

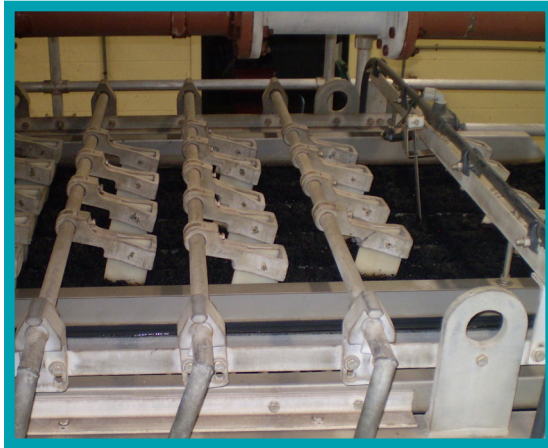
Case Study: Colchester-East Hampton

NITROGEN REMOVAL AND ELECTRICAL SAVINGS COLCHESTER-EAST HAMPTON, CONNECTICUT (POPULATION 30,000)

Nitrogen Removal and Energy Savings

Equipment Cost: \$5,000

Annual Operating Savings: \$30,000/yr in lower electrical use



A series of process modifications were implemented over the course of a two year nitrogen optimization effort.

In an effort to improve denitrification, programming changes were made to the plant SCADA system and the aeration tanks were, for a period of months, cycled between aerobic and anoxic conditions in the 3.8 MGD MLE facility. The best nitrate-nitrogen removal was realized with the internal recycle pumps operating at minimum pump speed. Influent flow is diverted around the primary clarifiers directly into the pre-anoxic zones of the aeration tanks in order to provide the necessary BOD to support denitrification.

Effluent total-nitrogen now averages 8 mg/L.

The full scale piloting of various process control strategies resulted in the use of one aeration blower for both aeration tanks instead of operating two blowers to aerate the parallel aeration tanks. This change resulted in annual electrical savings of over \$30,000/year.

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"With the support of CleanWaterOps, we are realizing far better nitrogen removal than we thought possible and, saving money on our electricity bill doing it."



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