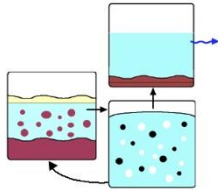


Firm: Hydro-Action Industries
www.hydro-action.com

System: **Hydro-Action AN Series**

Category:



ACTIVATED SLUDGE
EXTENDED AERATION
SUSPENDED GROWTH



Process: Raw wastewater entering the system passes first to a trash/pump tank holding 300 gallons of raw influent and mixed liquor. The process water is fully mixed by a centrifugal pump without adding any dissolved oxygen. This process water overflows to the aeration chamber on demand as a function of both incoming wastewater and mixed liquor returning from the aeration chamber.

The aeration chamber (632 gallons) houses two fine air-bubble diffusers to disburse continuous air flow from an air compressor. The air oxidizes organic matter, provides an aerobic environment for nitrification and enables complete mixing within the chamber. A pump located in the aeration chamber recirculates the nitrified liquor, in short pulses, back to the anoxic trash/pump tank. The recirculation rate and anoxic conditions provide the environmental conditions that promote denitrification through nitrogen gas formation.

From the aeration chamber, treated effluent rises through a conical clarifier (186 gal) for final settling of solids before exiting by hydraulic displacement to the dispersal system.

System: Two tanks, with the second housing the aeration chamber and conical clarifier. The controls can be located remotely or in a riser that houses pumps and also serves as a vent. The system does not replace the discharge components, but does eliminate the need for a separate septic tank.

Flow Range: 50-550 GPD

Tests: NSF/ANSI 245 for denitrification; Suffolk County Pilot 1 Maryland E.T.V. Test for Bay Restoration Fund

Cost: \$12,500 price installed on average

**AK/HA Manufacturing
Hydro-Action Industries**

1440 Stanley Drive
PO Box 640
Plymouth IN 46563

Telephone:
800 370 3749

Local Supplier:
Joseph Densieski
Wastewater Works, Inc.

631 831 2580



Credit: James Carbone

- Energy:** 132 kWh/month, estimated cost \$23/month
- Tanks:** Fiberglass reinforced plastic (FRP) or concrete, which can be designed for H2O loading /vehicular weights.
- Venting:** Vent on aerator manhole cover
- Footprint:** 55 SF
- Depth:** 7.5 feet. If one allows two feet clearance to groundwater, 9.5 feet is needed.
- Life Cycle:** Pumps: 5-7 years (Cost: \$500)
- Warranty:** Five years
- Maintenance:** Twice per year, with pump-outs estimated between every two and six years.

Notes: Due to the mixing, solids are not wasted, rather incorporated in the treatment train. Supplemental units can be added to existing systems or used with an integrated tank and/or TurtleDrip™ subsurface drip irrigation technology.

Installations: Approved for use in most states, Canada and Mexico

Treatment:

	TN /aver 50%	cBOD 25 mg/L aver/mon	TSS 30 mg/L aver/mon	DO	pH (6- 9)
Performance mg/L	15*	4	12	5.1	6.9- 7.9
%	58%	98.5%	95%		
*SC pilot performance: average of 11 mg/L aver/ 5 units.					

Advantages:

- During a power outage, the unit can function as a simple septic system.
- Trash/pump tank replaces septic tank
- Option for H2O reinforced concrete tanks for under parking/driveways

Disadvantages:

- Energy use is moderately high
- Slow or induced recovery needed after shut-down.