

2014 ANNUAL WATER QUALITY REPORT

Presidio of San Francisco



The Presidio Water Treatment Plant vigilantly safeguards its water supplies. Last year, Presidio tap water met all U.S. Environmental Protection Agency and State drinking water health standards. This report details where your water comes from and how its quality is measured.

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



THE PRESIDIO WATER SUPPLY

The Presidio gets its water from two sources. Seventy to eighty percent is drawn from the Presidio's Lobos Creek, the last free-flowing natural stream in San Francisco. The remainder is purchased from the San Francisco Water Department. This water is drawn from the Hetch Hetchy Watershed, the Alameda County Watershed, and the Peninsula Watershed.

LOBOS CREEK

Most of the Presidio's potable water needs are met by a local surface water source, Lobos Creek, which runs along the Presidio's southwest corner. Daily flows in 2014 averaged 1.5 million gallons per day. The Presidio Water Treatment Plant (PWTP) draws from the flow of Lobos Creek, treats the water, and distributes it park-wide to more than 1,300 service connections. Treatment processes at the PWTP include coagulation, flocculation, sedimentation, filtration, disinfection, fluoridation, and chloramination.

To ensure healthy water, the Presidio Trust implements a Water Quality Management Plan that includes procedures to detect and remedy any potential sources of contaminants. The Trust also has a sampling program that requires quarterly Volatile Organic Compounds (VOC) testing. Additionally, the Trust monitors the trend of Tetrachloroethylene (PCE) levels in Lobos Creek (for complete results, see the tables beginning on p. 4). Raw samples are taken from Lobos Creek; treated samples are taken from the main reservoir.

A source water assessment (entitled the *Watershed Sanitary Survey*) of Lobos Creek was last updated in November 2011. A copy is available in the Presidio Trust Library, 103 Montgomery Street, in the Presidio. The library can be reached at (415) 561-5343. Lobos Creek sample analysis results have detected low levels (.6 parts per billion) of Tetrachloroethylene (PCE) from dry cleaning establishments located throughout the neighboring Richmond District of San Francisco. However, treated samples from the drinking water supply have not detected any PCE. Lobos Creek also contains detectable levels of nitrate that may come

from leaks in the San Francisco combined sewer/storm system but the nitrate level has never exceeded the Maximum Contaminant Level (MCL).

The Richmond Transport System, a combined storm and sanitary waste collection system that crosses beneath the creek near 25th Avenue and Lincoln Boulevard, is a Potential Contaminant Activity (PCA). Three other possible PCAs include a former military missile site and two landfills located northeast of the creek. These sites were cleaned up as part of the Presidio Trust remediation program. Ground water monitoring has been conducted at all three remediation sites before and after clean-up to ensure the Trust's potable water sources remain safe.

Other PCAs with a high impact ranking are gas stations, landfills, chemical storage, metal fabrication and plastics producers. Though these types of activities exist within the watershed boundary, there is no evidence that they contaminate the water supply.

SAN FRANCISCO WATER DEPARTMENT

Hetch Hetchy Reservoir is located in the Sierra region and meets all federal and state criteria for watershed protection. Based on the San Francisco Public Utilities Commission (SFPUC) disinfection treatment practice, extensive bacteriological-quality monitoring, and high operational standards, the State has granted the Hetch Hetchy water source a filtration exemption because the source meets filtration avoidance criteria. 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, which spans more than 35,000 acres in Alameda and Santa Clara Counties, are collected in the Calaveras and San Antonio Reservoirs. Prior to distribution, the water from these reservoirs is treated at the Sunol Valley Water Treatment Plant (SVWTP). Treatment processes include coagulation, flocculation, sedimentation, filtration, and disinfection. Fluoridation, chloramination and

corrosion control treatment are provided for the combined Hetch Hetchy and SVWTP water at the Sunol Chloramination and Fluoridation Facilities. Rainfall and runoff captured in the 23,000-acre Peninsula Watershed, located in San Mateo County, are stored in four reservoirs: Crystal Springs (Lower and Upper), San Andreas, Pilarcitos, and Stone Dam. The water from these reservoirs is treated at the Harry Tracy Water Treatment Plant (HTWTP). Treatment processes at the HTWTP include ozonation, coagulation, flocculation, filtration, disinfection, fluoridation, corrosion control treatment, and chloramination.

The Hetch Hetchy Watershed Sanitary Survey evaluates the sanitary conditions, water quality, potential contamination sources, and the results of watershed management activities with partner agencies including National Park Service and U.S. Forest Service.

SFPUC also conducts sanitary surveys every five years to detect and track sanitary concerns for the local watersheds and the approved standby water sources in the Early Intake Watershed, which includes Cherry

Lake and Lake Eleanor. The latest 5-year surveys were completed in 2011 for the period of 2006-2010. These surveys identified wildlife, stock, and human activities as potential contamination sources. The reports are available for review at the San Francisco District office of the State Water Resources Control Board (SWRCB), which can be reached at (510) 620-3474.

QUESTIONS?

If you have questions about this report or Presidio drinking water, please contact Dan Patrick at the Presidio Water Treatment Plant, at (415) 561-4134. To learn about drinking water regulations, visit the California Department of Public Health at www.cdph.ca.gov or the U.S. Environmental Protection Agency at www.epa.gov.

San Francisco water policy issues are decided at the San Francisco Public Utilities Commission (SFPUC) hearings, held the second and fourth Tuesdays of each month at 1:30 pm at San Francisco City Hall, Room 400 (visit www.sfwater.org). For information about Presidio Trust public meetings, call (415) 561-5300 or visit www.presidio.gov.

WATER CONSERVATION

In April 2015 Governor Jerry Brown issued an Executive Order that requires the California State Water Resources Control Board to impose restrictions to achieve a statewide 25 percent reduction in potable urban water use. These restrictions will require water suppliers to California's cities and towns to reduce usage as compared to 2013. This reduction applies to the Presidio Trust as a municipal customer.

What is the Presidio Trust doing?

- Reducing irrigation run times by 25 percent with weekly monitoring to observe how turf areas respond
- Watering lawns and plants at night or early in the morning to reduce evaporation
- Implementing a tiered system for watering turf areas that prioritizes areas with a strong community use and that considers redesign of other landscapes with drought resistant plants
- Using irrigation moisture sensors to ensure the amount applied is not excessive
- Improving efficiency by replacing aged sprinkler heads and components
- Operating the Presidio Water Treatment Plant to allow for maximum production
- Installing low flow toilets, high-efficiency showerheads, faucet aerators, and Energy Star dishwashers in park buildings

What can you do?

For water conservation tips, visit www.SaveOurWater.com

WATER QUALITY DATA

WHY TEST DRINKING WATER?

The Presidio Trust conducts extensive testing of the park's water supplies and distribution system to ensure that the Presidio's drinking water is safe and healthy. In all cases, Presidio drinking water meets or exceeds the standards set by federal and state health protection agencies. The State allows the Trust to monitor for some contaminants less than once per year because concentrations of these contaminants do not change frequently. Some of the data, though representative, are more than one year old.

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. 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.

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.

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 storm water 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 storm water 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 storm water 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.

More information about contaminants and potential health effects can be obtained by calling the USEPA's Safe Drinking Water Hotline (800) 426-4791.

IRON AND MANGANESE

We routinely detect high levels of minerals, iron and manganese (see analyses) in Lobos Creek. However, treated water testing results were well below the Secondary MCL. Iron and manganese are secondary constituents that affect the aesthetic quality of water (i.e. taste, color and odor), but do not pose a health threat. Manganese has a tendency to discolor water.

These tables list all drinking water contaminants detected in the Presidio in 2014. Presidio drinking water met or surpassed all state and federal water quality requirements.

TABLE 1: INDIVIDUAL TAP MONITORING FOR LEAD AND COPPER

Monitoring of individual taps from locations within the water system is performed every three years and was last performed in June 2013 to verify that the delivered water does not contain lead or copper at levels that may have negative health effects. The next round of tests is scheduled for June 2016. This table summarizes the most recent monitoring for these constituents.						
	NO. OF SAMPLES	90TH PERCENTILE LEVEL DETECTED	ACTION LEVEL	NO. OF SITES EXCEEDING ACTION LEVEL	PHG	TYPICAL SOURCE
Lead (ppb)	10	2.1	15	0	0.2	Corrosion of plumbing systems
Copper (ppm)	10	.260	1.3	0	0.3	Corrosion of plumbing systems

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 Presidio Water Treatment Plant is 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.

TABLE 2: DISTRIBUTION SYSTEM MICROBIOLOGICAL SUMMARY

MICROBIOLOGICAL CONTAMINANTS	HIGHEST NO. OF DETECTIONS	MCL	MCLG	TYPICAL SOURCE OF BACTERIA
Total Coliform	0	More than one sample in a month with a detection	0	Naturally present in the environment
Fecal Coliform or E. coli	0	A routine sample and a repeat sample detect total coliform and either sample also detects fecal coliform or E. coli	0	Human and animal fecal waste

TABLE 3: DETECTION OF CONTAMINANTS WITH A PRIMARY DRINKING WATER STANDARD

CHEMICAL OR CONSTITUENT (REPORTING UNITS)	SAMPLE DATE	LEVEL DETECTED	RANGE OF DETECTIONS	MCL	PHG (MCLG)	TYPICAL SOURCE OF CONTAMINANT
Asbestos (MFL)	2010	.37	.37	7	7	Internal corrosion of asbestos cement water mains; Erosion of natural deposits.
Nitrate (ppm)	2014	36	8-36	45	45	Erosion of natural deposits, Soil run-off
PCE (ppb)	2014	.6	.6	5	0	Leaching from PVC pipes, discharge from factories, dry cleaners and auto shops (metal degreaser)

Some people who drink water containing asbestos in excess of the MCL over many years may have an increased risk of developing benign intestinal polyps. 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 a 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. **The PCE results are from Lobos Creek. Treated water samples show no detection of PCE.** (MFL = million fibers per liter)

TABLE 4: SAMPLING RESULTS SHOWING TREATMENT OF SURFACE WATER SOURCES

PRESIDIO TREATED WATER: 2014	
TREATMENT TECHNIQUE*	CONVENTIONAL FILTRATION
Turbidity Performance Standards**	Turbidity of the filtered water must: 1 - Be less than or equal to 0.15 NTU in 95% of measurements in a month. 2 - Not to exceed one NTU for more than eight consecutive hours. 3 - Not to exceed five NTU at any time
Lowest monthly % of samples that met Turbidity Performance Standard No. 1	100%
Highest single turbidity measurement during the year	.056 NTU
The number of violations of any surface water treatment requirements	None

* A required process intended to reduce the level of a contaminant in drinking water.
** Turbidity (measured in NTU) is a measurement of the cloudiness of water and is a good indicator of water quality and filtration performance. Turbidity results that meet performance standards are considered to be in compliance with filtration requirements. The likely source of turbidity is soil runoff.

SAN FRANCISCO TREATED WATER: 2014

Turbidity - Harry Tracy Treatment Plant	2014	= or <.3 NTU 100% of the time	Highest .07 NTU
Turbidity - Sunol Treatment Plant	2014	= or <.3 NTU 97-100% of the time	Highest .98 NTU
Turbidity - Unfiltered Hetch Hetchy	2014	Range .2-6 NTU	Highest 2.8 NTU
Filtered water must be equal or less than .3 NTU 95% of the time. Both Harry Tracy and Sunol Water Treatment Plants met this standard 97% of the time			

TABLE 4a: DISINFECTION BYPRODUCTS

DETECTED CONTAMINANT	UNIT	MCL	RANGE OF DETECTION	HIGHEST LRAA	TYPICAL SOURCE IN DRINKING WATER
Total Trihalomethanes	ppb	80	40.3-59.9	48.8	Byproduct of chlorination
Haloacetic Acids	ppb	60	14.7-29.9	20.6	Byproduct of chlorination

(ppm=parts per million / ppb=parts per billion / NTU=nephelometric turbidity unit / LRAA=locational running annual average)

KEY 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.

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.

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.

Regulatory Action Level (RAL): 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.

.... WATER QUALITY DATA CONTINUED

TABLE 5: SECONDARY STANDARDS

No MCLG for secondary constituents. Typical source of contamination for the following is run off/leaching from natural deposits.

PRESIDIO WATER: LOBOS CREEK

	DATE OF TEST	LEVEL DETECTED	SECONDARY MCL
Aluminum	2014	9 ppb	200ppb
Hardness	2014	224 ppm	none set
Sodium	2014	31 ppm	none set
Sulfate	2014	41 ppm	500 ppm
Iron	2014	538 ppb	300 ppb
Manganese	2014	115 ppb	50 ppb
Chloride	2014	47 ppm	500 ppm
Color	2014	8 units	15 units
Conductivity	2014	603 uS/cm	1600 uS/cm
TDS	2014	344 ppm	1000 ppm

SAN FRANCISCO WATER

	DATE OF TEST	RANGE	AVERAGE	SECONDARY MCL
Aluminum	2014	not reported	not reported	200 ppb
Hardness	2014	7-77 ppm	46 ppm	none set
Sodium	2014	2.4-16 ppm	10 ppm	none set
Sulfate	2014	.9-32 ppm	17 ppm	500 ppm
Iron	2014	not reported	not reported	300 ppb
Manganese	2014	not reported	not reported	50 ppm
Chloride	2014	< 3-15 ppm	9 ppm	500 ppm
Color	2014	not reported	not reported	15 units
Conductivity	2014	32-222 uS/cm	151 uS/cm	1600 uS/cm
TDS	2014	31-120 ppm	81 ppm	1000 ppm

Periodically, your water may appear yellowish-brown. If you experience this, let your water run for several minutes or until the color goes away. If the problem persists, please call the Presidio Water Treatment Plant at (415) 561-4134.

RADIOLOGICAL WATER QUALITY

Results of most recent test for radiological constituents:
Below MCL: All. Date: 4/2012

DISINFECTION AND FLUORIDATION

The Presidio Water Treatment Plant used chloramines as a disinfectant in 2014. The San Francisco Water Department also used chloramines. Chloramines are a combination of chlorine and ammonia. Chloramines are disinfectants that are believed to reduce potentially harmful by-products of chlorine alone. Chloramines may be toxic to some pet fish and kidney dialysis patients.

Mandated by State law, water fluoridation is a widely accepted practice proven to be safe and effective for preventing and controlling tooth decay. Presidio water is fluoridated at 1.0 milligram per liter. Infants fed formula mixed with water containing fluoride at this level may have an increased 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. 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 visit the SWRCB website www.swrcb.ca.gov/ and search for fluoride, or the CDC website www.cdc.gov/fluoridation.

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 source water and treated water in 2014; it has also been previously detected at low levels in Lobos Creek. 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 NEEDS

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as those 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 Safe Drinking Water Hotline at (800) 426-4791 or at www.epa.gov/safewater.