Harry Tracy Water Treatment Plant

San Bruno, California, USA

Owner
SAN FRANCISCO PUBLIC UTILITIES COMMISSION (SFPUC)

Contractor
KIEWIT INFRASTRUCTURE WEST (KIW)

Design & Construction
JTD ENGINEERS

Products
CONCENTRATE, MODIFIED

Project Type
WATER TREATMENT PLANT

Eighty-eight concrete columns rise 80 feet from the floor here, in this cavernous reservoir minutes south of San Francisco on Interstate 280. This is the most complicated, most involved—and most impressive—part of the $283 million remodel of the Harry Tracy Water Treatment Plant (HTWTP), near San Andreas Reservoir just over the hill from San Bruno.

The 11 million gallon reservoir is a cast-in-place double-walled construction concrete tank with spiral bound shotcrete exterior. It is engineered to withstand earthquakes along the nearby San Andreas Fault. It must also prevent water intrusion for the length of its life, a minimum of 50 years.

Conventional waterproofing methods would rely on protective liners, coatings, chemical controls and anti-microbial agents. Instead, Xypex products were chosen to waterproof and protect the concrete on the inside of this tank —approximately 100,000 sq. ft.

Redwood Painting, the coatings contractor for the project, installed Xypex Concentrate and Modified to the interior columns and walls. For the column application, they mixed the product on site, hoisted it to the applicators using scissor lifts and applied it with drywall hoppers at the prescribed thickness.

Crystalline waterproofing technology has all the advantages of liners and coatings along with a lifecycle benefit that is impossible with other options. The technology works within the concrete to improve waterproofing and durability by filling and plugging pores, capillaries and micro-cracks of the mix with a non-soluble, highly resistant crystalline formation.

The application of crystalline waterproofing was completed in September 2014. Construction of the reservoir is scheduled to be completed by February 2015.

When complete, the expansion of the Harry Tracy Water Treatment Plant will improve the plant's treatment capacity from 10 - 20 million gallons per day to as much as 140 million gallons of water per day—enough water to supply San Francisco Public Utilities Commission (SFPUC) customers double the amount of water typically needed.