DEMON®

Anammox Treatment Technology

World water works

Clean Water and Energy from Wastewater

DEMON

deammonification process

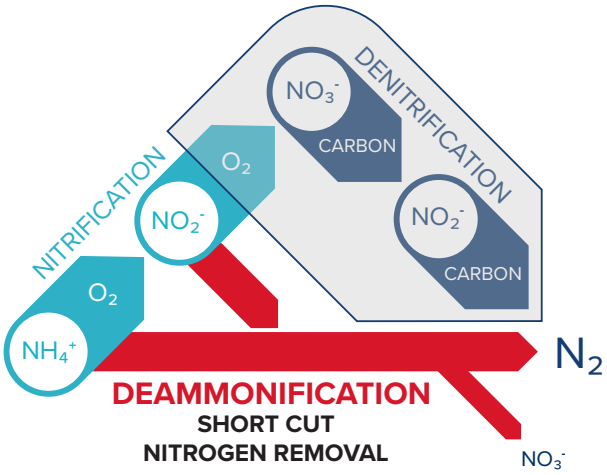
DEMON®

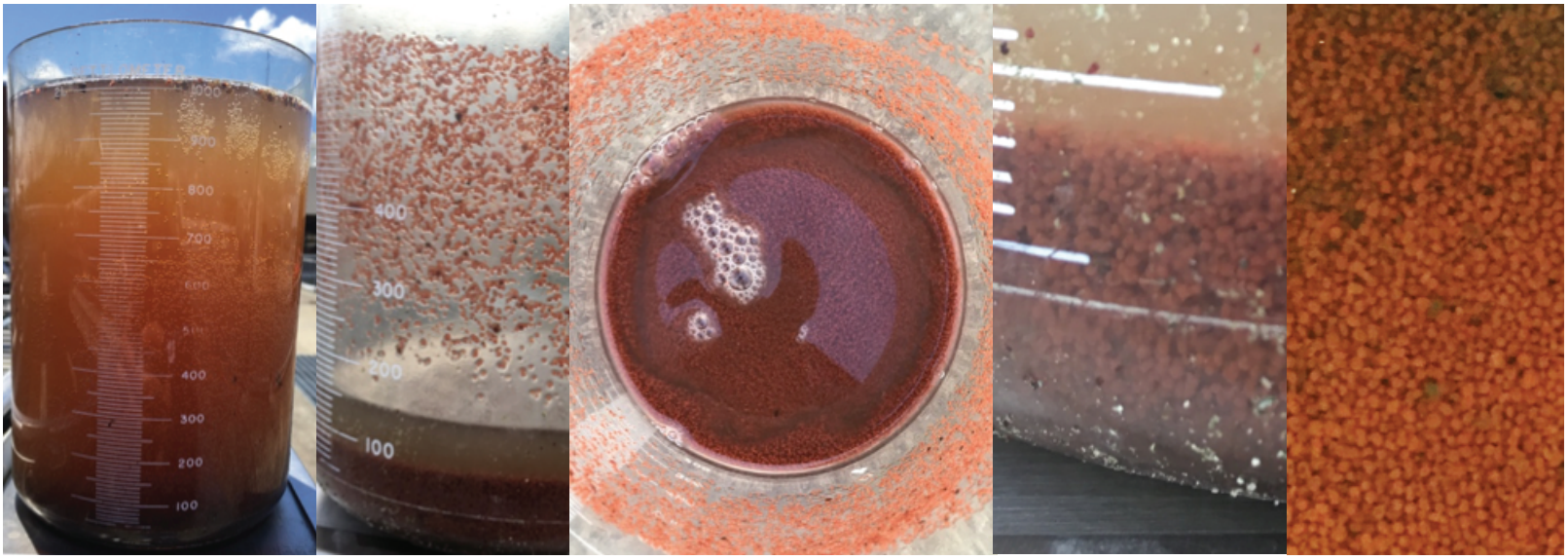
DEMON® Anammox treatment provides for cost effective total nitrogen removal via deammonification. Operating in either continuous or SBR modes, the system utilizes granular anaerobic ammonium oxidizing bacteria (anammox) for reduction of high strength ammonia using a fraction of the energy required by conventional means and zero carbon source. Waste streams generated from dewatered anaerobically digested municipal sludge or waste to energy facilities and-leachate from landfills are perfect applications for the World Water Works' DEMON technology and solves the problem of returning high concentrations of ammonia to the plant influent.

The true key to the success of the technology is the patented advanced biological process controls and the physical separation used to facilitate the growth and retention of the anammox bacteria.

Benefits

- Lowest cost Total Nitrogen removal process
- > 60% Less energy consumption
- 90% Less sludge production
- CO2 Fixation = Zero carbon footprint
- Simple and flexible operation
- Quick startup with available seed sludge
- Retrofit of existing tanks
- No supplemental alkalinity / carbon required

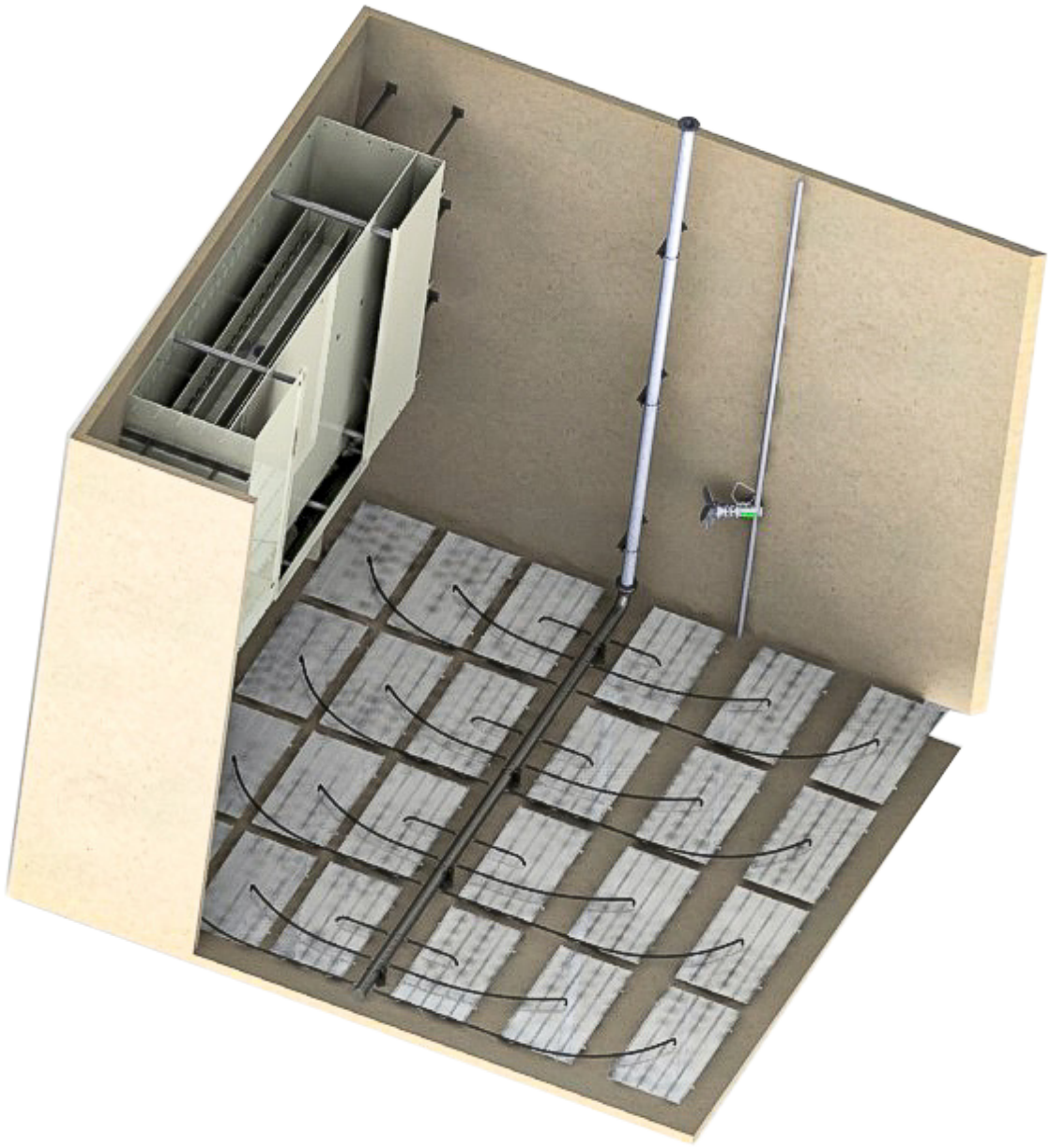




Unlike the traditional nitrification-denitrification method for removing nitrogen, which requires large amounts of energy (1.8-2.7 KW-hr/lb. nitrogen removed), alkalinity and external carbon addition, the DEMON process uses ammonia oxidizing bacteria (AOB) and annamox to efficiently and reliably remove ammonia from wastewater. The system operates under intermittent aeration with typical operational dissolved oxygen levels range from 0.3-0.5 mg/L. The system is completely automated which provides great system resilience and minimizes operator oversight.

Partial nitritation/deammonification represents a shortcut of the traditional process of nitrogen removal. The two-step process includes the partial nitritation of ammonia and the subsequent anaerobic oxidation of the residual ammonia and nitrite to nitrogen gas by annamox bacteria. This process is a greenhouse gas sequestrian and a truly sustainable improvement over traditional ammonia removal processes.

Deammonification represents the most cost effective upgrade a facility can take when looking at reducing the recycled nitrogen loads from their anaerobic digestors.



World Water Works, Inc. is a highly focused company in the wastewater treatment sector. We are driven to provide industrial and municipal customers proven and cost-effective wastewater treatment solutions delivering superior effluent quality.

We are a passionate and adaptable company providing value through expertly engineered products and technologies. Founded in 1998, we have unparalleled depth of application knowledge and experience.

We have offices located throughout the US, India, and UAE with a fully integrated in-house manufacturing facility at our headquarters in Oklahoma City, OK. This strategically positions us to control schedule while delivering the highest quality products and solutions at the lowest cost of ownership. Working hand-in hand with our customers, we optimize wastewater treatment solutions globally.

We at World Water Works are ensuring our wastewater treatment systems meet today's challenges while preparing for tomorrow's water needs.