



State of Delaware  
Department of Natural Resources & Environmental Control  
Division of Water Resources  
Ground Water Discharges Section

**Innovative and Alternative System Approval**

**ISSUED TO:** E-Z Set Tank Company  
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**FROM:** Hilary Moore – Environmental Engineer  
Ground Water Discharges Section

**FOR:** E-Z Treat System

**APPROVAL DATE:** November 22, 2005  
**AMENDED DATE:** June 13, 2006

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In accordance with the Regulations Governing the Design, Installation, and Operation of On-Site Wastewater Treatment and Disposal Systems (Regulations), an application dated September 22, 2005 has been submitted by E-Z Set Tank Company, for approval of the E-Z Treat Treatment System as an Innovative & Alternative On-Site Wastewater Treatment Unit.

Based on the review of the application, the Department hereby grants approval of the use of the E-Z Treat System as an Innovative & Alternative On-Site Wastewater Treatment Unit. The following conditions, limitations, and requirements must be adhered to:

**1. Product Description**

The E-Z Set Treat System incorporates recirculation sand biofiltration technology in a pre-packaged system. The E-Z Treat System consists of a septic tank (sized

by E-Z Set Company in accordance with the Regulations), a pump/recirculation tank (sized by E-Z Set Company in accordance with the Regulations), and the E-Z Treat media pod(s). See Table 1 for minimum flows and sizes. The Treat System addresses media size and composition, drainage and ventilation, dosing cycles, depth to filter media, and filtering and distribution of effluent over the media.

The E-Z Treat media pod Model 65 may accommodate a maximum of 650 gallons per day of residential wastewater. The Model 120 may accommodate a maximum of 1,200 gallons per day.

Design Flow (gpd)	Minimum septic tank size (gallons)	Minimum Pump/Recirculation Tank Size(gallons)	Number of Media Pods
360 gpd or less	1,200	1,200	E-Z 65 Pod
480 gpd	1,500	1,500	E-Z 65 Pod
600 gpd	1,800	1,800	E-Z 65 Pod
720 gpd	2,000	2,000	E-Z 65 Pod or E-Z 120 Pod

- All flows greater than 720 gpd must seek approval from the Department and designed in accordance with the manufacturer’s guidelines.

The first tank, the septic tank acts as a settling tank removing any solids greater than 1/16 inch. The second compartment will be fitted with an effluent filter provided by EZ-Set. The second tank will be a two compartment tank with the compartment wall located two thirds one third. The 2/3 compartment in the second tank will act as an additional anaerobic treatment tank as well as a denitrification chamber. The inlet tee in the 2/3 compartment of the second tank will extend to 18” from the bottom of the tank. The discharge from the self cleaning spin filter will also enter at the top of this tee, causing 10% of the effluent returning from the media filter to mix at the bottom level with the anaerobic effluent. The 1/3 compartment of the second vessel will contain the re-circulation cylinder and discharge pump.

The control panel for the system will be comprised of the following: re-circ pump load sensor/alarm, on/off timers, discharge pump alarm, high and low water alarm and internet monitoring system. The recirculation pump and the discharge pump will be controlled by separate timers. There will be four floats controlling high water discharge, low water discharge shut off and low water re-circulation shout off. Float settings will be based on gallons per day flow.

## 2. Claim

**Approval is based on information submitted by the Manufacturer indicating the specified model will routinely provide effluent quality not exceeding 20 mg/l of BOD<sub>5</sub>, and 20 mg/l of TSS.**

- **Preliminary third party testing has been conducted indicating that with the total nitrogen concentrations do not exceed 20 mg/l.**

### **3. Use and Design Criteria**

- a. The E-Z Treat System may be installed for new and replacement systems with conventional and innovative and alternative disposal systems.
- b. The E-Z Treat System shall be utilized for residential applications up to 720 gallons per day. Additional flows will require manufacturer's guidance and Department approval.
- c. An on-site wastewater treatment and disposal system permit application incorporating an E-Z Treat System shall be designed in accordance with the Regulations, and manufacturer's specifications. The design shall be completed by a DNREC Class C Design Engineer unless otherwise approved by the Department. The permit application shall include proper unit specifications.
- d. The designer must assure that the septic tank, pump chamber, and media pod all have above grade access. The design also must ensure that the control panel is accessible.
- e. All tanks shall meet the State Regulations and those established by E-Z Set Company.
- f. All components as specified with this approval shall be supplied by E-Z Set Company. Any equivalent products must be approved by E-Z Set Company and the Department.
- g. The E-Z Treat System shall not be installed within areas subject to traffic loads unless specially designed on a case by case basis in accordance with the Regulations and in accordance with manufacturer's specifications.
- h. The manufacturer is responsible for providing the Department a list of all local distributors and their associated contact information. This list must be kept current and shall be submitted to the Department on a yearly basis.

### **4. Installation Procedures**

- a. The E-Z Treat System shall be installed by a DNREC Class E System Contractor under the supervision of a manufacturer's representative, or by a DNREC Class E System Contractor who has been certified for unit installation. Proof of certification shall be provided in writing to the Department.
- b. Start up of the system and initial operational checks shall be conducted by the Class E System Contractor (trained by the manufacturer), Design Engineer, and a Ground Water Discharges Section (Large System Branch) representative. If

the Class E System Contractor is not certified, a manufacturer's representative shall perform the operational checks of the system at start up. If the manufacturer's representative can not be on site at the time of start up, they must provide final start up approval to the Department in writing.

## **5. Operation and Maintenance**

- a. The E-Z Treat System treatment unit shall be operated and maintained in accordance with the manufacturer's specifications. The permittee will be responsible for maintaining a service contract with the manufacturer or their certified service provider for the life of the system.
- b. The manufacturer shall comply with all Department mandated requirements as specified in permit conditions. This shall include operation and maintenance requirements.

## **6. Sampling and Approval**

The Department reserves the right to sample any unit at any time.

## **7. General Conditions**

- a. Use of the system for wastes other than residential shall be on a case by case basis.
- b. In the event that the product fails to perform as claimed by the applicant, the use of the units for new installations shall cease. Use of the units shall not resume until such time the applicant and the Department have reached an acceptable agreement for resolving the situations.
- c. Any changes that deviate from the specifications as submitted with this approval shall be approved by the Department prior to use.