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## ***PURISSIMA PIPELINE***

### **WATER QUALITY REPORT**

Purissima Hills Water District (PHWD) is pleased to present the 2016 edition of the Water Quality Report (Consumer Confidence Report). PHWD receives 100% of its water from the San Francisco Public Utilities Commission's (SFPUC) Hetch Hetchy regional system. This report is prepared in conjunction with the SFPUC as a public service to provide information about the physical and chemical elements of our water supplies. This state-mandated annual report contains important information on the quality of your drinking water. This is in response to the National Primary Drinking Water Regulation and California Code of Regulation, Title 22, Section 116470, Regulations, which requires all public water supply agencies to issue an Annual Water Quality Report to their customers by July 1, 2017.

We want our customers to know where their drinking water comes from, how it is treated to make it safe and healthy, and the results of water quality monitoring performed by the SFPUC on a daily basis. Customers can make health decisions concerning water use for themselves and their families with the information in this report. During 2016, the SFPUC monitored water quality, both source and treated water supplies, and met the maximum contaminant levels (MCLs) and treatment standards. The PHWD and the SFPUC continue their commitment to consistently provide safe and high quality drinking water.

### **ADDITIONAL INFORMATION**

Additional information about the contents of this report can be obtained by calling the District office at (650) 948-1217. Decisions about water issues are made in public meetings. The Board of Directors meets the second Wednesday of each month at 6:30 p.m. in the District office at 26375 Fremont Road, Los Altos Hills. Call Raylene Collins, District Secretary, at (650) 948-1217, regarding any inquiries about these meetings.

Patrick Walter  
General Manager  
July 2017

**PURISSIMA HILLS WATER DISTRICT  
2016 ANNUAL WATER QUALITY REPORT  
(CONSUMER CONFIDENCE REPORT)**

**SFPUC DRINKING WATER SOURCES**

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 snowmelt flowing down the Tuolumne River to storage in Hetch Hetchy Reservoir. The pristine, well protected Sierra water source is exempt from filtration requirements by the United States Environmental Protection Agency (USEPA) and State Water Resources Control Board's Division of Drinking Water (SWRCB-DDW). Water from the Hetch Hetchy reservoir receives the following treatments to meet appropriate drinking water standards: disinfection by ultraviolet light and chlorine, corrosion control by adjustment of the water pH value, fluoridation for dental health protection, and chloramination for maintaining disinfectant residual and minimizing disinfection byproduct formation.

The Hetch Hetchy water is supplemented with surface water from two local watersheds. Rainfall and runoff from the 35,000-acre Alameda Watershed in Alameda and Santa Clara counties are collected in the Calaveras and San Antonio reservoirs and delivered 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 the Crystal Springs, San Andreas, and Pilarcitos reservoirs, and delivered to the Harry Tracy Water Treatment Plant. In addition to these local sources, the SWRCB approved the SFPUC to use surface water collected in Lake Eleanor, Lake Cherry, and the associated creeks all conveyed via the Lower Cherry Aqueduct, Early Intake Reservoir and Tuolumne River the associated creeks (collectively known as Upcountry Non-Hetch Hetchy Sources, or UNHHS) as an additional drinking water sources in the SFRWS. The UNHHS water, if used, will be treated at the SVWTP prior to service to customers. In 2016, the SFRWS did not use the UNHHS. Water at the two treatment plants is subject to filtration, disinfection, fluoridation, and pH adjustment for corrosion control optimization.

**SFPUC PROTECTS THE WATERSHEDS**

The SFPUC conducts watershed sanitary survey for Hetch Hetchy source annually and local water sources every five years. The latest local sanitary survey was completed in 2016. The SFPUC conducted a special water shed 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 the National Park Service and US Forest Service.

These surveys have identified wildlife, stock, and human activities as potential contamination sources. The reports are available for review at the San Francisco District office of SWRCB at **(510) 620-3474**.

**THE HIGHEST QUALITY WATER**

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 2016, WQD staff conducted 50,200 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 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.

**PURISSIMA HILLS WATER DISTRICT OPERATION AND MAINTENANCE**

PHWD, serving two-thirds of Los Altos Hills, operates the distribution system to ensure that the treated water maintains residual chloramine to prevent the re-growth of microorganisms during the storage and transmission of water. Water is kept fresh by flushing mains and cycling storage tanks, as well as maintaining an active backflow, or cross-connection control, program to help prevent the intrusion of potentially harmful materials into the drinking water system.

**Purissima Hills Water District (PHWD)**  
**2016 Water Quality Data <sup>(1)</sup>**  
**Hetch Hetchy and Sunol Valley Water Treatment Plant**

DETECTED CONTAMINANTS	Unit	MCL	PHG or (MCLG)	Range or Level Found	Average or [Max]	Major Sources in Drinking Water
<b>TURBIDITY</b>						
Unfiltered Hetch Hetchy Water	NTU	5	N/A	0.3 - 0.5 <sup>(2)</sup>	[3.2]	Soil runoff
	NTU	1 <sup>(3)</sup>	N/A	-	[1]	Soil runoff
Filtered Water from Sunol Valley Water Treatment Plant (SVWTP)	-	min 95% of samples ≤ 0.3 NTU <sup>(3)</sup>	N/A	98% - 100%	-	Soil runoff
<b>DISINFECTION BYPRODUCTS AND PRECURSOR</b>						
Total Trihalomethanes	ppb	80	N/A	1.0 - 67.7	[61.2] <sup>(4)</sup>	Byproduct of drinking water disinfection
Haloacetic Acids	ppb	60	N/A	36.8 - 77.8	[54.7] <sup>(4)</sup>	Byproduct of drinking water disinfection
Total Organic Carbon <sup>(5)</sup>	ppm	TT	N/A	1.6 - 5.3	2.4	Various natural and man-made sources
<b>MICROBIOLOGICAL</b>						
Total Coliform	-	NoP ≤ 5.0% of monthly samples	(0)	-	[0]	Naturally present in the environment
<i>Giardia lamblia</i>	cyst/L	TT	(0)	0 - 0.11	0.03	Naturally present in the environment
<b>INORGANICS</b>						
Fluoride (source water) <sup>(6)</sup>	ppm	2.0	1	ND - 0.8	0.3 <sup>(7)</sup>	Erosion of natural deposits; water additive to promote strong teeth
Chloramine (as chlorine)	ppm	MRDL = 4.0	MRDLG = 4	0.4 - 2.8	[2.56] <sup>(8)</sup>	Drinking water disinfectant added for treatment
<b>CONSTITUENTS WITH SECONDARY STANDARDS</b>						
Unit	SMCL	PHG	Range	Average	Typical Sources of Contaminant	
Aluminum <sup>(9)</sup>	ppb	200	600	ND-55	ND	Erosion of natural deposits; some surface water treatment
Chloride	ppm	500	N/A	<3 - 16	8.8	Runoff / leaching from natural deposits
Color	unit	15	N/A	<5 - 11	<5	Naturally occurring organic materials
Specific Conductance	µS/cm	1600	N/A	31 - 218	146	Substances that form ions when in water
Sulfate	ppm	500	N/A	1 - 30	16	Runoff / leaching from natural deposits
Total Dissolved Solids	ppm	1000	N/A	<20 - 95	63	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	13-880 <sup>(10)</sup>	130.0	Internal corrosion of household water plumbing systems
Lead	ppb	15	0.2	<1.0-230.0 <sup>(11)</sup>	4.7	Internal corrosion of household water plumbing systems

OTHER WATER QUALITY PARAMETERS	Unit	ORL	Range	Average
Alkalinity (as CaCO <sub>3</sub> )	ppm	N/A	7 - 112	39
Boron	ppb	1000 (NL)	ND - 123	ND
Bromide	ppb	N/A	<5 - 19	8
Calcium (as Ca)	ppm	N/A	2 - 18	10
Chlorate <sup>(12)</sup>	ppb	800 (NL)	47 - 250	143
Hardness (as CaCO <sub>3</sub> )	ppm	N/A	8 - 76	44
Magnesium	ppm	N/A	0.2 - 6	3.6
pH	-	N/A	8.2 - 9.8	9.4
Phosphate (Ortho)	ppm	N/A	<0.03 - 0.11	0.04
Potassium	ppm	N/A	0.2 - 1.0	0.6
Silica	ppm	N/A	5.1 - 5.7	5.3
Sodium	ppm	N/A	2.6 - 17	11.0
Strontium	ppb	N/A	13 - 204	95

**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 = part per billion  
ppm = part per million  
µS/cm = microSiemens / centimeter

Notes:

- (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 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) In May 2015, the SWRCB recommended a fluoride level in the treated water be maintained at 0.7 ppm. In 2016, the range and average of the fluoride levels were 0.5 ppm - 0.8 ppm and 0.6 ppm, respectively.
- (7) 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 reservoirs.
- (8) This is the highest running annual average value.
- (9) Aluminum also has a primary MCL of 1,000 ppb.
- (10) The most recent Lead and Copper Rule monitoring was in July, 2016. 0 of 20 water samples collected at consumer taps had COPPER concentrations above the Action Level.
- (11) The most recent Lead and Copper Rule monitoring was in July, 2016. 1 of 20 water samples collected at consumer taps had LEAD concentrations above the Action Level.
- (12) The detected chlorate in the treated water is a degradation product of sodium hypochlorite used by the SFPUC for water disinfection.

## **WATER QUALITY DATA FOR 2016**

The adjacent table lists drinking water contaminants detected in 2016 and the information about their typical sources. Contaminants below detection limits for reporting are not shown, in accordance with regulatory guidance. The SFPUC received a monitoring waiver from the SWRCB-DDW for some contaminants and therefore their monitoring frequencies are less than annual.

## **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, can be naturally occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- **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 storm water runoff, agricultural application and septic systems.
- **Radioactive Contaminants** can be naturally occurring or be the result of oil and gas production and mining activities.
- **Pesticides and Herbicides** that may come from a variety of sources such as agricultural, urban storm water runoff, and residential uses.

More information about contaminants and potential health effects can be obtained by calling the USEPA's Safe Drinking Water Hotline (800) 426-4791 or at [www.epa.gov/safewater](http://www.epa.gov/safewater).

## **KEY WATER QUALITY TERMS**

The following are definitions of key terms noted on the adjacent water quality data table. These terms refer to the standards and goals for water quality described below.

- **Public Health Goal (PHG):** The level of a contaminant in drinking water for 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 for 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 and MCLGs as is economically or technologically feasible. Secondary MCLs (SMCLs) are set to protect 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 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, reporting, 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 in the water is also used to indicate the effectiveness of the filtration systems. High turbidity can hinder the effectiveness of disinfectants.

## **CRYPTOSPORIDIUM**

*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 both source and treated water supplies in 2016. 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.

## **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, some elderly people, and infants can be particularly at risk from infections.

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

## **REDUCING LEAD FROM PLUMBING FIXTURES**

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 the PHWD service area. The PHWD is responsible for providing high quality drinking water, but cannot control the variety of materials used in households or building plumbing components. It is possible that lead levels at your home may be higher than at others because of plumbing materials used in your property.

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Infants and young children are typically more vulnerable to lead in drinking water than the general population. 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 (or until the water temperature has changed) before using water for drinking or cooking. If you are concerned about lead levels 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 USEPA's Safe Drinking Water Hotline (800) 426-4791 or at [www.epa.gov/safewater/lead](http://www.epa.gov/safewater/lead).

## **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 SFPUC's fluoride target level in the water is 0.7 milligram per liter, consistent with the May 2015 State regulatory guidance on the new optimal fluoride level. 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 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 health provider or SWRCB if you have concerns about dental fluorosis. For additional information about fluoridation or oral health, visit the CDC website [www.cdc.gov/fluoridation](http://www.cdc.gov/fluoridation) or SWRCB-DDW website [www.waterboards.ca.gov/drinking\\_water/certlic/drinkingwater/Fluoridation.shtml](http://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/Fluoridation.shtml)

## **STORING EMERGENCY WATER SUPPLIES**

Although the PHWD strives to ensure a reliable supply of water for our customers, a natural disaster, such as a major earthquake, could interrupt water delivery. Residents are encouraged to store drinking water in case of an emergency. We recommend storing a minimum of three days' worth of water (one gallon of water per person, per day, including pets) in food-grade plastic containers, such as two-liter soda bottles, and replacing supplies every six months. To learn more about emergency preparedness for yourself and your family, visit [www.72hours.org](http://www.72hours.org).

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