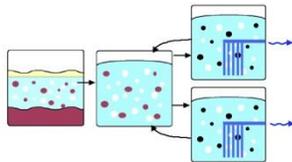


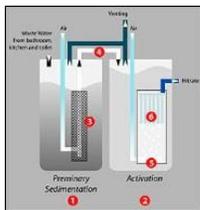
*Firm:* BUSSE Green Technologies Inc.  
www.busse-gt.com

*System:* BUSSE MF – B-400

*Category:*



**ACTIVATED SLUDGE  
MEMBRANE BIOREACTOR**



*Process:* Raw wastewater enters the first tank, which is intermittently aerated. It is then transferred through a mesh filter to an identical second tank. The same process is repeated, but airlifted to two membrane tanks. The flat membranes, submerged in activated sludge, sit above the aerators. The aerator pumps both fine and coarse bubbles, directing the wastewater flow over the membrane panels. A pump also returns sludge to the second tank for denitrification. Liquid head drives the effluent through the membrane, after which the permeate is discharged. Normal retention time is approx. 12 hours.

*System:* Three-stage, four tank process, using three air pumps and two airlift pumps, all above ground. The hydraulic capacity is 1056 gallons. A separate septic tank is not needed. System requires separate, but reduced disposal area.

*Flow Range:* 400-1500 GPD (larger BUSSE systems are also available)

*Tests:* NSF/ANSI 245 for denitrification; Fecal Coliform (WA, admin. by NSF); EU: EN12566-3; Suffolk County Pilot 1

*Cost:* \$24,000 for 500 GPD includes all installation costs except for the dispersal system

*Energy:* 3-5 kWh/day at an estimated cost of \$16-\$27/month

*Tanks:* Fiberglass or polyethylene

*Venting:* House vent or direct vent

*Footprint:* 40 SF (4' x 10')

*Depth:* 0 (above ground) allow six feet in height for installations. Good for shallow depths to groundwater.

**Local Representative:**

BUSSE NY  
2385 Montauk Hwy  
Bridgehampton, NY  
11932  
T 631 537 7675  
[info@BusseNY.com](mailto:info@BusseNY.com)  
[www.BusseNY.com](http://www.BusseNY.com)

**BUSSE Green Technologies Inc.**

Ingo Schaefer  
P.O. Box 1123  
Oak Park, Illinois 60304  
T: +1 708 204 3504  
[info@busse-gt.com](mailto:info@busse-gt.com)

*Life Cycle:* If a service contract is active, the membrane replacement (5-10 years) is included in the fee.  
Compressor (5-7 years \$300)

*Warranty:* 2 years, extended if a service contract is active.

*Maintenance:* Once a year. Minor sludge remove is usually every three to five years, but included in the service fee (\$500).

*Notes:* The membrane filters bacteria and viruses, as well as solids. Modular for easy expansion. An added denitrification chamber can lower output to 5 mg/L.

The system needs to be maintained at a temperature above 40 degrees, so locations in a basement, shed, or garage are preferred.

The system may be shut down seasonally or operated in hibernation mode for easy restart. A by-pass to an existing septic tank or cesspool allows continued use during power outages.

*Installations:* Approved for use in most NE states, Europe

*Treatment:*

	TN /aver 50%	cBOD 25 mg/L aver/mon	TSS 30 mg/L aver/mon	DO	e-coli /fecal	pH (6-9)
mg/L	4-16	<2	2	5.4	<1	5.5 – 7.4
%	60% - 90%	99%	96%		99+%	marble tile option

*Advantages:*

- Provides disinfection w/out UV,
- Good for non-potable reuse
- Handles uneven flow
- Can handle heavy organic loads
- No earth moving is needed
- Phosphorus removal option
- Good in flood zones/shallow depths to groundwater/small sites

*Disadvantages:*

- Energy cost is moderately high
- Needs a minimum temperature to work optimally (as do all systems), but above grade systems will need protective siting.