

## For More Information

WE ARE PROUD to provide you with some of the nation's highest quality water that meets or exceeds all State and Federal standards for drinking water.

THIS BROCHURE HIGHLIGHTS important information about your drinking water and our commitment to providing excellent water quality.

This Annual Consumer Confidence Report about your water supply is prepared according to California law.

# Our Water Quality



ANNUAL REPORT 2018

### WATER QUALITY

- City of Palo Alto Utilities, Water Transmission (650) 496-6967
- City of Palo Alto [www.cityofpaloalto.org/water](http://www.cityofpaloalto.org/water)
- San Francisco Public Utilities Commission (SFPUC) [www.sfpuc.org](http://www.sfpuc.org)
- U.S. Environmental Protection Agency (USEPA) Drinking Water [www.epa.gov/safewater](http://www.epa.gov/safewater)
- USEPA Safe Drinking Water Hotline (800) 426-4791

此份有关你的食水报告, 内有重要资料和讯息, 请找他人替你翻译及解释清楚。

[www.cityofpaloalto.org/WaterReportMandarin](http://www.cityofpaloalto.org/WaterReportMandarin)

Para obtener más información sobre la calidad del agua, visite [www.cityofpaloalto.org/WaterReportSpanish](http://www.cityofpaloalto.org/WaterReportSpanish)

### HEALTH CONCERNS & REGULATIONS

- State Water Resources Control Board (SWRCB) [www.swrcb.ca.gov](http://www.swrcb.ca.gov)
- USEPA [www.epa.gov](http://www.epa.gov)

### EMERGENCY PREPAREDNESS

- California Department of Public Health <http://bepreparedcalifornia.ca.gov>

## Our Drinking Water Sources and Treatment

Supplied by the San Francisco Regional Water System (SFRWS), which is owned and operated by the San Francisco Public Utilities Commission (SFPUC), our major water source originates from spring Yosemite National Park snowmelt flowing down the Tuolumne River to storage in Hetch Hetchy Reservoir. The well protected Sierra water source is exempt from filtration requirements by the United States Environmental Protection Agency (USEPA) and the State Water Resources Control Board's Division of Drinking Water (SWRCB-DDW). Water from Hetch Hetchy Reservoir receives the following treatment to meet the appropriate drinking water standards for consumption: ultraviolet light and chlorine disinfection, pH adjustment for optimum corrosion control, fluoridation for dental health protection, and chloramination for maintaining required disinfectant residual levels and minimizing the formation of regulated disinfection byproducts.

The Hetch Hetchy water is supplemented with surface water from local watersheds and upcountry non-Hetch Hetchy sources (UNHHS). Rainfall and

runoff from the 35,000-acre Alameda Watershed in Alameda and Santa Clara counties are collected in Calaveras Reservoir and San Antonio Reservoir before delivery to the Sunol Valley Water Treatment Plant (SVWTP). Rainfall and runoff from the 23,000-acre Peninsula Watershed in San Mateo County are stored in Crystal Springs Reservoir, San Andreas Reservoir and Pilarcitos Reservoir, and are delivered to the Harry Tracy Water Treatment Plant (HTWTP). In 2018, the UNHHS were not used. Water at the two treatment plants is subject to filtration, disinfection, fluoridation, optimum corrosion control, and taste and odor removal.

## Protecting Our Watersheds

The SFPUC conducts watershed sanitary surveys for the Hetch Hetchy source annually and local water sources every five years. The last local sanitary survey was done in 2016. The SFPUC conducted a special watershed sanitary survey for UNHHS in 2015 as part of its drought response plan efforts. These surveys evaluate the sanitary condition, water quality, potential contamination sources and the results of watershed management activities, and were completed with support from partner agencies including National Park Service and US Forest Service.

These surveys identified wildlife, stock, and human activities as potential contamination sources. You may contact the San Francisco District office of SWRCB-DDW at (510) 620-3474 for the review of these reports.

## Ensuring the Highest Water Quality

The SFPUC's Water Quality Division (WQD) regularly collects and tests water samples from reservoirs and designated sampling points throughout the system to ensure the water delivered to you meets or exceeds Federal and State drinking water standards. In 2018, WQD staff conducted more than 57,690 drinking water tests in the transmission and distribution systems. This is in addition to the extensive treatment process control monitoring performed by the SFPUC's certified operators and online instruments.

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. In order to ensure that tap

water is safe to drink, the USEPA and SWRCB-DDW prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. The U.S. Food and Drug Administration regulations and California law also establish limits for contaminants in bottled water that provide the same protection for public health.

## Water Supply Conditions

Because water supply availability is a long-term challenge, the State and Palo Alto are continuing efforts to make water conservation a way of life. A number of prohibitions on wasteful practices, such as watering turf and ornamental landscapes between 10 am and 6 pm, are permanently in place via City ordinance. To learn more about current water supply conditions, water use restrictions, and available efficiency resources, please visit [www.cityofpaloalto.org/water](http://www.cityofpaloalto.org/water)



## Make water conservation a way of life

It is important to use water wisely every day, regardless of rain or drought conditions. Everyone in California must make wise water use a priority to ensure an adequate supply in the future. The City of Palo Alto Utilities offers many resources to help customers easily save water with free services, educational tools and rebates for upgrading appliances and high-water using landscapes. Attend one of our workshops to learn how you can have a beautiful, sustainable, low water use landscape while maintaining the health of trees and our urban canopy.

Call or visit us online to discover how you can live a water wise life which will benefit current and future generations, as well as fish and wildlife species, urban, rural and wildland ecosystems.

WATER EFFICIENCY SERVICES AND REBATE PROGRAMS  
City of Palo Alto Utilities, Utility Program Services  
(650) 329-2241 [www.cityofpaloalto.org/water](http://www.cityofpaloalto.org/water)

## GET INVOLVED

We welcome your input on important water issues. Visit [www.cityofpaloalto.org](http://www.cityofpaloalto.org) for details about upcoming public meetings.

### CITY COUNCIL MEETINGS

First three Mondays of each month, 7 PM, City Hall

### UTILITIES ADVISORY COMMISSION (UAC)

1st Wednesday of each month, 7 PM, City Hall



## Protecting the SFPUC Water System from Seismic Disaster

The SFPUC is investing more than \$4 billion in the Water System Improvement Program (WSIP) to ensure that the regional water system will be able to deliver water for public health, fire fighting and disaster recovery as quickly as possible following a seismic event. The majority of the WSIP's infrastructure projects have been completed. The current forecasted date to complete the overall WSIP is December 2021.

## Palo Alto Infrastructure Improvements

CPAU conducts an ongoing infrastructure replacement program to find, fix and replace aging pipes. We prioritize our water main replacement projects based on pipe material, age, leak history, and location within seismic zones, among other factors. CPAU has already replaced many of the most leak-prone and deteriorated water pipes (approximately 60 miles) through past capital improvement projects.

A recent study of our water distribution system suggests a new replacement schedule to replace 13.5 miles of mains within the next decade primarily due to location within a seismic zone. Staff is also preparing to launch an assessment of asbestos cement pipe (ACP) in the system to determine the current condition and life expectancy of the pipes. CPAU will prioritize the ACP replacement program after the initial 13.5 miles of mains are replaced.

## Water Reuse

The City has used recycled water since 1980 at the municipal golf course, Greer Park, the Emily Renzel Marsh, the duck pond, and the Regional Water Quality Control Plant. The City in partnership with Valley Water is evaluating a number of options for increasing the use of this local drought-proof supply including expanded non-potable applications and the potential for potable reuse in the future. Learn more at [cityofpaloalto.org/recycledwater](http://cityofpaloalto.org/recycledwater)



## Prepare Yourself for Emergencies

Although the SFPUC and CPAU strive to ensure a reliable supply of water for our customers, a natural disaster such as a major earthquake could interrupt water delivery. As a result, it is imperative that everyone be prepared for the unexpected both at home and at work.

- Store at least three to five days worth of tap water in a dark, cool place (one gallon of water per person, per day, including pets) in clean, airtight food grade containers.
- Label each container with a date and replace the water every six months.
- At the time of usage, add 8 drops of bleach to each gallon to ensure disinfection. (Use pure household bleach only—not products with scents or other additives.) Mix and allow to stand for 30 minutes before use. If a camp stove is available, you can also disinfect the water by bringing it to a rolling boil for 5 to 10 minutes.
- If you run out of stored drinking water, strain and treat water from your water heater. To strain, pour it through a clean cloth or layers of paper towels. Treat with household bleach, as directed above. Other sources of water inside the home are ice cubes and the reservoir tank of your toilet (not the bowl).
- Remember to drain your water heater periodically to remove any sediment build up.
- If your water supply is not sufficient for hand washing, use antiseptic hand gel or wipes.

## Fluoridation and Dental Fluorosis

Mandated by State law, water fluoridation is a widely accepted practice proven to be safe and effective for preventing and controlling tooth decay. Our fluoride target level in the water is 0.7 milligrams per liter (mg/L, or part per million, ppm), consistent with the May 2015 State regulatory guidance on optimal fluoride levels. Infants fed formula mixed with water containing fluoride at this level may still have a chance of developing tiny white lines or streaks in their teeth. These marks are referred to as mild to very mild fluorosis, and are often only visible under a microscope. Even in cases where the marks are visible, they do not pose any health risk. The Centers for Disease Control (CDC) considers it safe to use optimally fluoridated water for preparing infant formula. To lessen this chance of dental fluorosis, you may choose to use low-fluoride bottled water to prepare infant formula. Nevertheless, children may still develop dental fluorosis due to fluoride intake from other sources such as food, toothpaste and dental products.

Contact your healthcare provider or SWRCB-DDW if you have concerns about dental fluorosis. For additional information about fluoridation or oral health, visit the SWRCB-DDW website [www.waterboards.ca.gov/drinking\\_water/certlic/drinkingwater/Fluoridation.shtml](http://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/Fluoridation.shtml) or the CDC website [www.cdc.gov/fluoridation](http://www.cdc.gov/fluoridation).

## Drinking Water and Lead

The SFPUC's annual monitoring of the water sources in 2018 continues to demonstrate that there is no lead detected. There are no known lead service lines in our distribution system. If lead was detected in tap water, it is primarily from materials and components associated with service lines and home plumbing. We are responsible for providing high quality drinking water, but we cannot control the variety of materials used in your property. If present, elevated levels of lead can cause serious health problems.

## Reducing Lead from Plumbing Fixtures

Some homes in the community may have increased levels of lead in their tap water caused by the deterioration of household plumbing materials that contain lead. CPAU provides high-quality drinking water, but cannot control the variety of materials associated with your home plumbing. Pregnant women, infants and young children are typically at the greatest health risk. If you are concerned about lead levels in your water, you may wish to have your water tested. You can also flush your tap for 30 seconds to 2 minutes before using the water whenever the tap has not been used for several hours. Information on lead in drinking water, testing methods and steps you can take to minimize exposure is available by calling the Safe Drinking Water Hotline (800) 426-4791 or online at [www.epa.gov/safewater/lead](http://www.epa.gov/safewater/lead)

## Special Health Needs

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

These people should seek advice about drinking water from their healthcare providers. USEPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the USEPA's Safe Drinking Water Hotline (800) 426-4791 or at [www.epa.gov/safewater](http://www.epa.gov/safewater)

Individuals with disabilities who require accommodations to access City facilities, services or programs, or who would like information on the City's compliance with the Americans with Disabilities Act (ADA) of 1990, may contact the City's ADA Coordinator at (650) 329-2368 (voice) or email [ada@cityofpaloalto.org](mailto:ada@cityofpaloalto.org)

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## Bay Tunnel and New Irvington Tunnel Projects

These new SFPUC facilities were brought into service in 2015 and have strengthened the seismic reliability of the SFRWS by providing crucial system redundancies. They are part of the SFPUC's Water System Improvement Program, a \$4.8 billion investment in capital projects that strengthens SFPUC's ability to provide reliable, high-quality water to 2.6 million customers, even after a natural disaster.

DETECTED CONTAMINANTS	UNIT	MCL	PHG OR [MCLG]	RANGE OR LEVEL FOUND	AVERAGE OR [MAX]	MAJOR SOURCES IN DRINKING WATER
<b>TURBIDITY</b> (Turbidity is a water clarity indicator; it also indicates the effectiveness of the filtration plants.)						
Unfiltered Hetch Hetchy Water	NTU	5	N/A	0.3 - 0.8 <sup>(2)</sup>	[1.8]	Soil runoff
Filtered Water from Sunol Valley Water Treatment Plant (SVWTP)	NTU	1 <sup>(3)</sup>	N/A	-	[1]	Soil runoff
	-	Min 95% of samples ≤ 0.3 NTU <sup>(3)</sup>	N/A	99.96% - 100%	-	Soil runoff
Filtered Water from Harry Tracy Water Treatment Plant (HTWTP)	NTU	1 <sup>(3)</sup>	N/A	-	[0.07]	Soil runoff
	-	Min 95% of samples ≤ 0.3 NTU <sup>(3)</sup>	N/A	100%	-	Soil runoff
<b>DISINFECTION BYPRODUCTS AND PRECURSOR</b>						
Total Trihalomethanes	ppb	80	N/A	20 - 41	[20.65] <sup>(4)</sup>	Byproduct of drinking water disinfection
Haloacetic Acids	ppb	60	N/A	20 - 45	[23.04] <sup>(4)</sup>	Byproduct of drinking water disinfection
Total Organic Carbon <sup>(5)</sup>	ppm	TT	N/A	1.2 - 2.9	2.2	Various natural and man-made sources
<b>MICROBIOLOGICAL</b>						
Total Coliform <sup>(6)</sup>	-	NoP ≤ 5.0% of monthly samples	(0)	-	[0.00%]	Naturally present in the environment
<i>Giardia lamblia</i>	cyst/L	TT	(0)	0 - 0.24	0.03	Naturally present in the environment
<b>INORGANICS</b>						
Fluoride (source water) <sup>(7)</sup>	ppm	2.0	1	ND - 0.7	0.3 <sup>(8)</sup>	Erosion of natural deposits; water additive to promote strong teeth
Chloramine (as chlorine)	ppm	MRDL = 4.0	MRDLG = 4	2.08 - 2.52	[2.38] <sup>(9)</sup>	Drinking water disinfectant added for treatment
<b>CONSTITUENTS WITH SECONDARY STANDARDS</b>						
Chloride	ppm	500	N/A	<3 - 17	8.9	Runoff / leaching from natural deposits
Color	unit	15	N/A	<5 - 7	<5	Naturally-occurring organic materials
Specific Conductance	µS/cm	1600	N/A	29 - 221	154	Substances that form ions when in water
Sulfate	ppm	500	N/A	0.9 - 29	16	Runoff / leaching from natural deposits
Total Dissolved Solids	ppm	1000	N/A	<20 - 144	82	Runoff / leaching from natural deposits
Turbidity	NTU	5	N/A	ND - 0.3	0.1	Soil runoff
<b>LEAD AND COPPER</b>						
Copper	ppb	1300	300	N/A <sup>(10)</sup>	N/A	Internal corrosion of household water plumbing systems
Lead	ppb	15	0.2	N/A <sup>(11)</sup>	N/A	Internal corrosion of household water plumbing systems

OTHER WATER QUALITY PARAMETERS	UNIT	ORL	RANGE	AVERAGE
Alkalinity (as CaCO <sub>3</sub> )	ppm	N/A	<3 - 132	51
Boron	ppb	1000 (NL)	ND - 104	ND
Bromide	ppb	N/A	<5 - 27	7
Calcium (as Ca)	ppm	N/A	2.9 - 18	11
Chlorate <sup>(12)</sup>	ppb	800 (NL)	42 - 230	124
Chromium (VI) <sup>(13)</sup>	ppb	N/A	0.031 - 0.1	0.068
Hardness (as CaCO <sub>3</sub> )	ppm	N/A	15 - 68	47
Magnesium	ppm	N/A	<0.2 - 6.2	4.0
pH	-	N/A	8.6 - 9.8	9.4
Potassium	ppm	N/A	0.2 - 1	0.6
Silica	ppm	N/A	2.8 - 7.1	5.0
Sodium	ppm	N/A	2.3 - 20	14
Strontium	ppb	N/A	12 - 199	99

(1) All results met State and Federal drinking water health standards.  
 (2) These are monthly average turbidity values measured every 4 hours daily.  
 (3) There is no turbidity MCL for filtered water. The limits are based on the Treatment Technique (TT) requirements for filtration systems.  
 (4) This is the highest locational running annual average value.  
 (5) Total organic carbon is a precursor for disinfection byproduct formation. The TT requirement applies to the filtered water from the SVWTP only.  
 (6) For systems collecting <40 samples per month, report the highest number (not the percentage) of positive samples collected in any one month.  
 (7) In May 2015, the SWRCB recommended an optimal fluoride level of 0.7 ppm be maintained in the treated water. In 2018, the range and average of the fluoride levels were 0.6 ppm - 1.0 ppm and 0.7 ppm, respectively.  
 (8) The natural fluoride level in the Hetch Hetchy supply was ND. Elevated fluoride levels in the SVWTP and HTWTP raw water are attributed to the transfer of fluoiodated Hetch Hetchy water into the local reservoirs.  
 (9) This is the highest running annual average value.  
 (10) The most recent Lead and Copper Rule monitoring was in 2017. 0 of 55 samples collected at consumer taps had copper concentrations above the AL. Number of schools requesting lead sampling in 2018 - 0.  
 (11) The most recent Lead and Copper Rule monitoring was in 2017. 0 of 55 samples collected at consumer taps had lead concentrations above the AL. Number of schools requesting lead sampling in 2018 - 0.  
 (12) The detected chlorate in the treated water is a degradation product of sodium hypochlorite used by the SFPUC for water disinfection.  
 (13) Chromium (VI) has a PHG of 0.02 ppb but no MCL. The previous MCL of 10 ppb was withdrawn by the SWRCB-DDW on September 11, 2017. Currently, the SWRCB-DDW regulates all chromium through a MCL of 5 ppb for Total Chromium, which was not detected in our water in 2018.

Note: Additional water quality data may be obtained by calling the City of Palo Alto Utilities Staff at (650) 496-6967.

The adjacent table lists all 2018 detected drinking water contaminants and the information about their typical sources. Contaminants below detection limits for reporting are not shown, in accordance with regulatory guidance. The SFPUC holds a SWRCB-DDW monitoring waiver for some contaminants and therefore their monitoring frequencies are less than annual.

KEY	
< / ≤	= less than / less than or equal to
AL	= Action Level
Max	= Maximum
Min	= Minimum
N/A	= Not Available
ND	= Non-detect
NL	= Notification Level
NoP	= Number of Coliform-Positive Sample
NTU	= Nephelometric Turbidity Unit
ORL	= Other Regulatory Level
ppb	= parts per billion
ppm	= parts per million
µS/cm	= microSiemens / centimeter

## Key Water Quality Terms

The following are definitions of key terms referring to water quality standards and goals noted on the adjacent data table.

**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.

**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 USEPA.

**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 MCLs (SMCLs) are set to protect the odor, taste, and appearance of drinking water.

**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.

**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.

**PRIMARY DRINKING WATER STANDARD (PDWS):** MCLs and MRDLs for contaminants that affect health along with their monitoring and reporting requirements, and water treatment requirements.

**REGULATORY ACTION LEVEL:** 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 the water.

**TURBIDITY:** A water clarity indicator that measures cloudiness of the water, and is also used to indicate the effectiveness of the filtration system. High turbidity can hinder the effectiveness of disinfectants.

*Cryptosporidium* is a parasitic microbe found in most surface water. The SFPUC regularly tests for this waterborne pathogen, and found it at very low levels in source water and treated water in 2018. However, current test methods approved by the USEPA do not distinguish between dead organisms and those capable of causing disease. Ingestion of *Cryptosporidium* may produce symptoms of nausea, abdominal cramps, diarrhea, and associated headaches. *Cryptosporidium* must be ingested to cause disease, and it may be spread through means other than drinking water.



## Contaminants and Regulations

Generally, the sources of drinking water (both tap water and bottled water) include rivers, lakes, oceans, 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. Such substances are called contaminants, and may be present in source water as:

**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 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 can also come from gas stations, urban stormwater runoff, agricultural application and septic systems.

**RADIOACTIVE CONTAMINANTS** which can be naturally occurring or 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 USEPA's Safe Drinking Water Hotline at (800) 426-4791, or at [www.epa.gov/safewater](http://www.epa.gov/safewater)

