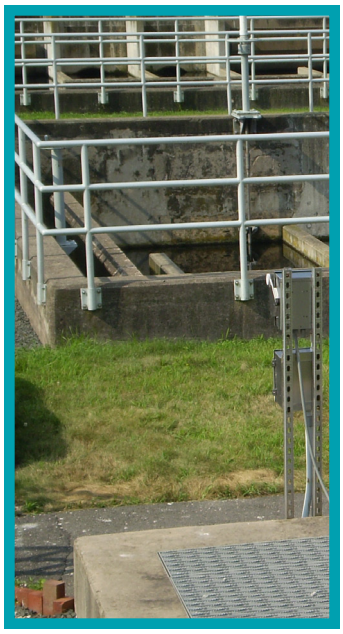
Case Study: Westfield

PHOSPHORUS REMOVAL
WESTFIELD, MASSACHUSETTS (POPULATION 42,000)

Compliance with a total-P limit of 1.0 mg/L at reduced chemical cost

Equipment Cost: $30,000

Annual Chemical and Sludge Disposal Savings of $350,000/yr are being realized



To meet a new year-around total-phosphorus limit at the 6.1 MGD Westfield wastewater treatment facility, the first third of the plug flow aeration tanks are operated as fermentation tanks. To keep the tanks mixed, modifications have been made to the fine bubble aeration disks. The membrane covers have been removed on over 95% of the disks and the air ports plugged with stainless steel screws. The remaining disks have been cut so that large bubbles of air escape and mix the tank contents.

To provide volatile fatty acids (VFAs) for biological phosphorus removal, sludge is recycled from the sludge holding tank to the midpoint of the anoxic/anaerobic zone created in the aeration tanks. An in-line final effluent ortho-phosphate instrument connected to SCADA tracks soluble phosphorus and controls the speed of the sodium aluminate chemical feed pump. The plant's computer is programmed to add an additional 15% more chemical from 11:00 AM to 5:00 PM on weekdays to treat the increased concentration of phosphorus which normally flows though the effluent channel at those times.

Jeff Gamelli, Assistant Superintendent • 413.572.6268 • j.gamelli@cityofwestfield.org

"CleanWaterOps provides a unique means of providing operator support. Their expertise is much appreciated."

CLEAN WATER OPS.COM™

358 Chestnut Hill Ave, #204B
Boston, MA 02135
Office: 617.505.5095
www.CleanWaterOps.com