

The Harry Tracy Water Treatment Plant



Services of the San Francisco
Public Utilities Commission

The recently upgraded Harry Tracy Water Treatment Plant features five new filters, three new ozone generators, an improved electrical system, a remodeled operations building and a new, seismically resistant 11.5-million-gallon treated water reservoir. The improved facility now has the capacity to provide 140 million gallons of water per day for 60 days within 24 hours of a major earthquake—enough to supply nearly one million people during that time. The Harry Tracy Water Treatment Plant Seismic Upgrade was an essential project on the Peninsula, and part of the SFPUC's \$4.8 billion Water System Improvement Program to repair, replace and seismically upgrade the Hetch Hetchy Regional Water System.



Filter no. 3

Major components of the project were:

- A seismically strengthened operations building renovated with new laboratory, control room and updated security monitoring, and a new server room.
- Filtration process and capacity expansion:
 - Two new washwater tanks. These tanks hold the water used to clean the filters.
 - Four new high-rate washwater clarifiers, five new filters, new applied water channel, filtered water conduit, and filter effluent chamber
 - New chlorine contactor
 - New filter gallery electrical panels
 - Renovated flocculation basins
 - Demolition of two sedimentation basins
 - New sludge tank
 - New ozone generators and power supply units, blowers, and chemical systems
 - New chemical storage buildings
 - New solids handling facilities
 - New 2000-Kw emergency generator and switchgear

- Replacement of major portions of raw and treated water transmission pipelines for seismic reliability. New 78-inch treated water pipeline to connect the treated water reservoir with the San Andreas Pipeline for delivery to customers.
- New emergency chlorination facility to allow for chlorination of untreated San Andreas Reservoir water in the event of a major disaster.
- New 11.5-million-gallon treated water reservoir, designed to move with and withstand a major earthquake.
 - The reservoir roof rests atop 88 concrete columns supported by pre-stressed vertical tendons and attached to walls by neoprene bearing pads
 - The entire structure is wrapped with seismic-strength cables and reinforced with shotcrete
 - Other materials include 83,000 cubic yards of excavated material, 143 miles of post-tensioning steel cables, 1,000 soil nails, and 40,000 pounds of gravel on the TWR roof.



Treated water reservoir

Normally Harry Tracy treats about 35 million gallons of water, pumped up from storage in the Peninsula Watershed reservoirs below. Within approximately an hour, that raw water undergoes disinfection by ozone, isolation of the solids, filtration, and post-treatment at the new treated water reservoir. In general, the plant provides between 8 and 10% of a blended drinking water supply delivered to about one million consumers in San Mateo and San Francisco counties (with 5 to 7 percent coming from the Sunol Valley Water Treatment Plant in Alameda County and the remaining 85% coming from the Hetch Hetchy Regional Water System). However, during the current approximately two-month shutdown for inspection and repair of the Mountain Tunnel and other facilities, the Harry Tracy plant is the sole and fulltime water supply source for San Francisco and parts of the Peninsula, treating approximately 80 to 85 million gallons per day (mgd). (The Sunol Valley Plant has been treating approximately 85 mgd during this period.) The 11.5-million-gallon treated water reservoir—which normally empties and fills twice a day—is now being replenished eight times a day.

The 1972 plant was originally named the San Andreas Water Treatment Plant. In 1994 it was renamed in honor of exemplary long-time Water Quality Manager Harry W. Tracy, who worked for the SFPUC from 1937 until his death in 1985.