



Santa Margarita
Water District

2016 Water Quality Report

DATA FOR 2015

Your 2016 Water Quality Report

Since 1990, California public water utilities have been providing an annual Water Quality Report to their customers. **This year's report covers calendar year 2015 drinking water quality testing and reporting.**

Santa Margarita Water District (SMWD) vigilantly safeguards its water supply and, as in years past, the water delivered to your home meets the quality standards required by federal and state regulatory agencies. The U.S. Environmental Protection Agency (USEPA) and the State Water Resources Control Board, Division of Drinking Water (DDW) are the agencies responsible for establishing and enforcing drinking water quality standards.

The Metropolitan Water District of Southern California (MWDSC), which supplies treated imported surface water to SMWD, tests for unregulated chemicals in our water supply.



Unregulated chemical monitoring helps USEPA and DDW determine where certain chemicals occur and whether new standards need to be established for those chemicals to protect public health.

Through drinking water quality testing programs carried out by MWDSC for treated surface water and the SMWD for the distribution system, your drinking water is constantly monitored from source to tap for regulated and unregulated constituents.

In most cases, SMWD goes beyond what is required by more frequent testing on chemicals that may have known health risks but do not have drinking water standards.

The State allows us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of our data, though more than one year old, are representative.



The Quality of Your Water is Our Primary Concern

Sources of Supply

Your drinking water is surface water imported by the MWDSC. MWDSC's imported water sources are the Colorado River and the State Water Project, which draws water from the Sacramento-San Joaquin River Delta.

Basic Information About Drinking Water Contaminants

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 land or through the layers of the ground it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animal and 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 runoff, industrial or domestic wastewater discharges, oil and gas production, mining and farming.
- **Radioactive contaminants**, which can be naturally occurring or be the result of oil and gas production or mining activities.
- **Pesticides and herbicides**, which may come from a variety of sources such as agriculture, urban stormwater runoff and residential uses.
- **Organic chemical contaminants**, including synthetic and volatile organic chemicals, are by-products of industrial processes and petroleum production, and can also come from gasoline stations, urban stormwater runoff, agricultural application and septic systems.

In order to ensure that tap water is safe to drink, USEPA and the DDW prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. 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 at (800) 426-4791 or check their website at: www.epa.gov/safewater.

Disinfectants and Disinfection Byproducts

Disinfection of drinking water was one of the major public health advances in the 20th century. Disinfection was a major factor in reducing waterborne disease epidemics caused by pathogenic bacteria and viruses, and it remains an essential part of drinking water treatment today.

Water imported from MWDSC contains chloramines, a combination of chlorine and ammonia, as a drinking water disinfectant. Chloramines are effective killers of bacteria and other microorganisms that may cause disease.

Chlorine disinfection has almost completely eliminated from our lives the risks of microbial waterborne diseases. Chlorine is added to your drinking water at the source (surface water treatment plant). Enough chlorine is added so that it does not completely dissipate through the distribution



system pipes. This chlorine helps to prevent the growth of bacteria in the pipes that carry drinking water from the source into your home.

However, chlorine can react with naturally-occurring materials in the water to form unintended chemical

byproducts, called disinfection byproducts (DBPs), which may pose health risks.

A major challenge is how to balance the risks from microbial pathogens and DBPs. It is important to provide protection from these microbial pathogens while simultaneously ensuring decreasing health risks from disinfection byproducts.

The Safe Drinking Water Act requires the USEPA to develop rules to achieve these goals.

Trihalomethanes (THMs) and Haloacetic Acids (HAAs) are the most common and most studied DBPs found in drinking water treated with chlorine.

In 1979, the USEPA set the maximum amount of total THMs allowed in drinking water at 100 parts per

billion as an annual running average. Effective in January 2002, the Stage 1 Disinfectants / Disinfection Byproducts Rule lowered the total THM maximum contaminant level to 80 parts per billion and added HAAs to the list of regulated chemicals in drinking water.

Stage 2 of the regulation was finalized by USEPA in 2006, which further controls allowable levels of DBPs in drinking water without compromising disinfection itself. A required distribution system evaluation was completed in 2008 and a Stage 2 monitoring plan has been approved by DDW. Full Stage 2 compliance began in 2012. Your drinking water complies with the Stage 2 Disinfectants / Disinfection Byproducts Rule.

Chloramines form less disinfectant by-products. People who use dialysis machines may want to take special precautions and consult their physician for appropriate type of water treatment. Customers who maintain fish ponds, tanks or aquaria should also make necessary adjustments in water quality treatment, as these disinfectants are toxic to fish.

Questions about your water? Contact us for answers.

For information about this report, or your water quality in general, please contact Rachel Pasco, Laboratory Supervisor, at (949) 459-6674.

The Santa Margarita Water District Board of Directors meets the first Wednesday at 7 p.m. and the third Friday at 7:30 p.m. of each month in the Board Room at 26111 Antonio Parkway, Rancho Santa Margarita, California 92688. Please feel free to participate in these meetings.

For more information about the health effects of the listed contaminants in the following tables, call the USEPA hotline at (800) 426-4791. The USEPA also maintains a water-related website at www.epa.gov/safewater.

This report contains important information about your drinking water. Translate it, or speak with someone who understands it.

Este informe contiene información muy importante sobre su agua potable. Tradúzcalo o hable con alguien que lo entienda bien.

Important Information the EPA Would Like You to Know

Issues in Water Quality that Could Affect Your Health

About Lead in Tap Water

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. SMWD 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 water, you may wish to have your water



What are Water Quality Standards?

Drinking water standards established by USEPA and DDW set limits for substances that may affect consumer health or aesthetic qualities of drinking water. The chart in this report shows the following types of water quality standards:

- **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.
- **Maximum Residual Disinfectant Level (MRDL):** The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.
- **Secondary MCLs:** Set to protect the odor, taste, and appearance of drinking water.
- **Primary Drinking Water Standard:** MCLs for contaminants that affect health along with their monitoring and reporting requirements and water treatment requirements.
- **Regulatory Action Level (AL):** The concentration of a contaminant, which, if exceeded, triggers treatment or other requirements that a water system must follow.

How are Contaminants Measured?

Water is sampled and tested throughout the year.

Contaminants are measured in:

- parts per million (ppm) or milligrams per liter (mg/L)
- parts per billion (ppb) or micrograms per liter (µg/L)
- parts per trillion (ppt) or nanograms per liter (ng/L)

What is a Water Quality Goal?

In addition to mandatory water quality standards, USEPA and DDW have set voluntary water quality goals for some contaminants. Water quality goals are often set at such low levels that they are not achievable in practice and are not directly measurable. Nevertheless, these goals provide useful guideposts and direction for water management practices. The chart in this report includes three types of water quality goals:

- **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 USEPA.
- **Maximum Residual Disinfectant Level Goal (MRDLG):** The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.
- **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.

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, (800) 426-4791, or at: www.epa.gov/safewater/lead.

Cryptosporidium

Cryptosporidium is a microscopic organism that, when ingested, can cause diarrhea, fever, and other gastrointestinal symptoms. The organism comes from animal and/or human wastes and may be in surface water. MWDC tested their source water and treated surface water for *Cryptosporidium* in 2015 but did not detect it. If it ever is detected, *Cryptosporidium* is eliminated by an effective treatment combination including sedimentation, filtration and disinfection.

The USEPA and the federal Centers for Disease Control guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from USEPA's Safe Drinking Water hotline at (800) 426-4791 between 10 a.m. and 4 p.m. Eastern Time (7 a.m. to 1 p.m. in California).

Drinking Water Fluoridation

Fluoride has been added to U.S. drinking water supplies since 1945. Of the 50 largest cities in the U.S., 43 fluoridate their drinking water.

In December 2007, MWDC joined a majority of the nation's public water suppliers in adding fluoride to drinking water in order to prevent tooth decay. In line with recommendations from the DDW, as

2015 Metropolitan Water District of Southern California Treated Surface Water

Chemical	MCL	PHG, or (MCLG)	Average Amount	Range of Detections	MCL Violation?	Typical Source of Chemical
Radiologicals – Tested in 2014						
Alpha Radiation (pCi/L)	15	(0)	ND	ND – 4	No	Erosion of Natural Deposits
Beta Radiation (pCi/L)	50	(0)	5	4 – 6	No	Decay of Man-made or Natural Deposits
Uranium (pCi/L)	20	0.43	3	2 – 3	No	Erosion of Natural Deposits
Inorganic Chemicals – Tested in 2015						
Aluminum (ppm)	1	0.6	0.155	0.073 – 0.24	No	Treatment Process Residue, Natural Deposits
Arsenic (ppb)	10	0.004	2.3	2.3	No	Production Wastes, Natural Deposits
Barium (ppm)	1	2	0.125	0.125	No	Refinery Discharge, Erosion of Natural Deposits
Fluoride (ppm) treatment-related	Control Range 0.6 – 1.2 ppm Optimal Level 0.7 ppm		0.8	0.6 – 1	No	Water Additive for Dental Health
Secondary Standards* – Tested in 2015						
Aluminum (ppb)	200*	600	155	73 – 240	No	Treatment Process Residue, Natural Deposits
Chloride (ppm)	500*	n/a	100	98 – 101	No	Runoff or Leaching from Natural Deposits
Color (color units)	15*	n/a	1	1	No	Naturally-occurring Organic Materials
Odor (threshold odor number)	3*	n/a	2	2	No	Naturally-occurring Organic Materials
Specific Conductance (µmho/cm)	1,600*	n/a	1,040	1,040	No	Substances that Form Ions in Water
Sulfate (ppm)	500*	n/a	257	253 – 261	No	Runoff or Leaching from Natural Deposits
Total Dissolved Solids (ppm)	1,000*	n/a	663	660 – 665	No	Runoff or Leaching from Natural Deposits
Unregulated Chemicals – Tested in 2015						
Alkalinity, total as CaCO ₃ (ppm)	Not Regulated	n/a	126	120 – 131	n/a	Runoff or Leaching from Natural Deposits
Boron (ppm)	NL = 1	n/a	0.12	0.12	n/a	Runoff or Leaching from Natural Deposits
Calcium (ppm)	Not Regulated	n/a	78	76 – 80	n/a	Runoff or Leaching from Natural Deposits
Hardness, total as CaCO ₃ (ppm)	Not Regulated	n/a	303	300 – 306	n/a	Runoff or Leaching from Natural Deposits
Hardness, total (grains/gallon)	Not Regulated	n/a	18	18	n/a	Runoff or Leaching from Natural Deposits
Magnesium (ppm)	Not Regulated	n/a	27	26 – 27	n/a	Runoff or Leaching from Natural Deposits
pH (pH units)	Not Regulated	n/a	8.1	8.1	n/a	Hydrogen Ion Concentration
Potassium (ppm)	Not Regulated	n/a	4.9	4.8 – 5	n/a	Runoff or Leaching from Natural Deposits
Sodium (ppm)	Not Regulated	n/a	101	98 – 104	n/a	Runoff or Leaching from Natural Deposits
Total Organic Carbon (ppm)	TT	n/a	2.6	2.3 – 2.7	n/a	Various Natural and Man-made Sources

ppb = parts-per-billion; ppm = parts-per-million; pCi/L = picoCuries per liter; µmho/cm = micromhos per centimeter; ND = not detected; MCL = Maximum Contaminant Level; (MCLG) = federal MCL Goal; PHG = California Public Health Goal; NL = Notification Level; n/a = not applicable; TT = treatment technique *Chemical is regulated by a secondary standard.

Turbidity – combined filter effluent Metropolitan Water District Diemer Filtration Plant	Treatment Technique	Turbidity Measurements	TT Violation?	Typical Source of Chemical
1) Highest single turbidity measurement	0.3 NTU	0.04	No	Soil Runoff
2) Percentage of samples less than 0.3 NTU	95%	100%	No	Soil Runoff

Turbidity is a measure of the cloudiness of the water, an indication of particulate matter, some of which might include harmful microorganisms. NTU = nephelometric turbidity units. Low turbidity in Metropolitan's treated water is a good indicator of effective filtration. Filtration is called a "treatment technique" (TT). A treatment technique is a required process intended to reduce the level of chemicals in drinking water that are difficult and sometimes impossible to measure directly.

Unregulated Chemicals Requiring Monitoring

Chemical	Notification Level	PHG	Average Amount	Range of Detections	Most Recent Sampling Date
Chlorate (ppb)	800	n/a	59	59	2014
Chromium, Hexavalent (ppb)**	MCL = 10	0.02	0.061	0.061	2014
Molybdenum, Total (ppb)	n/a	n/a	4.1	4.1	2014
Strontium, Total (ppb)	n/a	n/a	900	900	2014
Vanadium, Total (ppb)	50	n/a	2.5	2.5	2014

**Hexavalent chromium is regulated with an MCL of 10 ppb but was not detected, based on the detection limit for purposes of reporting of 1 ppb. Hexavalent chromium was included as part of the unregulated chemicals requiring monitoring.

well as the U.S. Centers for Disease Control and Prevention, MWDSC adjusted the natural fluoride level in imported treated water from the Colorado River and State Water Project to the optimal range for dental health of 0.6 to 1.2 parts per million. Fluoride levels in drinking water are limited under California state regulations at a maximum dosage of 2 parts per million.



Additional information about the fluoridation of drinking water is available on these websites:

U.S. Centers for

Disease Control and Prevention

1 (800) 232-4636 • www.cdc.gov/fluoridation/

State Water Resources Control Board,

Division of Drinking Water

www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/Fluoridation.shtml

For more information about MWDSC's fluoridation program, please contact Edgar G. Dymally at (213) 217-5709 or at edymally@mwdh2o.com.

Immuno-Compromised People

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised people, such as those with cancer who are undergoing chemotherapy, persons who have had organ transplants, people with HIV/AIDS or other immune system disorders, some elderly persons and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers.

Water Conservation Tips for Inside Your Home . . . and for Outside Your Home

Install aerators on the kitchen faucet
Reduces flow to less than 1 gallon per minute

Soak pots and pans instead of letting water run while you scrub them clean

Saves water and makes the job easier

Cook food in as little water as possible
Saves water and helps retain food nutrients

Keep a pitcher of drinking water in the refrigerator
Saves gallons of water and it's always cold

Wash only full loads of laundry and dishes
Saves up to 50 gallons per week

Install low-flow shower heads
Saves 2.5 gallons per shower

Buy water-saving devices like high-efficiency toilets and clothes washers. You'll save many gallons of water per day, and many of them are eligible for rebates. To learn more, visit www.ocwatersmart.com.

Check your sprinkler system and correct for overspray and broken sprinkler heads

Saves 12-15 gallons each time you water

Choose drip irrigation for your trees and shrubs

Saves up to 15 gallons each time you water

Use a broom instead of a hose
It takes very little time to sweep and the water savings add up



Water plants in the early morning
Reduces evaporation and ensures deeper watering

Plant drought-resistant trees and plants
Saves about 30-60 gallons per 1,000 sq. ft. each time you water

Use organic mulch around trees and plants to reduce evaporation, improve the soil & prevent weeds
Saves about 20-30 gallons per 1,000 sq. ft. each time you water

Additional water saving steps and devices are also available, and some of these are eligible for substantial rebates. Also, water your garden deeply to promote healthier, stronger plants. Regular pruning will help your plants use water more efficiently.

Talk to your family and friends about saving water. If everyone does a little, we all benefit a lot.

Source Water Assessments

Imported (MWDSC) Water Assessment

Every five years, MWDSC is required by DDW to examine possible sources of drinking water contamination in its State Water Project and Colorado River source waters.

In 2012, MWDSC submitted to DDW its updated Watershed Sanitary Surveys for the Colorado River and State Water Project, which include suggestions for how to better protect these source waters. Both source waters are exposed to stormwater runoff, recreational activities, wastewater discharges, wildlife, fires, and other watershed-related factors that could affect water quality.

Water from the Colorado River is considered to be most vulnerable to contamination from recreation, urban/stormwater runoff, increasing urbanization in the watershed, and wastewater. Water supplies from Northern California's State Water Project are most vulnerable to contamination from urban/stormwater runoff, wildlife, agriculture, recreation, and wastewater.

USEPA also requires MWDSC to complete one Source Water Assessment (SWA) that utilizes information collected in the watershed sanitary surveys. MWDSC completed its SWA in December 2002. The SWA is used to evaluate the vulnerability of water sources to contamination and helps determine whether more protective measures are needed.

A copy of the most recent summary of either Watershed Sanitary Survey or the SWA can be obtained by calling MWDSC at (213) 217-6850.

Want Additional Information?

There's a wealth of information on the internet about Drinking Water Quality and water issues in general. A good place to begin your research is the Santa Margarita Water District website:

www.smwd.com

In addition to extensive information about your local water and the support and services we offer, you'll find links for many other local, statewide, and national resources.

2015 Santa Margarita Water District Distribution System Water Quality

Disinfection Byproducts	MCL (MRDL/MRDLG)	Average Amount	Range of Detections	MCL Violation?	Typical Source of Contaminant
Total Trihalomethanes (ppb)	80	43	24.2 – 51.9	No	Byproducts of Chlorine Disinfection
Haloacetic Acids (ppb)	60	19	4.8 – 22.9	No	Byproducts of Chlorine Disinfection
Chlorine Residual (ppm)	(4 / 4)	1.7	0.6 – 1.7	No	Disinfectant Added for Treatment
Aesthetic Quality					
Color (color units)	15*	1.5	1 – 3	No	Erosion of Natural Deposits
Odor (threshold odor number)	3*	1	1	No	Erosion of Natural Deposits
Turbidity (NTU)	5*	0.18	0.012 – 1.77	No	Erosion of Natural Deposits

Eight locations in the distribution system are tested quarterly for total trihalomethanes and haloacetic acids; thirty-six locations are tested monthly for color, odor, and turbidity. MRDL = Maximum Residual Disinfectant Level; MRDLG = Maximum Residual Disinfectant Level Goal

*Contaminant is regulated by a secondary standard to maintain aesthetic qualities (taste, odor, color).

Bacterial Quality	MCL	MCLG	Highest Monthly Positive Samples	MCL Violation?	Typical Source of Contaminant
Total Coliform Bacteria	5.0%	0	1.2%	No	Naturally Present in the Environment

No more than 5% of the monthly samples may be positive for total coliform bacteria.

The occurrence of 2 consecutive total coliform positive samples, one of which contains fecal coliform/*E.coli*, constitutes an acute MCL violation.

Lead and Copper Action Levels at Residential Taps

	Action Level (AL)	Health Goal	90 th Percentile Value	Sites Exceeding AL / Number of Sites	AL Violation?	Typical Source of Contaminant
Lead (ppb)	15	0.2	ND	0 / 54	No	Corrosion of Household Plumbing
Copper (ppm)	1.3	0.3	0.104	0 / 54	No	Corrosion of Household Plumbing

Every three years, 50 residences are tested for lead and copper at-the-tap. Santa Margarita Water District tested 54 homes in the most recent set of samples collected in September 2015.

Lead was detected in 4 samples; none exceeded the action level (AL). Copper was detected in 42 samples; none exceeded the AL.

A regulatory action level is the concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.

Unregulated Chemicals Requiring Monitoring in the Distribution System

Chemical	Notification Level	PHG	Average Amount	Range of Detections	Most Recent Sampling Date
Chlorate (ppb)	800	n/a	40	40	2014
Chromium, Hexavalent (ppb)**	MCL = 10	0.02	0.039	0.039	2014
Molybdenum, Total (ppb)	n/a	n/a	5.1	5.1	2014
Strontium, Total (ppb)	n/a	n/a	1,200	1,200	2014
Vanadium, Total (ppb)	50	n/a	2.8	2.8	2014

**Hexavalent chromium is regulated with an MCL of 10 ppb but was not detected, based on the detection limit for purposes of reporting of 1 ppb. Hexavalent chromium was included as part of the unregulated chemicals requiring monitoring.

Water Conservation: Be Water Wise All Year Long



Winter storms this year boosted California's largest reservoirs to their historically average levels, but other key reservoirs remain critically low as our historic drought keeps its grip on the state. One average season does not overcome the effects of four dry years, and rain and snowfall were well below average in Southern California.

Conserving water in our homes and businesses remains vitally important. There are many areas within our homes where we can save water, particularly outdoors, where our gardens and lawns receive almost 60% of all the water we use. To learn more about the drought, or to find useful tips for how to conserve water, visit:

www.SaveOurWater.com or www.BeWaterWise.com

To learn about programs and devices that can help save water, along with information on rebates for these water saving resources, visit:

www.SMWD.com



**Santa Margarita
Water District**

Santa Margarita Water District

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