentile) is listed.

[4] Compliance is based on the locational four quarter running average of distribution system samples.

[5] Highest locational running annual average for 2018. This value is compared to the MCL.

[6] Range of individual sample results for all monitoring locations

[7] Maximum Residual Disinfection Level (MRDL) is a term used for disinfectants such as chloramine, in contrast to Maximum Contaminant Level (MCL) used for other parameters. The Maximum Residual Disinfectant Level Goal (MRDLG) is the same as the MCL. Disinfection provides protection from viruses and bacteria, such as E. coli.

TURBIDITY

CONSTITUENT TURBIDITY [3]	UNITS	PHG	TT	MINIMUM % MEETING		SOURCE
				TURBIDITY LIMITS	RANGE	
Filtered Reservoir Water	NTU	NA	0.3 [1]	100%	0.04 - 0.18	Soil runoff
Filtered Reservoir Water	NTU	NA	1 [2]	100%	0.04 - 0.18	Soil runoff

[1] 95% of all readings shall be less than or equal to this value.

[2] No single reading shall exceed 1 NTU.

[3] Turbidity is a measure of the cloudiness of water. We monitor turbidity because it is a good indicator of the effectiveness of our filtration system.

SOURCE WATER

CONSTITUENT	UNITS	MCLG		Reservoir Water AVG	RANGE	SCWA Water AVG	RANGE	SOURCE
		(PHG)	MCL (AL)					
Radium 228 [1]	pCi/L	0	5	ND	ND - 0.1	ND	ND	Erosion of Natural Deposits

[1] 2016 data.

OTHER DETECTED CONTAMINANTS INCLUDING THOSE WITH SECONDARY MCLS (SMCL)

CONSTITUENT	UNITS	SMCL	Reservoir Water		SCWA Water		SOURCE
			AVERAGE	RANGE	AVERAGE	RANGE	
Odor	TON	3	ND	ND - 1	ND	ND	Naturally occurring organic materials
Chloride	mg/L	500	33	30 - 39	8	8 - 9	Runoff/leaching of natural deposits
Specific Conductance	µS/cm	1,600	238	194 - 290	307	277 - 331	Substances that form ions in water
Sulfate	mg/L	500	5	3 - 7	14	13 - 15	Runoff/leaching of natural deposits
Total Dissolved Solids	mg/L	1,000	120	103 - 136	170	156 - 181	Runoff/leaching of natural deposits
Turbidity	NTU	5	0.08	0.04 - 0.21	0.07	0.05 - 0.14	Soil runoff
Zinc	mg/L	5.0	0.20	0.18 - 0.21	0.19	0.18 - 0.20	Corrosion inhibitor
Sodium	mg/L	NA	21	16 - 25	21	19 - 22	
Hardness [1]	mg/L	NA	64	56 - 66	119	108 - 128	
Hardness	grains/gal	NA	3.7	3.3 - 3.9	7.0	6.3 - 7.5	
Alkalinity [1]	mg/L	NA	55	42 - 72	136	119 - 149	
Radon [2]	pCi/L	NA	NA	NA	110	110	

[1] Expressed as Calcium Carbonate or CaCO₃.

[2] Radon is a naturally occurring radioactive gas of geologic origin. It can migrate into indoor air through cracks in foundations. Tap water contributions to indoor air are small by comparison. Breathing air containing radon can lead to lung cancer. Ingesting water that contains radon may increase the risk of incurring stomach cancer. For additional information, contact USEPA's radon hotline (800-767-7236).

UNREGULATED CONTAMINANT MONITORING RULE 4 (UCMR4) DATA*

CONSTITUENT	UNITS	NL [MCL]	Reservoir Water		SCWA Water		HEALTH EFFECTS
			AVERAGE	RANGE	AVERAGE	RANGE	
Total Organic Carbon [1]	mg/L	NA	2.9	1.9 - 4.1	NA	NA	
Bromide [1]	µg/L	NA	31	25 - 42	NA	NA	
Manganese [2]	µg/L	500	2.8	0.6 - 12.2	ND	ND	Manganese exposures resulted in neurological effects
HAA9 [3]	µg/L	NA	22	8 - 35	NA	NA	

[1] 2018 source water data collected under UCMR4.

[2] 2018 distribution entry point data collected under UCMR4

[3] 2018 distribution data collected under UCMR4. Sum of Bromochloroacetic Acid, Bromodichloroacetic Acid, Chlorodibromoacetic Acid, Dibromoacetic Acid, Dichloroacetic Acid, Monobromoacetic Acid, Monochloroacetic Acid, Tribromoacetic Acid, and Trichloroacetic Acid

*Unregulated contaminant monitoring helps EPA and the State Water Resources Control Board to determine where certain contaminants occur and whether the contaminants need to be regulated.

DISTRIBUTION SYSTEM FLUORIDE

UNITS	TT	AVERAGE	RANGE
mg/L	0.6 - 1.2	0.74	0.59 - 0.86

Fluoride occurs naturally in almost all surface and ground waters. Following a voter initiative passed in 1972, the fluoride level is maintained at 0.7 mg/L, the optimum level for cavity prevention.

Notifications & General Information

Attention: Landlords and Other Property Managers

We recommend that landlords and other property managers display this report in a public location such as a lobby, laundry room or community room. If you would like to receive additional copies of this report, please call MMWD's Water Quality Laboratory at 415-945-1550.

Atención: Consumidores Que Hablan Español

Este informe contiene información muy importante sobre su agua potable. Tradúzcalo o hable con alguien que lo entienda bien. Para más información, o para solicitar una copia del reporte en Español, llame 415-945-1453.

Contact Us

If you have questions about water quality, please contact our Water Quality Laboratory at 415-945-1550 or waterquality@marinwater.org.

Special Notice for Immuno-Compromised Persons

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. U.S. EPA/Centers for Disease Control (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).

Public Meetings

MMWD's Board of Directors meets at 7:30 p.m. on the first and third Tuesdays of every month in the MMWD Board Room, 220 Nellen Avenue, Corte Madera, unless otherwise noticed. All board meetings are open to the public.

Federally Required Information About Drinking Water & Potential Contaminants

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 Hotline (1-800-426-4791).

The 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 (untreated) water include:

- Microbial contaminants, such as viruses and bacteria, that may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife.
- Inorganic contaminants, such as salts and metals, that can be naturally occurring or can be the result

of urban storm water runoff, industrial or 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 septic systems.
- Radioactive contaminants, which can be naturally 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 Resources Control Board (State Board) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. State Board regulations also establish limits for contaminants in bottled water that must provide the same protection for public health.