



2011 ANNUAL WATER QUALITY REPORT

PRESIDIO OF SAN FRANCISCO



A sixth grade class from San Francisco Day School visits the historic Water Treatment Plant at Baker Beach.

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 informacion muy importante sobre su agua beber. Traduzcalo 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 2011 averaged 1.4 million gallons per day. The Presidio Water Treatment Plant draws from the flow of Lobos Creek, treats the water, and distributes it park-wide to more than 1,000 service connections.

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 tables beginning 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 updated in November 2011; a copy is available in the Presidio Trust Library, 103 Montgomery St., (415) 561-5343. Lobos Creek sample analysis results have detected low levels (.5 to .7 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). Two 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 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 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.

...PRESIDIO WATER SUPPLY CONTINUED

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.

A copy of the complete SFPUC 2011 assessment is available at the San Francisco district office of the California Department of Public Health. Request a copy by calling (510) 620-3474.

QUESTIONS?

If you have questions about this report or Presidio drinking water, please contact Dan Patrick, Presidio Trust, 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/safewater.

San Francisco water policy issues are decided at the San Francisco Public Utilities Commission 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.



THE PRESIDIO COMMUNITY

Located on the tip of the San Francisco peninsula, the Presidio was in constant use as a military post from 1776 to 1994. Today, it is a National Historic Landmark District and a distinct part of the Golden Gate National Recreation Area, the largest urban national park in the United States. People live and work in the Presidio as well as visit, making this a unique public park. The community is comprised of approximately 3,000 residents, 4,000 employees, and thousands of visitors. Their activities depend upon a healthy drinking water system.

Did you know that two new overlooks recently opened in the western Presidio? The Pacific Overlook and the Golden Gate Overlook are located just off Lincoln Boulevard south of the Golden Gate Bridge toll plaza. Trails improvements are a collaborative effort of the Golden Gate National Parks Conservancy, the Presidio Trust, and the National Park Service.

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 us to monitor for some contaminants less than once per year because concentrations of these contaminants do not change frequently. Some of our 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.

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.

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.

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 2011. 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 2010 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 2013. This table summarizes the most recent monitoring for these constituents. No site exceeded the regulatory action level.					
	NO. OF SAMPLES	90TH PERCENTILE LEVEL DETECTED	ACTION LEVEL	MCLG	TYPICAL SOURCE
Lead (ppb)	10	2.0	15	2	Corrosion of plumbing systems
Copper (ppm)	10	.190	1.3	.017	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 <http://www.epa.gov/safewater/lead>.

TABLE 2: DISTRIBUTION SYSTEM MICROBIOLOGICAL SUMMARY

One detection of coliform in 2009.				
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	Natural 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)	2011	.37	.37	7	7	Internal corrosion of asbestos cement water mains; Erosion of natural deposits.
Nitrate (ppm)	2011	37	36-38	45	45	Erosion of natural deposits, Soil run-off
PCE (ppb)	2011	.7	.5 - .7	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.**

TABLE 4: SAMPLING RESULTS SHOWING TREATMENT OF SURFACE WATER SOURCES

TREATMENT TECHNIQUE*	CONVENTIONAL FILTRATION
Turbidity Performance Standards**	Turbidity of the filtered water must: 1 - Be less than or equal to 0.5 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	.30 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.

SAN FRANCISCO TREATED WATER:

Turbidity - Harry Tracy Treatment Plant	2011	<.3 - 100% of the time
Turbidity - Sunol Treatment Plant	2011	<.3 - 98% - 100% of the time

Filtered water must be less than .3 NTU 95% of the time. Both Harry Tracy and Sunol Water Treatment Plants met this standard 100% of the time.

TABLE 4a: DISINFECTION BYPRODUCTS

DETECTED CONTAMINANT	UNIT	MCL	PHG (MCLG)	RANGE OF DETECTIONS	AVERAGE	TYPICAL SOURCE IN DRINKING WATER
TTHM	ppb	80	N/A	31-54	39	Byproduct of drinking water chlorination
HAA5	ppb	60	N/A	6-16	13	Byproduct of drinking water chlorination

(ppm = parts per million / ppb = parts per billion / NTU = nephelometric turbidity unit)

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 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 contaminant for the following is run off/leaching from natural deposits.

PRESIDIO WATER

	DATE OF TEST	LEVEL DETECTED	SECONDARY MCL
Hardness	2011	232 ppm	none set
Sodium	2011	30 ppm	none set
Sulfate	2011	41 ppm	250 ppm
Iron	2011	283 ppb	300 ppb
Manganese	2011	73 ppb	50 ppb
Chloride	2011	47 ppm	500 ppm
Color	2011	17 units	15 units
Conductivity	2011	641 uS/cm	1600 uS/cm
TDS	2011	336 ppm	1000 ppm

SAN FRANCISCO WATER

	DATE OF TEST	RANGE	AVERAGE	SECONDARY MCL
Hardness	2011	10-98	57 ppm	none set
Sodium	2011	3-20	13.5 ppm	none set
Sulfate	2011	1-36	18 ppm	500 ppm
Iron	2011	not reported	not reported	300 ppb
Manganese	2011	.04-8.2	4.9 ppm	50 ppb
Chloride	2011	3-20	11 ppm	500 ppm
Color	2011	not reported	not reported	not reported
Conductivity	2011	39-289	181 uS/cm	1600 uS/cm
TDS	2011	83-194	132 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 Water Treatment Plant at (415) 561-4134.

Radiological Water Quality

Results of most recent test for radiological constituents: Below MCL: All. Date: 2006. Next round of radiological sampling is in 2012.

Disinfection and Fluoridation

The Presidio Water Treatment Plant used chloramines as a disinfectant in 2011. The San Francisco Water Department 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. Water used at the Presidio is fluoridated. Fluoride concentrations are required to stay within a control range of .9 - 1.5 ppm for the Presidio. The average for the year 2011 was 1.1 ppm.

Cryptosporidium

Cryptosporidium is a microbial pathogen found in surface water throughout the United States. Although filtration removes Cryptosporidium, the most commonly-used filtration methods cannot guarantee 100 percent removal. Presidio monitoring indicates the presence of these organisms in our source water. Current test methods do not allow us to determine if the organisms are dead or if they are capable of causing disease. Ingestion of Cryptosporidium may cause cryptosporidiosis, an abdominal infection.

Symptoms of infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals can overcome the disease within a few weeks. However, immuno-compromised people, infants, small children, and the elderly are at greater risk of developing life-threatening illness. We encourage immuno-compromised individuals to consult their doctor regarding appropriate precautions to take to avoid infection. 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 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 Safe Drinking Water Hotline at (1-800-426-4791) or at www.epa.gov/safewater.