


ANNUAL WATER QUALITY REPORT

City of 
Merced
Gateway to Yosemite

REPORTING YEAR 2014

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

The City of Merced **WORKS HARD TO PROVIDE QUALITY WATER** for you!

We are once again proud to present our annual water quality report covering all testing performed between January 1 and December 31, 2014. Over the years, we have dedicated ourselves to producing drinking water that meets all state and federal standards. We continually strive to adopt new methods for delivering the best-quality drinking water to you. As new challenges to drinking water safety emerge, we remain vigilant in meeting the goals of source water protection, water conservation, and community education while continuing to serve the needs of all our water users. Please remember that we are always available to assist you should you ever have any questions or concerns about your water.



PWS ID# 2410009

Photo by Mitchell Fleitz

ABOUT US

The Merced water system had its beginnings in the pioneer efforts of C. H. Huffman and Charles Crocker in 1868, when they established the Merced Water Company. The company was responsible for construction of Lake Yosemite. The first connections to the City of Merced in 1899 were made possible by a 16-inch line from Lake Yosemite. In 1917, the domestic water was changed to a well system and the largest capacity elevated storage tank in California at the time was built (300,000 gallons).








In 1973, the City of Merced Water Division assumed operations from the privately owned Merced Water Company and has maintained operation ever since. The current system is composed of 20 groundwater production wells located throughout the city, approximately 350 miles of main lines, and four water tower tanks for storage. Well pump operators ensure reliability and adequate system pressure at all times to satisfy customer demand. Diesel-powered generators help maintain uninterrupted operations during power outage. The City of Merced water system delivered more than 22 million gallons of drinking water per day in 2014 to approximately 20,427 residential, commercial, and industrial customer locations. The City of Merced Water Division is operated by the Public Works Department.

UNDERSTANDING OUR WATER CONSERVATION RULES

Many people ask for clarification on the Water Conservation Rules for the City of Merced. Important guidelines include: washing cars with a hose that is fitted with a shut off nozzle, use a broom instead of washing the sidewalk or driveway unless needed to protect the public health and safety, also fundraising car washes should only be held at an established car washing facility to prevent run-off from entering our storm drains and to save water.

If you have a vegetable garden it is suggested to only plant what can be consumed, it's ok to water it any day but Mondays. The most important thing is not to be wasteful. Run-off is your sign to turn it off! The rules specifically prohibit watering so much that you get run-off.

Please follow the schedule below:

MON	TUES	WED	THURS	FRI	SAT	SUN
						

EVEN

ADDRESSES ENDING IN 0, 2, 4, 6, 8
CAN WATER ON **TUESDAY AND SATURDAY.**

ODD

ADDRESSES ENDING IN 1, 3, 5, 7, 9
CAN WATER ON **WEDNESDAY AND SUNDAY.**

**WATERING HOURS ARE BEFORE 9AM OR AFTER 9PM.
NO WATERING ON MONDAY, THURSDAY OR FRIDAY.**

IMPORTANT HEALTH INFORMATION

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised 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 may be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The U.S. EPA/ CDC (Centers for Disease Control and Prevention) guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline at (800) 426-4791 or <http://water.epa.gov/drink/hotline>.

LEAD IN HOME PLUMBING

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. We are 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 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 or at www.epa.gov/safewater/lead.

SOURCE WATER ASSESSMENT

An assessment of the drinking water sources for the City of Merced's water system was completed in March 2003. The sources are considered vulnerable from the following activities: gas stations (current and historic), dry cleaners, known contaminant plumes, leaking underground storage tanks, sewer collection system, chemical/petroleum pipeline, fertilizer, pesticide/herbicide application, agricultural drainage, farm chemical distributor/application service, low density septic system, agricultural wells, and irrigation wells. A copy of the complete assessment is available at the City of Merced, Public Works Department, 1776 Grogan Avenue, Merced, CA 95341. You may request a summary of the assessment to be sent to you by contacting Public Works Customer Service at (209) 385-6800.

RECLAIMED AND REUSED

Wastewater treatment is the process that removes the majority of the contaminants from wastewater or sewage and produces a liquid effluent known as treated water or recycled water. This water is safe for discharge to the natural environment.

In 2014, the City of Merced's Wastewater Treatment Facility (WWTF) produced 742 million gallons of treated water which was recycled and used for irrigation purposes of the land application area of the WWTF and 475 million gallons of recycled water which was discharged to the wildlife refuge for wetland habitats.

Merced's wastewater treatment plant is participating in the efforts of water conservation by recycling and reusing the treated water. In the future you will see stationary water tanks around the City, which will be holding the recycled water to irrigate City owned landscaped.



DRINKING WATER FLUORIDATION

Our water system treats your water by adding fluoride to the naturally occurring level to help prevent dental caries in consumers. State regulations require the fluoride levels in the treated water be at an optimum dose of 0.70 ppm. Our monitoring showed that the fluoride levels in the treated water ranged from 0.11-1.30 with an average of 0.83 ppm. Information about fluoridation, oral health, and current issues is available from www.cdph.ca.gov/certlic/drinkingwater/Pages/Fluoridation.aspx. Details concerning City of Merced fluoride monitoring and under-fluoridation may be found at www.cityofmerced.org/waterreport.

COMMUNITY PARTICIPATION

The City Council meets every first and third Monday of the month beginning at 7:00 pm at the Civic Center, 678 West 18th Street, Merced. The public is welcome to attend.

QUESTIONS?

For more information about this report, or for any questions relating to your drinking water, please call the Water Quality Control Division at (209) 385-6204 or Public Works Customer Service at (209) 385-6800.

SAMPLING RESULTS: The tables below list all drinking water contaminations that we tested for and detected according to State drinking water requirements. The presence of these contaminants in the water does not necessarily indicate that the water poses a health risk. Unless noted, the data presented in this report are from testing accomplished from January 1, 2014, to December 31, 2014.

REGULATED SUBSTANCES WITH PRIMARY DRINKING WATER STANDARDS

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	PHG (MCLG) [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Aluminum (ppm)	2014	1	0.6	0.06	ND-0.06	No	Erosion of natural deposits; residue from some surface water treatment processes
Arsenic¹ (ppb)	2014	10	0.004	4.2	ND-9.3	No	Erosion of natural deposits; runoff from orchards; glass and electronics production wastes
Barium (ppm)	2014	1	2	0.25	0.13-0.51	No	Discharges of oil drilling wastes and from metal refineries; erosion of natural deposits
Chlorine (ppm)	2014	[4.0 (as Cl2)]	[4 (as Cl2)]	0.64	0.05-0.98	No	Drinking water disinfectant added for treatment
Chromium (ppb)	2014	50	(100)	3.54	1.5-4.9	No	Discharge from steel and pulp mills and chrome plating; erosion of natural deposits
Dibromochloropropane [DBCP] (ppt)	2012	200	1.7	0.014	ND-0.014	No	Banned nematocide that may still be present in soils due to runoff/leaching from former use on soybeans, cotton, vineyards, tomatoes and tree fruit
Fluoride (ppm)	2014	2	1	0.25	ND-0.72	No	Erosion of natural deposits; water additive that promotes strong teeth; discharge from fertilizer and aluminum factories
Gross Alpha Particle Activity (pCi/L)	2013	15	(0)	5.44	ND-8.28	No	Erosion of natural deposits
Hexavalent Chromium (ppb)	2014	10	0.02	3.66	1.6-5.1	No	Discharge from electroplating factories, leather tanneries, wood preservation, chemical synthesis, refractory production, and textile manufacturing facilities; erosion of natural deposits
Nitrate² [as nitrate] (ppm)	2014	45	45	13.8	6.5-28	No	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits
Total Coliform Bacteria⁵ [Total Coliform Rule] [# of positive samples]	2014	More than 5.0% of monthly samples are positive	(0)	1	NA	No	Naturally present in the environment
TTHMs [Total Trihalomethanes]-Stage 2 (ppb)	2014	80	NA	1.15	ND-12	No	By-product of drinking water disinfection
Tetrachloroethylene³ [PCE] (ppb)	2014	5	0.06	1.6	ND-2.2	No	Discharge from factories, dry cleaners, and auto shops (metal degreaser)
Trichloroethylene³ [TCE] (ppb)	2014	5	1.7	0.7	ND-0.76	No	Discharge from metal degreasing sites and other factories

SUBSTANCES THAT COULD BE IN WATER

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.



In order to ensure that tap water is safe to drink, the U.S. Environmental Protection Agency (U.S. EPA) and the State Water Resource Control Board (SWRCB) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. Department regulations also establish limits for contaminants in bottled water that must provide the same protection for public health. 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.

Contaminants that may be present in source 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 result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming;
 - Pesticides and Herbicides**, that 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, which are by-products of industrial processes and petroleum production, and which can also come from gas stations, urban stormwater runoff, agricultural applications, and septic systems;
 - Radioactive Contaminants**, that can be naturally occurring or can be the result of oil and gas production and mining activities.
- More information about contaminants and potential health effects can be obtained by calling the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.

DEFINITIONS

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

MCL (Maximum Contaminant Level): 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 MCLs (SMCLs) are set to protect the odor, taste and appearance of drinking water.

MCLG (Maximum Contaminant Level Goal): 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. EPA.

MRDL (Maximum Residual Disinfectant Level): 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.

MRDLG (Maximum Residual Disinfectant Level Goal): 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.

NA: Not applicable

ND (Not detected): Indicates that the substance was not found by laboratory analysis.

NS: No standard

NTU (Nephelometric Turbidity Units): Measurement of the clarity, or turbidity, of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

pCi/L (picocuries per liter): A measure of radioactivity.

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

PHG (Public Health Goal): 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 EPA.

ppb (parts per billion): One part substance per billion parts water (or micrograms per liter).

ppm (parts per million): One part substance per million parts water (or milligrams per liter).

ppt (parts per trillion): One part substance per trillion parts water (or nanograms per liter).

The State requires us to monitor for certain substances once every three to five years because the concentrations of these substances do not frequently change. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

TAP WATER SAMPLES WERE COLLECTED FOR LEAD AND COPPER ANALYSES FROM SAMPLE SITES THROUGHOUT THE COMMUNITY

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AL	PHG (MCLG)	AMOUNT DETECTED (90TH %TILE)	SITES ABOVE AL /TOTAL SITES	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2012	1.3	0.3	0.146	0/40	No	Internal corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead (ppb)	2012	15	0.2	ND	0/40	No	Internal corrosion of household water plumbing systems; discharges from industrial manufacturers; erosion of natural deposits

REGULATED SUBSTANCES WITH SECONDARY DRINKING WATER STANDARDS

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	PHG (MCLG) [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Chloride (ppm)	2014	500	NS	9.23	4.5-13	No	Runoff/leaching from natural deposits; seawater influence
Copper (ppm)	2014	1	NS	0.009	ND-0.013	No	Internal corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Corrosivity⁴ (Units)	2014	Noncorrosive	NS	12.09	12-13	No	Natural or industrially influenced balance of hydrogen, carbon and oxygen in the water; affected by temperature and other factors
Iron (ppb)	2014	300	NS	130	ND-140	No	Leaching from natural deposits; industrial wastes
Manganese (ppb)	2014	50	NS	21	ND-30	No	Leaching from natural deposits
Odor--Threshold (Units)	2014	3	NS	1	ND-1.0	No	Naturally-occurring organic materials
Sulfate (ppm)	2014	500	NS	10.93	6.6-13	No	Runoff/leaching from natural deposits; industrial wastes
Total Dissolved Solids (ppm)	2014	1000	NS	257	170-380	No	Runoff/leaching from natural deposits
Turbidity (NTU)	2014	5	NS	0.36	ND-0.76	No	Soil runoff

UNREGULATED AND OTHER SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH
Calcium (ppm)	2014	32	16-57
Chlorate (ppb)	2014	113	50-240
Chlorodifluoromethane (ppb)	2014	0.14	0.081-0.18
Hardness (Total) as CaCO3	2014	135	67-230
Magnesium (ppm)	2014	13.11	5.2-24
Molybdenum (ppb)	2014	1.59	1-2.9
pH, Laboratory	2014	8.02	7.9-8.1
Strontium (ppb)	2014	377	200-660
tert-Butyl Alcohol (TBA) (ppb)	2011	4.05	3.4-4.7
Vanadium (ppb)	2014	21	16-28
1,4 Dioxane (ppb)	2014	0.094	0.092-0.095



Photos by Jon Kwiatkowski

- Arsenic results at Well Site 2 for all three wells are within the blending MCL of 10 ppb. While your drinking water contains low levels of arsenic, it meets the federal and state standards for arsenic. The arsenic standard balances the current understanding of arsenic’s possible health effects against the cost of removing arsenic from drinking water. The U.S. Environmental Protection Agency continues to research the health effects such as skin damage and circulatory problems.
- Nitrate in drinking water at levels above 45 ppm is a health risk for infants of less than six months of age. Such nitrate levels in drinking water can interfere with the capacity of the infant’s blood to carry oxygen, resulting in serious illness; symptoms include shortness of breath and blueness of the skin. Nitrate levels above 45 ppm may also affect the ability of the blood to carry oxygen in other individuals, such as pregnant women and those with specific enzyme deficiencies. If you are caring for an infant, or you are pregnant, you should ask advice from your health care provider.
- PCE results at Well Site 3C and TCE results at Well Site 13 were detected below the MCL. All other city well sites reported no detection. While your drinking water meets federal and state standards, it may contain low levels of contaminants below detection limits and below the Regulatory Action Level. The PCE and TCE standard balances the current understanding of possible health effects against the cost of removing contaminants from drinking water. The U.S. Environmental Protection Agency continues to research the health effects of low levels for PCE and TCE.
- Corrosivity is not a National Environmental Laboratory Accreditation program accredited analyte. All sampling results are based and calculated on an average of 20 production wells.
- Coliform bacteria are common in the environment and are generally not harmful themselves. The presence of these bacteria in drinking water is a concern because it indicates that the water may be contaminated with disease causing organisms. Federal regulations require that if drinking water tests positive for coliform bacteria, further testing is required to analyze for fecal coliform bacteria. Our tests indicate no fecal coliform is present in our drinking water.



IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER

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

Monitoring and Reporting Requirements Not Met for City of Merced Water System

Our water system failed to operate the fluoridation treatment systems in accordance with the approved operations plan and therefore was in violation of the water supply permit and [monitoring and reporting](#) regulations for our fluoride treatment systems. Even though this failure was not an emergency, as our customers, you have a right to know what you should do, what happened and what we did to correct this situation.

We are required to operate all fluoridation treatment systems in accordance with the operations plan that has been approved by the State Water Resources Control Board Division of Drinking Water (Division). Operation of the fluoride injection system in accordance with the operations plan helps to ensure that our drinking water meets state standards. During December 2014 and January 2015, two well sites experienced injection system performance fluctuations, and as a result the fluoride levels in the distribution system fell slightly below the optimal range such that more than 20% of the samples taken were not within the range specified by the operations plan.

What should I do?

- There is nothing you need to do at this time. There is no adverse health effect caused by under-fluoridation. There is no water quality concern.

What happened? What is being done?

During the months of December 2014 and January 2015 the fluoridation injection system at Well 8 and Well 9 did not function correctly. The Well Site Operators made repairs and adjustments and the system is now working correctly. The Fluoridation Monitoring Plan is being revised to improve response. The injection systems are being improved by adding capacity along with other operational changes designed to help avoid system failures and fluctuations.

For more information, please contact [City of Merced Water Department Manager, Johnnie Baptista](#) at 385-6800 or baptistaj@cityofmerced.org.

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.

Secondary Notification Requirements

Upon receipt of notification from a person operating a public water system, the following notification must be given within 10 days [Health and Safety Code Section 116450(g)]:

- **SCHOOLS:** Must notify school employees, students, and parents (if the students are minors).
- **RESIDENTIAL RENTAL PROPERTY OWNERS OR MANAGERS** (including nursing homes and care facilities): Must notify tenants.
- **BUSINESS PROPERTY OWNERS, MANAGERS, OR OPERATORS:** Must notify employees of businesses located on the property.