

# municipal plant meets discharge limits only days after start-up using SUEZ ZeeWeed\* membrane bioreactor (mbr) and SUEZ BioPlus\* bioaugmentation products

## challenge

An Italian seaside town with about 60,000 residents needed to revamp its obsolete and undersized municipal wastewater plant. The town is located on a renowned stretch of coastland, so it was very important for the municipality to select the right technological solutions in order to guarantee the highest performance, while having the least environmental impact.

The old wastewater plant was built underground in the seventies and it was impossible to expand it by installing new basins and new tanks.



## solution

By installing a new Membrane Bioreactor (MBR) SUEZ Water Technologies & Solutions was able to retrofit the client's existing wastewater plant to provide better quality effluents and allow for greater capacity.

During the start-up, SUEZ recommended and implemented its BioPlus\* bioaugmentation program aimed at rapidly re-growing a population of bacteria in the new customer's activated sludge bioreactor. The products selected were BioPlus BA2900 (for generic

Chemical Oxygen Demand COD removal) and BioPlus BA2912 (for Nitrogen compounds removal).

The products were added in stepwise fashion over a period of seven days. A SUEZ representative took samples from the MBR and monitored the progress of bacteria growth and contaminant reduction.

Samples from the MBR were frequently analyzed for COD, ammonia, nitrates and phosphates. pH was carefully monitored to ensure the suitable range for nitrification process.



## results

Results were monitored by measuring biomass growth, effluent COD and Ammonia degradation.

In just seven days, the MLSS increased from 1000 mg/l to over 9000 mg/l (normal levels for MBR technology). After this period, the new plant achieved its start-up goals and was able to produce acceptable effluent for direct discharge to the sea.

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Odors coming from the renovated wastewater plant were negligible compared to the older facility, which was helpful in promoting a more positive environmental image in the community.

## conclusions

BioPlus BA2900 and BA2912 accelerated bacterial growth rates and resulted in the fastest start-up that the customer had seen in recent years.

SUEZ's technologies (BioPlus products and ZeeWeed\* membranes) allowed the customer to safely and rapidly restart their wastewater plant, while meeting environmental EU regulations.