

# Innovations in Potable Water

**Environmental Moments**

**August 2021 Edition**

Drinking water, commonly known as potable water, is safe to consume or use for food preparation. While the Earth is largely covered with water, only a small percentage of it is fresh. There is an endless list of contaminants that can turn potable water into a health hazard or simply unpalatable. Developing methodologies to maintain or produce drinking water is important for providing this basic human necessity, and the following U.S. companies exemplify various ways this is accomplished.

## **Net-Zero Water Recycling**

East Bay Municipal Utility District (EBMUD) paved the way for net-zero energy water recycling by installing energy-efficient, low-emission gas turbines and producing biogas to generate renewable energy. (EBMUD) Biogas is emitted by microorganisms digesting collected sewage and other waste products. “In 2012, EBMUD became the first wastewater treatment plant in North America to produce more renewable energy onsite than is needed to run the facility.” (EBMUD) The excess energy is sold back to the electrical grid, which lowers fossil fuel use and greenhouse gas emissions. The water is then successfully recycled and used or released back into the Bay. Before EBMUD, raw sewage was dumped directly into the Bay, and since then their mission has been to protect public health and the environment with as little impact as possible.

## **Green Stormwater Infrastructure**

Philadelphia Watershed’s Green City, Clean Waters plan has reduced stormwater pollution through the use of green infrastructure and continues to provide improved water quality and beautification for its residents. Green infrastructure slows and captures rainfall before it enters the sewer system or waterways. This is vital because treatment plants can otherwise reach their maximum capacity during surging storms, releasing a mix of sewage and stormwater into rivers and creeks. (Water) The city’s initiative has kept more than 2.7 billion gallons of polluted water out of rivers, and Green City, Clean Waters still has decades of work planned for the future.

## **Groundwater Replenishment System**

Orange County Water District’s Groundwater Replenishment System (GWRS) is the world’s largest water purification system for indirect potable reuse. (OCWD) It is responsible for providing 77% of the potable water for 2.5 million people in the semi-arid region of Orange County, California. “The system takes highly treated wastewater that would have previously been discharged into the Pacific Ocean and purifies it using a three-step advanced treatment process consisting of microfiltration, reverse osmosis and ultraviolet light with hydrogen peroxide.” The result is high-quality, drinkable water.

*Produced by the Utility Arborist Association Environmental Stewardship Committee and Davey Resource Group:*



### **Works Cited**

“GWRS - New Water You Can Count On.” OCWD, [www.ocwd.com/gwrs/](http://www.ocwd.com/gwrs/).

Philadelphia Water Department, [water.phila.gov/](http://water.phila.gov/).

“Recycling Water and Energy.” East Bay Municipal Utility District :: Recycling Water and Energy, [www.ebmud.com/wastewater/recycling-water-and-energy/](http://www.ebmud.com/wastewater/recycling-water-and-energy/).