

**NORTH CAROLINA DEPARTMENT OF HEALTH AND HUMAN SERVICES
DIVISION OF PUBLIC HEALTH
ENVIRONMENTAL HEALTH SECTION
ON-SITE WATER PROTECTION BRANCH**

INNOVATIVE WASTEWATER SYSTEM APPROVAL
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Innovative Wastewater System Approval Number: IWWS 2000-01-R1

Issued To: Norweco, Inc.
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Contact: Leslie Barber
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For: Norweco Bio-Kinetic® System

Approval Date: February 11, 2000
December 31, 2024 Updated for 18E and renewed for 2025

In accordance with G.S. 130A-343 and 15A NCAC 18E Section .1700, an application by Norweco, Inc., for a renewal of the innovative approval for their Bio-Kinetic® System has been reviewed and found to meet the requirements of an Innovative system when the following conditions are met.

I. General

This Innovative System Approval is applicable to on-site 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 dispersal field, any advanced pretreatment system, or a pump tank. The Norweco Bio-Kinetic® System is designed to partially equalize flow through upstream pretreatment components and to downstream treatment processes and 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 on-site wastewater systems handling a design daily flow less than or equal to 2,000 gallons per day for domestic strength effluent as defined in 15A NCAC 18E .0402(a), Table III. It is also designed to be used for high strength effluent, such as with food service facilities, at reduced design daily flow rates, or by using multiple units installed in parallel.

Use of this system does not preclude the need to utilize an approved effluent filter. However, use of this system could be considered in lieu of adding an effluent filter to an existing system utilizing a septic tank without an effluent filter.

II. System Description

The Norweco Bio-Kinetic® System consists of an assembly of filters and settling chambers placed within a two-foot diameter, six-foot tall polyethylene basin. Gasketed rings and riser extensions are available in six-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, are fitted with an interlocking access cover and safety guard to prevent unauthorized access. The unit includes watertight inlet and outlet hubs designed to receive four-inch Schedule 40 PVC pipe, and molded compression clamps for securing the access covers and risers into position.

III. Design Criteria

- A. The Norweco Bio-Kinetic® System may be used in any on-site wastewater system where it can be installed in the gravity discharge line between the septic tank and any downstream components, including a pump tank. The inlet invert to the unit is approximately 36 inches below the top of the access cover, and the outlet invert is one inch below the inlet invert.
- B. The Norweco Bio-Kinetic® System may be utilized in new systems or as an upgrade for an existing on-site wastewater system.
- C. 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.
- D. The system shall not be installed in areas subject to traffic loads unless specially designed on a case-by-case basis by a North Carolina Professional Engineer, and in a manner recommended by the manufacturer.

IV. Installation

- A. The Norweco Bio-Kinetic® System and appurtenances shall be assembled and installed in accordance with the manufacturer's specifications. This includes placement on a four-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.
- B. The top of the access cover must extend at least seven inches above finished grade. Bolts or padlocks shall be used to secure the compression clamps 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.
- C. The system shall be installed by an installer authorized in writing by the manufacturer.

V. Operation and Maintenance

- A. The Norweco Bio-Kinetic® System shall be classified, at a minimum, as a Type Va system in accordance with 15A NCAC 18E .1301(b), Table XXXII. The system shall be inspected once a year by the operator and the local health department shall inspect the system once every three

years, unless more frequent inspections are required by other system components. The inspection frequency by the operator will need to be more frequent than once a year for systems handling high strength effluent.

- B. The operator shall be authorized in writing by Norweco Systems, Inc.
- C. Use of the Norweco Bio-Kinetic® System shall be clearly indicated on the Operation Permit. The system 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 disposal method.

Approved by: _____ Date: _____