CITY OF PALO ALTO UTILITIES

Our Water Quality

ANNUAL REPORT 2019

For More Information

WATER QUALITY

- City of Palo Alto Utilities, Water Transmission (650) 496-6967
- City of Palo Alto www.cityofpaloalto.org/waterquality
- San Francisco Public Utilities Commission (SFPUC) www.sfwater.org
- U.S. Environmental Protection Agency (USEPA) Drinking Water 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,请找他人为你翻译及解释清楚。
www.cityofpaloalto.org/WaterReportMandarin

Para obtener más información sobre la calidad del agua, visite
www.cityofpaloalto.org/WaterReportSpanish

HEALTH CONCERNS & REGULATIONS

- State Water Resources Control Board (SWRCB) www.swrcb.ca.gov
- USEPA www.epa.gov

EMERGENCY PREPAREDNESS

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

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 Drinking Water Sources and Treatment

The San Francisco Regional Water System's (SFRWS) major water source is in Yosemite National Park and originates from spring snowmelt flowing down the Tuolumne River to storage in Hetch Hetchy Reservoir. The well-protected Sierra water source is exempt from state and federal filtration requirements. To meet the appropriate drinking water standards for consumption, water from Hetch Hetchy Reservoir receives treatment consisting of ultraviolet light and chlorine disinfection, pH adjustment for optimum corrosion control, fluoridation for dental health protection, and chloramination for maintaining disinfectant residual levels and minimizing the formation of regulated disinfection byproducts.

The Hetch Hetchy water supply 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 first collected in Calaveras Reservoir and San Antonio Reservoir for storage followed by delivery to the Sunol Valley Water Treatment Plant (SVWTP) for treatment. 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. Water delivered to the two treatment plants is subject to filtration, disinfection, fluoridation, optimum corrosion control, and taste and odor removal to ensure the water supplied to our customers meets the federal and state drinking water standards. The SFRWS did not use any upcountry non-Hetch-Hetchy sources in 2019.

Protecting Our Watersheds

The SFRWS conducts watershed sanitary surveys for the Hetch Hetchy source annually and for the local water sources and UNHHS every five years. The latest local sanitary survey was completed in 2016 for the period of 2011-2015. The last watershed sanitary survey for UNHHS was conducted in 2015 as part of SFRWS's drought response plan efforts. All these surveys together with the stringent watershed protection management activities were completed by SFRWS with support from partner agencies including the National Park Service and U.S. Forest Service. The purposes of the surveys are to evaluate the sanitary conditions and water quality of the watersheds and to review results of watershed management activities conducted in the preceding years. Wildlife, stock, and human activities continue to be the main potential contamination sources. You may contact the San Francisco District office of the State Water Resources Control Board's Division of Drinking Water (SWRCB-DDW) at (510) 620-3474 to review these reports.

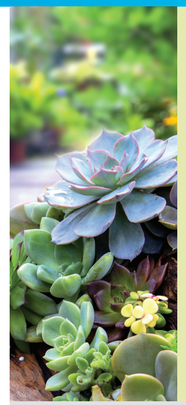
Ensuring the Highest Water Quality

The SFRWS regularly collects and tests water samples from reservoirs and designated sampling points throughout the water system to ensure the water delivered to you meets or exceeds federal and State drinking water standards. In 2019, SFRWS conducted more than 53,650 drinking water tests in the water system. This is in addition to the extensive treatment process control monitoring performed by SFRWS 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 United States Environmental Protection Agency (USEPA) and the 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/waterquality



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/utilityprograms

GET INVOLVED

We welcome your input on important water issues. Visit www.cityofpaloalto.org for details about upcoming public meetings.

CITY COUNCIL MEETINGS

Typically the first three Mondays of each month

UTILITIES ADVISORY COMMISSION (UAC)

Typically the first Wednesday of each month

Tap vs. Bottled

City of Palo Alto Utilities (CPAU) customers are fortunate to have access to high quality water flowing from the faucet - the pristine snowmelt from the Hetch Hetchy reservoir. Avoid the high cost, lower quality and environmental impact of buying bottled water, and enjoy a glass of tap water today!

Protecting the SFPUC Water System from Seismic Disaster

The SFPUC has invested 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.

Monitoring of Per- and Polyfluoroalkyl Substances (PFAS)

PFAS are a group of approximately 5,000 man-made chemicals used in a variety of industries and consumer products. These chemicals are very persistent in the environment and human body. SFRWS conducted a special round of PFAS monitoring of its water sources and transmission system in 2019. The monitoring effort was not under any federal or State order/permit requirements; it was proactively conducted on a voluntary basis with the objective to identify if SFRWS's water supplies are impacted by PFAS. Using the State's stringent sampling procedures and based on the currently approved/certified method of analysis for 18 PFAS contaminants, SFRWS confirmed no PFAS were detected in its water sources and transmission system. Considering USEPA's recent development of a newer method of analysis for additional PFAS contaminants, SFRWS intends to conduct another round of monitoring when the new analytical method is available at its contract laboratory. For additional information about PFAS, visit SWRCB-DDW website waterboards.ca.gov/pfas and/or USEPA website epa.gov/pfas.

Boron Detection Above Notification Level in Source Water

In 2019, the SFPUC detected boron at a level of 1.49 ppm in the raw water stored in Pond F3 East, one of SFRWS's approved sources in the Alameda Watershed. A similar level was also detected in the same pond in 2017. Although the detected value is above the California Notification Level of 1 ppm for source water, the corresponding level in the treated water from the Sunol Valley Water Treatment Plant (SVWTP) was only 0.1 ppm. Boron is an element in nature, and is typically released into air and water when soils and rocks naturally weather.

✓ 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. The fluoride target level in the water is 0.7 milligram 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 of 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, or the CDC website www.cdc.gov/fluoridation.

Drinking Water and Lead

Exposure to lead can cause serious health effects in all age groups, especially for pregnant women and young children. Infants and children who drink water containing lead could have decreases in IQ and attention span and increases in learning and behavior problems. Lead exposure among women who are pregnant increases prenatal risks. Lead exposure among women who later become pregnant has similar risks if lead stored in the mother's bones is released during pregnancy. Recent science suggests that adults who drink water containing lead have increased risks of heart disease, high blood pressure, kidney or nervous system problems.

Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. There are no known lead service lines in our water distribution system. We are responsible for providing high quality drinking water, but we cannot control the variety of materials used in plumbing components. You share the responsibility for protecting yourself and your family from the lead in your home plumbing. You can take responsibility by identifying and removing lead materials within your home plumbing and taking steps to reduce your family's risk. Before drinking, flush your pipes for several minutes by running your tap, taking a shower, doing laundry or a load of dishes. You can also use a filter certified to remove lead from drinking water. If you are concerned about lead in your water you may wish to have your water tested; call customer service at (650) 329-2161 for a lead test. Information about lead in drinking water, testing methods, and steps you can take to minimize exposure is available at www.epa.gov/safewater/lead.

As previously reported in 2018, we completed an inventory of lead user service lines (LUSL) in our system and as of 2019 there are no known pipelines and connectors between water mains and meters made of lead. Our policy is to remove and replace any LUSL promptly if they are discovered during pipeline repair and/or maintenance.

Quinoline Monitoring

SFRWS conducted a special round of voluntary monitoring for the contaminant quinoline. The monitoring effort was part of SFRWS' assessment to identify if quinoline is a contaminant of concern in its water sources and/or transmission system. The monitoring results confirm that the raw water sources and transmission system have no quinoline.

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.

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.

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

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City of Palo Alto WATER QUALITY DATA FOR YEAR 2019[1]

www.cityofpaloalto.org/water
(650) 329-2161
CITY OF PALO ALTO UTILITIES

DETECTED CONTAMINANTS	UNIT	MCL	PHG OR [MCLG]	RANGE OR LEVEL FOUND	AVERAGE OR [MAX]	MAJOR SOURCES IN DRINKING WATER
TURBIDITY (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 - 0.7 [2]	[2.1]	Soil runoff
Filtered Water from Sunol Valley Water Treatment Plant (SVWTP)	NTU	1 [3]	N/A	–	[1]	Soil runoff
	–	Min 95% of samples ≤ 0.3 NTU [3]	N/A	99.89% - 100%	–	Soil runoff
Filtered Water from Harry Tracy Water Treatment Plant (HTWTP)	NTU	1 [3]	N/A	–	[0.01]	Soil runoff
	–	Min 95% of samples ≤ 0.3 NTU [3]	N/A	100%	–	Soil runoff
DISINFECTION BYPRODUCTS AND PRECURSOR						
Total Trihalomethanes	ppb	80	N/A	14 - 57	[41.50] [4]	Byproduct of drinking water disinfection
Haloacetic Acids	ppb	60	N/A	25 - 47	[38.00] [4]	Byproduct of drinking water disinfection
Total Organic Carbon[5]	ppm	TT	N/A	1.6 - 2.6	2	Various natural and man-made sources
MICROBIOLOGICAL						
Total Coliform [6]	-	NoP ≤ 5.0% of monthly samples	(0)	–	[0.00%]	Naturally present in the environment
Giardia lamblia	cyst/L	TT	(0)	0 - 0.09	0.02	Naturally present in the environment
INORGANICS						
Fluoride (source water)[7]	ppm	2.0	1	ND - 0.9	0.3[8]	Erosion of natural deposits; water additive to promote strong teeth
Chloramine (as chlorine)	ppm	MRDL = 4.0	MRDLG = 4	0.68 - 3.06	[2.49][9]	Drinking water disinfectant added for treatment
CONSTITUENTS WITH SECONDARY STANDARDS	**UNIT**	**SMCL**	**PHG**	**RANGE**	**AVERAGE**	**MAJOR SOURCES OF CONTAMINANT**
Aluminum [10]	ppb	200	600	ND - 68	ND	Erosion of natural deposits; some surface water treatment residue
Chloride	ppm	500	N/A	<3 - 17	8.7	Runoff / leaching from natural deposits
Color	unit	15	N/A	<5 - 10	<5	Naturally-occurring organic materials
Specific Conductance	µS/cm	1600	N/A	32 - 234	158	Substances that form ions when in water
Sulfate	ppm	500	N/A	1 - 29	15	Runoff / leaching from natural deposits
Total Dissolved Solids	ppm	1000	N/A	<20 - 119	76	Runoff / leaching from natural deposits
Turbidity	NTU	5	N/A	ND - 0.5	0.2	Soil runoff
LEAD AND COPPER	**UNIT**	**AL**	**PHG**	**RANGE**	**90TH PERCENTILE**	**TYPICAL SOURCES IN DRINKING WATER**
Copper	ppb	1300	300	N/A [11]	N/A	Internal corrosion of household water plumbing systems
Lead	ppb	15	0.2	N/A [12]	N/A	Internal corrosion of household water plumbing systems

OTHER WATER QUALITY PARAMETERS	UNIT	ORL	RANGE	AVERAGE
Alkalinity (as $CaCO_3$)	ppm	N/A	3.5 - 97	46
Boron	ppb	1000 (NL)	ND - 107	ND
Calcium (as Ca)	ppm	N/A	3.3 - 20	12
Chlorate [13]	ppb	800 (NL)	40 - 220	84
Chromium (VI) [14]	ppb	N/A	0.04 - 0.19	0.12
Hardness (as $CaCO_3$)	ppm	N/A	8.9 - 77	47
Magnesium	ppm	N/A	0.2 - 6.6	4.2
pH	-	N/A	8.8 - 10.1	9.3
Potassium	ppm	N/A	0.3 - 1.2	0.8
Silica	ppm	N/A	4.9 - 8	6.1
Sodium	ppm	N/A	2.8 - 21	14
Strontium	ppb	N/A	13 - 230	107

(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, the highest number (not the percentage) of positive samples collected in any one month are reported.
(7) In May 2015, the SWRCB recommended an optimal fluoride level of 0.7 ppm be maintained in the treated water. In 2019, the range and average of the fluoride levels were 0.2 ppm - 0.9 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 fluoridated Hetch Hetchy water into the local reservoirs.
(9) This is the highest running annual average value.
(10) Aluminum also has a primary MCL of 1,000 ppb.
(11) The most recent Lead and Copper Rule monitoring was in 2017. 0 of 55 site samples collected at consumer taps had copper concentrations above the AL.
(12) The most recent Lead and Copper Rule monitoring was in 2017. 0 of 55 site samples collected at consumer taps had copper concentrations above the AL.
(13) The detected chlorate in the treated water is a degradation product of sodium hypochlorite used by the SFRWS for water disinfection.
(14) 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 50 ppb for Total Chromium.

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

The adjacent table lists all 2019 detected drinking water contaminants and the information about their typical sources. Contaminants below detection limits for reporting are not shown, in accord with regulatory guidance. SFRWS holds a SWRCB-DDW monitoring waiver for some contaminants in its surface water supply and therefore the associated 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 drinking 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. SFRWS regularly tests for this waterborne pathogen and found it at very low levels in source water and treated water in 2019. 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