



subre

## SUBMERGED MABR SOLUTION



Greenfield



Retrofit

SUBRE is a submerged MABR product for concrete-based wastewater treatment plants, delivering intensified biological treatment with low energy consumption and low OpEx.

### Retrofit Project

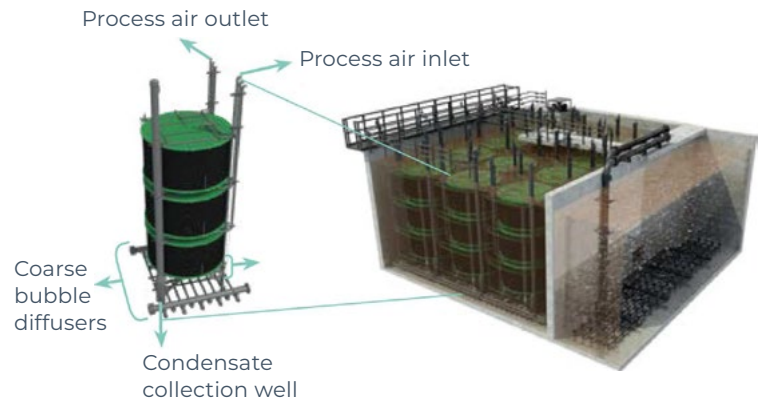
Upgrade the capacity or effluent quality of an existing wastewater treatment plant by intensifying the biological nutrient removal process with no added footprint.

- Retrofit of capacity ranging from 0.5-25 MGD (2,000-100,000 m<sup>3</sup>/day)
- Installation in an existing anoxic basin (if necessary, a separation baffle will be built)
- Utilizes existing aeration system
- Eliminates internal nitrates circulation
- Fast and easy installation with immediate results

### Greenfield Project

Build a greenfield wastewater treatment plant to achieve a stable and high quality effluent.

- Capacity ranging from 0.5-25 MGD (2,000-100,000 m<sup>3</sup>/day)
- Stable, high nutrient removal despite seasonal changes
- Energy savings
- Simple operation

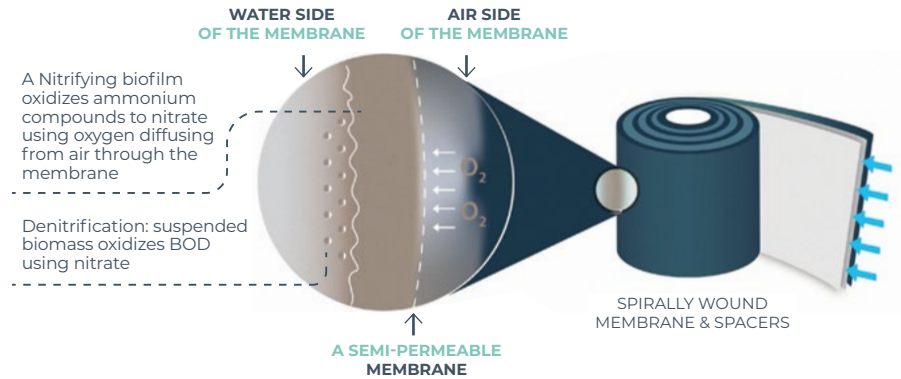


SUBRE towers fit well in tanks that are 9.5 ft (2.9 m), 12.8 ft (3.9 m), or 16 ft (4.9 m) deep.

## MABR Technology

Fluence's MABR is a patented, well-validated technology for treating municipal wastewater.

MABR is a spirally-wound self respiring membrane that supports the formation of an aerobic biofilm in an anoxic environment, resulting in simultaneous nitrification-denitrification.



### Features

- Ideal for CAS/ AxO plants
- Improves effluent quality
- Increases plant capacity
- Enhanced nitrogen removal
- Supports enhanced bio-phosphorous removal
- Robust attached growth biofilm treatment
- Backwash is not required

### Key Benefits

- Stable effluent quality complies with stringent regulations
- Up to 20% OpEx reduction
- Reduces chemicals required by up to 30%
- Reduces aeration energy by up to 30%
- Built-in resilience to flow and temperature fluctuation
- Zero footprint - no additional construction
- Simple to operate

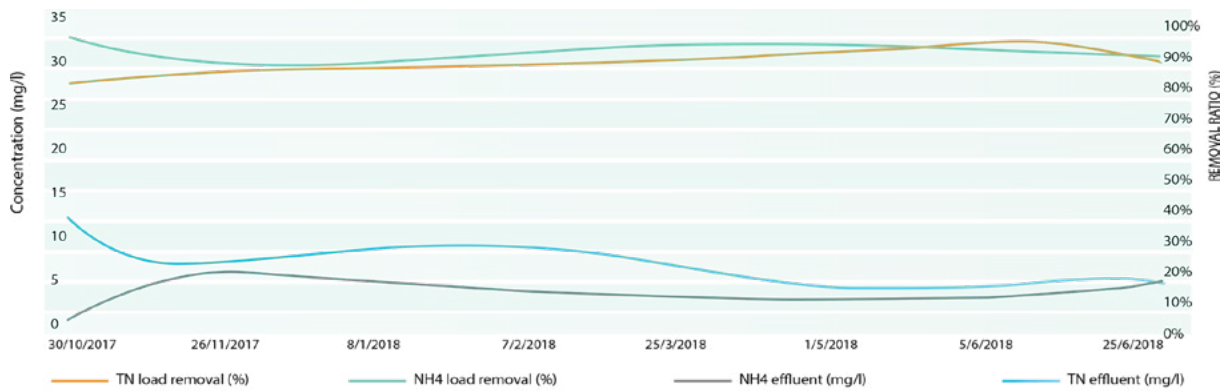


Fig 1- MABR NH<sub>4</sub> and TN removal rate and effluent values along 8 months of operation

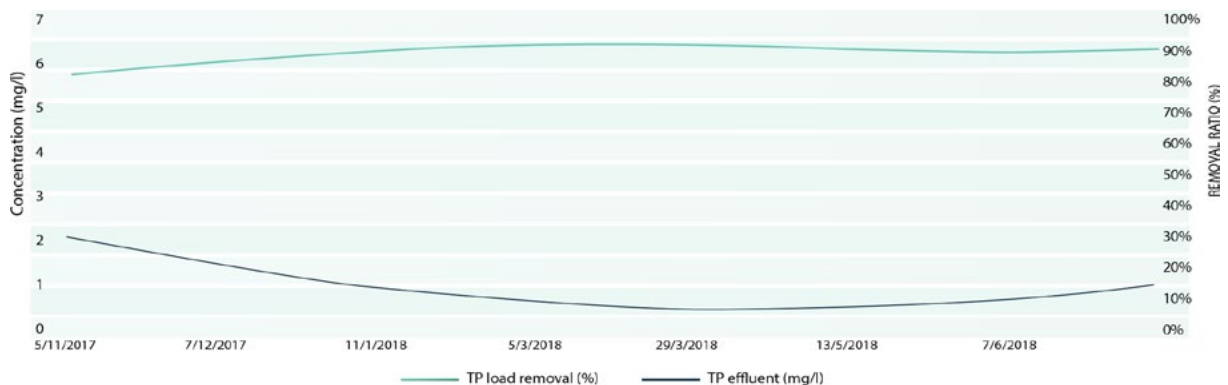


Fig 2- MABR phosphorous removal rate and effluent values along 8 months of operation