

**NORTH CAROLINA
DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
DIVISION OF ENVIRONMENTAL HEALTH
ON-SITE WASTEWATER SECTION**

INNOVATIVE WASTEWATER SYSTEM APPROVAL
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INNOVATIVE WASTEWATER SYSTEM NO: IWWS-2000-1

ISSUED TO: Norweco, Inc.
220 Republic Street
Norwalk, Ohio 44870
(419)668-4471; Fax: ((419)663-5440

FOR: Norweco Bio-Kinetic® System

APPROVAL DATE: February 11, 2000

In accordance with 15A NCAC 18A.1969, an application by Norweco, Inc., Norwalk, Ohio, for approval of their Bio-Kinetic® System has been reviewed and found to meet the standards of an innovative system when all of the following conditions are met:

A. GENERAL

This Innovative System Approval is applicable to subsurface wastewater systems utilizing the Norweco Bio-Kinetic® System within the gravity flow effluent discharge line downstream from a septic tank or other pretreatment system and upstream of the final ground absorption treatment and disposal system or of any advanced pretreatment system (such as a sand or peat filter), or prior to an effluent pump tank. The Norweco Bio-Kinetic® System is designed to partially equalize flow through upstream pretreatment components and to downstream treatment processes and to remove solids with multiple filtration and settling zones. All solids greater than 1/16-inch in size should be retained within the system. The system is designed for use in subsurface wastewater systems handling a design flow of up to 2000 gallons per day of domestic strength wastewater. It is also designed to be used for higher-strength wastewater applications such as with food service facilities, at reduced design flow rates, or by using multiple units installed in parallel.

Note: Use of this system does not preclude the need to utilize an approved effluent filter and access devise within any septic tank permitted (Construction Authorization issued) on and after January 1, 1999, pursuant to G.S. 130A-335(f1) and 130A-335.1, and Rules 15A NCAC 18A .1953, .1954 and .1955. However, use of this system could be considered in lieu of adding an internal filter to an existing system containing a septic tank initially constructed without a filter.

B. SYSTEM DESCRIPTION

The Norweco Bio-Kinetic® System consists of an assembly of filters and settling chambers placed within a 2-foot diameter, 6-foot tall polyethylene basin. Gasketed rings and riser extensions are available in 6-inch increments to accommodate installations requiring a deeper basin. The internal system components include three filtration zones, nine settling zones, 37 baffled weir plates spaced 1/16-inch apart, and six flow-control outlet ports. The basin (and risers, where needed) is fitted with an interlocking access cover and safety/service guard to prevent unauthorized access. The unit includes watertight inlet and outlet hubs (designed to receive 4-inch Schedule 40 PVC pipe), and molded compression clamps for securing the access covers and risers into position.

C. USE LIMITATIONS AND DESIGN CRITERIA

1. The Norweco Bio-Kinetic® System may be used in any subsurface wastewater system where it can be practically installed in the gravity discharge line between the initial pretreatment components (e.g. the septic tank) and downstream treatment components or an effluent pump station. Note that the inlet invert to the unit is approximately 36-inches below the top of the access cover, and the outlet invert is 1-inch below the inlet invert.
2. The Norweco Bio-Kinetic® System may be utilized in either new systems or as an upgrade for existing subsurface systems.
3. Use of the system for food service wastewater may be considered for approval by the local health department on a case-by-case basis, based upon specific recommendations proposed by the system designer and manufacturer.
4. The System shall not be installed within areas subject to traffic loads unless specially designed on a case-by-case basis by a licensed professional engineer, and in a manner recommended by the manufacturer.

D. INSTALLATION PROCEDURES

1. The Norweco Bio-Kinetic® System and appurtenances shall be assembled and installed in accordance with manufacturer's specifications. This includes placement on a 4-inch sand or fine gravel leveling pad and the use of sand or fine gravel as the backfill surrounding the unit extending up to finished grade.
2. The top of the access cover must extend at least 7 inches above finished grade. Bolts or padlocks shall be used to secure the compression clamps used to attach the access cover to the basin, and to attach riser extension sections. Gasketed rings are used with the compression clamps when securing riser extension sections (but not when attaching the lid).
3. The system shall be installed by a contractor authorized in writing by the manufacturer.

E. OPERATION AND MAINTENANCE

1. System classification, management and inspection shall be in accordance with Rule .1961. A management entity with a Certified Operator, who is authorized in writing by the manufacturer to service the Norweco Bio-Kinetic® System, shall be required to maintain the system. The system shall be classified at a minimum as a Type Va system according to Table V(a) of Rule .1961(b). Unless otherwise required by other system components, required inspection/maintenance frequency by the Certified Operator may be reduced to once per year, and required Local Health Department inspections may be reduced to once per three years. Inspection frequencies by the Certified Operator will need to be greater for systems handling other than domestic-strength wastewater.
2. Use of the Norweco Bio-Kinetic® System shall be clearly indicated on the Operation Permit. The systems shall be used and maintained in accordance with manufacturer's specifications and applicable laws and rules. Debris removed from the filter during servicing shall be directed into the septic tank, or otherwise handled in accordance with an alternate approved sanitary disposal method.

F. LITERATURE

The manufacturer shall furnish with each System:

- Literature to be provided to the system installer describing installation procedures.
- Literature to be provided by the installer to the system owner/user/operator describing System and recommended maintenance and servicing procedures.

G. MAINTAINING APPROVAL STATUS

The approval status is governed by Rule .1954(e).

Approved by: _____ Date: _____