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City Opens Doors to Water Purification Demonstration Project

The City of San Diego, California, opened the doors this summer to its new Advanced Water Purification Facility. The small-scale wastewater treatment plant will produce recycled water for reuse as a potential drinking water supply. During the year-long test phase, recycled water will be sent to the city's recycled water system. The facility will use a multi-barrier purification process, which includes membrane filtration, reverse osmosis, and advanced oxidation with ultraviolet disinfection and high-strength hydrogen peroxide.

By Marsi A. Steirer

The City of San Diego opened the doors this summer to a facility that is testing whether it could provide a new local source of water for San Diego. Located in northern San Diego, the Advanced Water Purification Facility is a small-scale, state-of-the-art water purification facility that purifies one million gallons of recycled water every day to a level similar to distilled water quality.

The facility is one component of the City's Water Purification Demonstration Project that is examining the safety and cost of purifying recycled water. If this project is approved to go full-scale, the purified water would blend with the city's imported supplies at San Vicente Reservoir and would become part of the city's drinking water supply. As another component of the Demonstration Project, the city is studying San Vicente Reservoir and the potential effects of adding purified water to it.

During the year-long test phase, recycled water will not be sent to San Vicente Reservoir or the city's drinking water system; instead, the purified water will be added to the city's recycled water system.

San Diego is testing water purification as a means to develop a locally controlled, supplemental water supply. San Diego's semi-arid region is at the end of pipelines that import water from hundreds of miles away. The city needs to develop local, reliable water sources to lessen its dependence on expensive and limited imported water supplies.



San Diego's Water Purification Demonstration Project will test the performance of a multi-barrier treatment system that includes membrane filtration, reverse osmosis and advanced oxidation combining UV and hydrogen peroxide.

"Our City has been both creative and aggressive in trying to diversify our water supply. The less we rely on importing water from outside San Diego County, the more we control our own destiny," said San Diego Mayor Jerry Sanders. "A locally produced supply of water could be an important option for us."

All wastewater in San Diego undergoes treatment to remove harmful contaminants, making it safe enough to be discharged into the ocean. Some wastewater is diverted to the city's recycled water facilities, where it is further treated and then used for irrigation and industrial purposes. A portion of the recycled water produced at the North City Water Reclamation Plant will be sent to the Advanced Water Purification Facility.

At the facility, the recycled water will go through a multi-barrier purification process, which includes membrane filtration, reverse osmosis, and advanced oxidation with ultraviolet disinfection and high-strength hydrogen peroxide. The multi-barrier approach of consecutive treatment steps work together to remove or destroy all unwanted materials in the water and produces one of the most pristine supplies of water available anywhere.

Each step in the process also includes continuous water quality monitoring. The city thoroughly examines the safety of the water through laboratory tests and computer analysis to ensure that it meets public health standards.

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Results from the Demonstration Project will determine the safety and cost of a full-scale water purification and reservoir augmentation project. After the test phase is complete, the City Council and Mayor will decide whether to implement a full-scale project.

"This Demonstration Project will provide the answers San Diego needs before taking the next step with purified water," said Mayor Sanders. "We owe it to our citizens to see if we can come up with an alternative source of local, safe and relatively inexpensive drinking water."

Visitors are being welcomed to tour the Advanced Water Purification Facility through summer 2012. Guests who participate in the AWP Facility tour will gain a better understanding of the Demonstration Project and what role the facility plays in this testing phase. Following an introductory presentation, tour participants will take a walking tour through the facility to view the water purification technology equipment up close. At the end of the tour, guests will view the purified water produced at the facility.

To register for a tour, visit www.purewatersd.org/tours.shtml. For more information about the City of San Diego's Water Purification Demonstration Project, visit www.purewatersd.org, email purewatersd@sandiego.gov, or call (619)533-7572.

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About the Author: Marsi A. Steirer is the Water Purification Demonstration Project Director for the City of San Diego Public Utilities Department.

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