



## NEWS RELEASE

### FOR IMMEDIATE RELEASE

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### ORANGE COUNTY WATER DISTRICT RECEIVES FEDERAL FUNDING FOR WATER REUSE RESEARCH ON CONCENTRATE TREATMENT AND NDMA

**FOUNTAIN VALLEY, Calif. (September 27, 2017)** -The United States Bureau of Reclamation (USBR) Desalination and Water Purification (DWPR) program awarded two research grants to the Orange County Water District (OCWD; the District) totaling \$400K. The research will provide critical data to support advancements in water reuse and treatment. The first grant will enable OCWD to conduct pilot-scale testing on closed circuit desalination (CCD) and forward osmosis (FO) as alternate technologies that can be used to recover water from reverse osmosis (RO) concentrate. The second research grant will fund a water quality study to determine the occurrence of *N*-nitrosodimethylamine (NDMA) and NDMA precursors at OCWD's advanced wastewater reclamation facility including diurnal trends and efficacy of RO and ultraviolet-advanced oxidation (UV-AOP).

Since 2008, OCWD has operated the world's largest advanced wastewater reclamation project for indirect potable reuse (IPR) to increase local water supplies and protect the groundwater basin it manages from seawater intrusion. District scientists and outside collaborators use this real-world facility to conduct meaningful applied research, drawing on current and historical data from the project. Named the Groundwater Replenishment System (GWRS), the project puts highly treated wastewater through a three-step purification process consisting of microfiltration, RO and UV-AOP to produce near-distilled quality water that meets or exceeds state and federal drinking water standards.

"As a leader in water reuse it's our duty to continue to research the IPR treatment process and its water quality to spearhead advancements for our project and for other regions that depend on this type of project for their water supply," said OCWD President Denis Bilodeau. "The pilot-scale testing may help maximize even more water, and that's our job. Increased water supply and water quality help economies like Orange County thrive and we're proud to partner with key stakeholders to conduct this important research."

OCWD and grant project partners will add a combined total value of over \$1.3 million to the two research projects. The pilot-scale testing will be done in collaboration with Desalitech (CCD pilot), Porifera (FO pilot), and Carollo Engineers over an approximately year-long study. Each pilot will treat RO concentrate from the GWRS to produce high-quality membrane-treated water. The District currently discharges 18 million gallons per day (MGD) of RO concentrate from the GWRS to an ocean outfall for disposal; with additional treatment such as via CCD or FO, RO concentrate represents a significant new source of water. The team looks forward to

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testing these promising technologies that have potential to increase overall water recovery of the RO process from the current 85 percent up to 95 percent or greater.

“Desalitech is committed to providing reliable and efficient wastewater reuse solutions to industries and municipalities across the globe. We’re honored to be partnered with OCWD at the most prestigious and largest advanced water purification facility in the world,” said Terry Mah, Executive Business Development with Desalitech.

“As a FO industry leader, we at Porifera look forward to working with OCWD and demonstrating how our technology can be a key part of enhanced water recovery.” said Porifera CEO Olgica Bakajin. “We are especially excited to demonstrate Porifera's dprShield technology for potable reuse. This new technology enables fail-safe operation of membranes, assuring that the product water does not get contaminated even if membranes fail.”

The NDMA water quality study will be conducted in collaboration with the University of Nevada, Reno; San Diego State University and the University of Colorado Boulder over a year-and-a-half. NDMA is a disinfection byproduct that can be formed during or after water treatment from reactions of NDMA precursors. Understanding their sources and fate is critical to preventing NDMA formation. The project team will use advanced new methods known as “non-targeted” analyses via mass spectrometry to identify new NDMA precursors, and will determine strategies for reducing the amount of NDMA formed post-treatment, among other tasks.

The collaborative research studies are led by OCWD’s Director of Research and Development (R&D) Dr. Megan Plumlee. R&D Department scientists research new technologies and processes to improve water quality and increase the efficiency of OCWD’s recycled water treatment and recharge operations. To learn more about OCWD’s R&D efforts, please visit <https://www.ocwd.com/what-we-do/research-development/>.

### ***About OCWD***

The Orange County Water District is committed to enhancing Orange County’s groundwater quality and reliability in an environmentally friendly and economical manner. The following cities rely on the groundwater basin, managed by OCWD, to provide 75 percent of their water demands: Anaheim, Buena Park, Costa Mesa, Cypress, Fountain Valley, Fullerton, Garden Grove, Huntington Beach, Irvine, La Palma, Los Alamitos, Newport Beach, Orange, Placentia, Santa Ana, Seal Beach, Stanton, Tustin, Villa Park, Westminster and Yorba Linda. For more information about OCWD, please visit [www.ocwd.com](http://www.ocwd.com).

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