

## Water Quality: Contaminants and Regulations

The SFPUC's Water Quality Division regularly collects and tests water samples from reservoirs and designated sampling points throughout the system to ensure that the SFPUC's water meets or exceeds federal and state drinking water standards. In 2010 Water Quality staff conducted 58,750 drinking water tests in the transmission and distribution systems. This monitoring effort is in addition to the extensive treatment process control monitoring performed by SFPUC certified treatment plant staff.

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. 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.

The table on the inside lists all drinking water contaminants detected in 2010. Contaminants below detection limits, such as arsenic, perchlorate, MTBE, and others, are not listed. In the same year, SFPUC also completed four quarters of monitoring 25 contaminants that are not required under the USEPA second Unregulated Contaminant Monitoring Regulation. All 25 contaminants were not detected in the water supplied to you. The list of these contaminants is available at the USEPA website: [www.epa.gov/safewater/ucmr/ucmr2/basicinformation.htm#list](http://www.epa.gov/safewater/ucmr/ucmr2/basicinformation.htm#list)

The table contains the name of each contaminant, the applicable drinking water standards or regulatory action levels, the ideal goals for public health, the amount detected in water, the typical contaminant sources, and footnotes explaining the findings. The State allows the SFPUC to monitor for some contaminants less than once per year because their concentrations do not change. For certain other contaminants that were absent in the water based on many years of monitoring, the SFPUC received a monitoring waiver from the State.

In order to ensure that tap water is safe to drink, the U.S. Environmental Protection Agency (USEPA) and the California Department of Public Health (CDPH) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. CDPH regulations also establish limits for contaminants in bottled water that must provide the same protection for public health. More information about contaminants and potential health effects can be obtained by calling the USEPA's Safe Drinking Water Hotline at 1-800-426-4791.

### 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 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, that 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, that can be naturally occurring or be the result of oil and gas production and mining activities.

### Special Health Needs

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised 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 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 Safe Drinking Water Hotline (1-800-426-4791) or at [www.epa.gov/safewater](http://www.epa.gov/safewater).

**Cryptosporidium** is a parasitic microbe found in surface water. The SFPUC regularly tests for this waterborne pathogen, and found it at very low levels in source water and treated water in 2010. However, current test methods approved by the USEPA do not distinguish between dead organisms and those capable of causing disease. If ingested these parasites 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.

### Reducing Lead from Plumbing Fixtures

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. The Mid-Peninsula Water District is responsible for providing high quality drinking water, but cannot control the variety of materials used in your household or building 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 it tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline 800-426-4791 or at [www.epa.gov/safewater](http://www.epa.gov/safewater).



# Mid-Peninsula Water District 2010 Annual Water Quality Report

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

**Chinese(traditional):**

“此報告包含有關您的飲用水的重要資訊。請人幫您翻譯出來，或請能看懂此報告的人將內容說給您聽。”

**Spanish:** “Este informe contiene información muy importante acerca de su agua potable. Haga que alguien lo traduzca para usted, o hable con alguien que lo entienda bien.”

**Tagalog:** “Naglalaman ang report na ito ng importanteng impormasyong tungkol sa iyong iniinom na tubig. Magkaroon ng isang tao na isasalin ito sa iyong nika para sa iyo, o makipag-usap sa isang tao na nakakaintindi dito.”

The Mid-Peninsula Water District is pleased to present this 2010 Annual Water Quality Report (Consumer Confidence Report) to our customers. It is important to our Board of Directors and Staff that our customers are informed about the quality of their drinking water. The Mid-Peninsula Water District exists to serve our customers by obtaining and distributing a safe, reliable, high quality supply of water for current and future needs in the most cost efficient manner. Should you have any questions or concerns regarding this report, please feel free to call the District Office at (650) 591-8941 and one of our Customer Service Representative or Technicians will be happy to assist you.

### Where SFPUC Water Comes From

In 2010, the Hetch Hetchy watershed provided the majority of our total water supply, with the remainder contributed by the local watersheds.

### Protecting Our Watersheds

The SFPUC actively and aggressively protects the natural water resources entrusted to its care. Its annual Hetch Hetchy Watershed survey evaluates the sanitary conditions, water quality, potential contamination sources, and the results of watershed management activities by the SFPUC and its partner agencies, including the National Park Service. To reduce contamination sources, the SFPUC also conducts sanitary surveys of local Alameda and Peninsula watersheds every five years. These surveys identified wildlife and human activity as potential contamination sources. The reports are available for review at the CDPH's San Francisco District office at (510)620-3474.

### Our Drinking Water Sources

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. For our system, the major water source originates from spring snowmelt flowing down the Tuolumne River to the Hetch Hetchy Reservoir, where it is stored. This pristine water source is located in the well-protected Sierra region and meets all federal and state criteria for watershed protection. Based on the SFPUC's disinfection treatment practice, extensive bacteriological-quality monitoring, and high operational standards, the State has granted the Hetch Hetchy water source a filtration exemption. In other words, the source is so clean and protected that the SFPUC is not required to filter water from the Hetch Hetchy Reservoir.

The Hetch Hetchy water is supplemented with surface water from two local watersheds. Rainfall and runoff collected from the Alameda Watershed, spanning more than 35,000 acres in Alameda and Santa Clara Counties, are captured in Calaveras and San Antonio Reservoirs and treated at Sunol Valley Water Treatment Plant before distribution.

### MPWD Board Meetings Held Every 4th Thursday of Every Month

The Mid-Peninsula Water District Board of Directors hold a Board Meeting on the 4th Thursday of each month. Customers are encouraged to attend these meetings. The meetings are held at our District Office at 3 Dairy Lane, Belmont commencing at 6:30p.m.

DETECTED CONTAMINANTS	UNIT	PHG or (MCLG)	MCL	RANGE or LEVEL FOUND	AVERAGE or MAXIMUM	Typical Sources in Drinking Water
<b>TURBIDITY</b>						
Unfiltered Hetch Hetchy Water	NTU	N/A	5	0.2-0.6 (7)	(4.9) (3)	Soil run-off
Filtered Water from Harry Tracy Water Treatment Plant (HTWTP) min 95% of samples < 0.3 NTU (5)	NTU	N/A	1 (4)	-	(0.19)	Soil run-off
Filtered Water from Sunol Valley Water Treatment Plant (SVWTP) min 95% of measurements < 0.3 NTU (5)	-	N/A		100%	-	Soil run-off
	NTU	N/A	1 (4)	97.6%-100%	(0.54)	Soil run-off
	-	N/A			-	Soil run-off
<b>DISINFECTION BY-PRODUCTS (SFPUC Reginal System)</b>						
Total Trihalomethanes (TTHMs)	ppb	N/A	80	14-92	(40) (6)	By-product of drinking water chlorination
Total Haloacetic Acids (HAAs)	ppb	N/A	60	7-55	(25) (6)	By-product of drinking water chlorination
Total Organic Carbon (TOC) (7)	ppm	N/A	TT	2.4 - 3.2	2.7	Various natural and man-made sources
<b>DISINFECTION BY-PRODUCTS (MPWD)</b>						
Total Trihalomethanes (TTHMs)	ppb	N/A	80	28.8 - 62.9	49.2 (5)	By-product of drinking water chlorination
Total Haloacetic Acids (HAAs)	ppb	N/A	60	21 - 56.9	38.6 (5)	By-product of drinking water chlorination
Total Organic Carbon (TOC) (7)	ppm	N/A	N/A	2.4 - 3.2	2.7	Various natural and man-made sources
<b>MICROBIOLOGICAL (MPWD)</b>						
Total Coliform - Number of Coliform-Positive Samples (NoP) (8)	%	(0)	<5.0%	0	0	Naturally present in the environment
Giardia lamblia	cyst/L	(0)	TT	ND - 0.06	[0.06]	Naturally present in the environment
<b>INORGANIC CHEMICALS</b>						
Fluoride (source water) (8)	ppm	1	2.0	ND - 0.15	ND	Erosion of natural deposits
Chlorine (Free and Total) (MPWD)	ppm	MRDLG=4	MRDL=4.0	1.2 - 2.5	1.92(5)	Drinking water disinfectant added for treatment
<b>CONSTITUENTS WITH SECONDARY STANDARDS</b>						
		PHG	SMCL	RANGE	AVERAGE	
Chloride	ppm	N/A	500	3 - 16	9.5	Runoff / leaching from natural deposits
Color	unit	N/A	15	<5-6	<5	Substances that form ions when in water
Specific Conductance	µS/cm	N/A	1600	33 - 316	179	Runoff / leaching from natural deposits
Sulfate	ppm	N/A	500	1.6 - 38.7	18.2	Runoff / leaching from natural deposits
Total Dissolved Solids	ppm	N/A	1000	27 - 174	95	Soil runoff
Turbidity	NTU	N/A	5	0.07- 0.33	0.16	
<b>LEAD AND COPPER RULE STUDY (MPWD)</b>						
		PHG	AL	RANGE	90th PERCENTILE	
Copper	ppb	300	1300	11.5 - 129.8 (11)	76.7	Corrosion of household plumbing systems
Lead	ppb	0.2	15	<1.0 - 9 (12)	6.2	Corrosion of household plumbing systems
<b>OTHER WATER QUALITY PARAMETERS</b>						
		RANGE	ORL	AVERAGE		
Alkalinity (as CaCO3)	ppb	8 - 98	N/A	49		< / < = less than / less than or equal to
Bromide	ppb	<10-17	N/A	<10		AL = Action Level
Calcium (as Ca)	ppm	2 - 26	N/A	12		Max = Maximum
Chlorate(12)	ppb	92 -357	(800) NL	150		Min = Minimum
Hardness (as CaCO3)	ppm	8 - 104	N/A	53		N/A = Not Available
Magnesium	ppm	0.3 - 9	N/A	4.6		ND = Non-detect
pH	-	8.2 - 8.7	N/A	8.5		NL = Notification Level
Potassium	ppm	0.34 - 1.2	N/A	0.6		NTU = Nephelometric Turbidity Unit
Silica	ppm	4.1 - 7.6	N/A	5.7		ORL = Other Regulatroy Level
Sodium	ppm	3-22	N/A	13		ppb = parts per billion
						ppm = parts per million
						µS/cm = microSiemens/centimeter

### Key Water Quality Terms

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.

**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 are set to protect the odor, taste, and appearance of drinking water.

**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.

**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 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.

**Treatment Technique (TT):** A required process intended to reduce the level of a contaminant in drinking water.

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

**Turbidity:** A water clarity indicator that is also used to indicate the effectiveness of the filtration plants. High trubidity can hinder the effectiveness of disinfectants.

### 2010 Water Quality Accomplishments

In 2010 MPWD staff completed its bi-annual water storage tank inspection and cleaning. All of our tanks (with the exception of the brand new tank at Exbourne tank site) were emptied in order to inspect the coating and remove all sediment. Of the 10 tanks, 8 were in good condition, with the other two needing additional work which is now in the planning phase. Tank maintenance is essential to prolong the life of the tank and to ensure our customers are getting the highest quality water delivered to them.

(1) All results met State and Federal drinking water regulations.

(2) Turbidity is measured every four hours. These are monthly average turbidity values.

(3) This is the highest turbidity of the unfiltered water served to customers in 2010. The switch of San Joaquin Pipelines and rate change caused elevated turbidities as a result of sediment resuspension in the pipelines. The turbidity spike was not observed further downstream at Alameda East.

(4) There is no MCL for turbidity. The limits are based on the TT requirements in the State drinking water regulations.

(5) This is the highest quarterly running annual average value.

(6) Total Organic Carbon is a precursor for disinfection by-product formation. The TT requirement applies to the filtered water from the SVWTP only.

(7) The Mid-Peninsula Water District had 0 positive samples in 2010

(8) The SFPUC adds fluoride to the naturally occurring level to help prevent dental caries in consumers. The CDPH requires our fluoride levels in the treated water to be maintained within a range of 0.8 ppm- 1.5 ppm. In 2010, the range and average of our fluoride levels were 0.6ppm - 1.5ppm and 1.0ppm, respectively.

(9) The naturally occurring fluoride levels in the Hetch Hetchy and SVWTP are ND and 0.15 ppm, respectively. The HTWTP raw water had elevated fluoride levels of 0.7 ppm-0.9 ppm due to the continued supply of the fluoridated Hetch Hetchy and SVWTP treated water into the lower Crystal Springs Reservoir, which supplies water via the San Andreas Reservoir to the HTWTP for treatment.

(10) The most recent Lead and Copper Rule monitoring was in 2009. 0 out of 33 water samples collected at consumer taps had copper concentrations above the action levels

(11) The most recent Lead and Copper Rule monitoring was in 2009. 0 out of 33 water samples collected at consumer taps had lead concentrations above the action levels

(12) There was no chlorate detected in the raw water sources except the Crystal Springs and San Andreas Reservoir, where the detected chlorate were 81 ppb and 57 ppb, respectively. The chlorate levels in both reservoirs are due to the transfer of the disinfected Hetch Hetchy water and SVWTP effluent into the Crystal Springs Reservoir. The detected chlorate in the treated water is a byproduct of the degradation of sodium hypochlorite, the primary disinfectant used by SFPUC for water disinfection.

Note: Additional water quality data may be obtained by calling the Mid-Peninsula Water District phone number at (650) 591-8941.