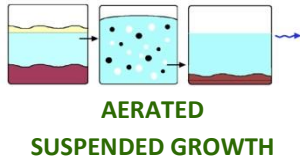


Firm: Norweco
www.norweco.com

System: **Singulair Bio-kinetic TNT**

Category:



Process: Wastewater first enters a pretreatment chamber to provide primary treatment. Flow is transferred into the aeration chamber where air supplies oxygen to bacteria and other microbes to support the reduction of BOD and TSS (total suspended solids) and the conversion of ammonia nitrogen to nitrate nitrogen. The Singulair aerator operates with an on/off cycle that facilitates denitrification. Aerated flow then transfers into the clarification chamber and any remaining solids will settle and be returned to the aeration chamber for further treatment. Prior to discharge from the tank, flow enters the Bio-Kinetic filter device where it is equalized and filtered before discharge to a dispersal system.



System: Incorporates primary, secondary, and tertiary treatment in a proprietary three chamber tank that is manufactured, installed, and serviced by a trained, licensed distributor. Replacement parts are available through the distributor. System does not replace the discharge components.

Flow Range: 500-1,500 GPD

Tests: NSF/ANSI 245 for denitrification; Suffolk County Pilot 1

Cost: Under \$8,000 delivered within 25 miles of Bay Shore, NY (includes 2' of risers for each hole, all equipment inside of tank and control panel). Cost doesn't include excavation, interconnect plumbing, piping, electrical service, and soil disposal system and restoration of lawn.

Energy: Moderate, powering a 1/6 HP, 1725 RPM, 115 volt aerator that runs up to one hour on/off. It uses 3.18 kWh/day with an estimated energy cost is \$17/month.

Tanks: Precast concrete or high density polyethylene (HDPE)

Norweco

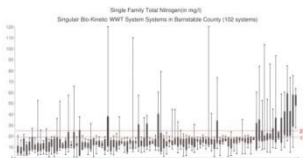
220 Republic Street
Norwalk
Ohio 44857-1156

Telephone:
419 668 4471

Local Supplier:

Roman Stone
Construction Co.
85 South 4th St.
Bay Shore
NY 11706

631 667 0566



Actual treatment levels.
Massachusetts

Venting: Vent on aerator mounting casting lid

Footprint: 55.5 SF

Depth: Tank is 6 ft deep, plus 2 ft. for the aerator housing. To maintain a 2-foot clearance to groundwater, allow 10 ft.

Life Cycle: Aerator: 7-10 years (Cost: \$500)

Warranty: 3 years, plus lifetime exchange program

Maintenance: Semi-annual; pump-outs as needed. First two years of service included in unit cost.

Notes: Extended aeration process is simplest to operate and maintain with very little sludge as byproduct. Used frequently for seasonal use, but need to remove submerged pump and allow for recovery time at start-up. Integrated septic chamber will most likely need to be pumped more frequently than a typical septic system due to the capacity of the primary treatment chamber (18 hr. vs. 48 hr. retention), but the overall size of the unit can handle 1300 gallons.

Installations: 32 states, Canada, Mexico

Treatment:

	<i>TN</i> /aver 50%	<i>cBOD</i> 25 mg/L aver/mon	<i>TSS</i> 30 mg/L aver/mon	<i>pH</i> (6-9)
<i>Performance</i> mg/L	12-14	4	9	6.3-7.6
%	68%	98+%	96+%	

Advantages:

- Flow equalization provides resiliency for irregular flows
- During a power outage, the unit can function as a simple septic system.
- No need for a separate septic tank
- Relatively low energy usage for type

- Final filtration of effluent
- Disinfection option/wider reuse

Disadvantages:

- Recovery from shut down is slow