



COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS
DEPARTMENT OF ENVIRONMENTAL PROTECTION
ONE WINTER STREET, BOSTON, MA 02108 617-292-5500

DEVAL L. PATRICK
Governor

TIMOTHY P. MURRAY
Lieutenant Governor

IAN A. BOWLES
Secretary

ARLEEN O'DONNELL
Commissioner

RENEWAL OF CERTIFICATION FOR GENERAL USE
Pursuant to Title 5, 310 CMR 15.000

Name and Address of Applicant:

Waterloo Biofilter Systems Inc.
143 Dennis Street, PO Box 400
Rockwood, Ontario NOB 2KO

Trade name of technology: Waterloo Biofilter (hereinafter the "System"). Schematic drawings of the System and a Technology checklist are attached and are part of this Certification.

Transmittal Number: W091132
Date of Issuance: March 26, 2007
Renewal Date: March 26, 2012

Authority for Issuance

Pursuant to Title 5 of the State Environmental Code, 310 CMR 15.000, the Department of Environmental Protection hereby issues this Certification to: Waterloo Biofilter Systems Inc., 143 Dennis Street, PO Box 400, Rockwood, Ontario NOB 2KO (hereinafter "the Company"), certifying the System described herein for General Use in the Commonwealth of Massachusetts. Sale and use of the System are conditioned on and subject to compliance by the Company and the System owner with the terms and conditions set forth below. Any noncompliance with the terms or conditions of this Certification constitutes a violation of 310 CMR 15.000.

Glenn Haas, Director
Division of Watershed Management
Department of Environmental Protection

March 26, 2007
Date

I. Purpose

1. The purpose of this Certification is to allow the use of the System in Massachusetts on a General Use basis.
2. With the necessary permits and approvals required by 310 CMR 15.000, this Certification authorizes the installation and use of the System in Massachusetts.
3. The System may be installed on all facilities where a system in compliance with 310 CMR 15.000 exists on site or could be built and for which a site evaluation in compliance with 310 CMR 15.000 has been approved by the local approving authority or by DEP if DEP approval is required by 310 CMR 15.000. This Certification for General Use does not allow the use of the System on facilities for nitrogen reduction in a Department designated nitrogen sensitive or limited area as defined in 310 CMR 15.214 and 15.215.
4. The System is approved for use at facilities with a maximum design flow less than 10,000 gallons per day (GPD).

II. Design Standards

1. The System is an absorbent trickling filter in which dissolved organic matter and suspended solids are degraded by microbial action in an aerated environment. The System shall be installed following a septic tank with a screened pump vault or a separate pump tank. The media in the trickling filter is comprised of 2 to 3-inch open cell foam cubes, or coarse shredded foam in mesh bags, that allows for microbial growth on the interior surfaces as well as the exterior surface of the foam. The mesh bags or cubes are piled randomly into a suitable enclosure or self-contained baskets that are placed in a suitable enclosure. The sides and tops of the baskets or mesh bags are exposed to air circulation through an open meshwork. The baskets can be placed in concrete tanks for below ground installation or in plastic-lined enclosure for above ground use. The cubes or mesh bags may be placed directly into suitable polyethylene or fiberglass containers for above ground or below ground use. The wastewater is applied to the foam filter media by means of spray heads discharging the wastewater from a pump in a pump tank located downstream of a septic tank, or in a screened pump vault located in the septic tank.
2. When utilizing a pump tank located downstream of a septic tank, the septic tank shall be designed in accordance with 310 CMR 15.223 and the discharge tee shall be equipped with an approved effluent tee filter. The pump tank shall have emergency storage capacity, above the working level, equal to the daily design flow of the System, be sized in accordance with 310 CMR 15.231(2) and be equipped with a timed dosing control system.
3. When utilizing a screened pump vault located in the septic tank, the septic tank should be a two compartment tank. The compartments shall be interconnected by a minimum 12 square inch opening located a minimum 24 inches above the floor of the tank. The liquid depth in the tank will vary during system operations. The septic tank shall have emergency storage capacity as per 310CRM 15:231(2) above the working level.

4. The System shall be provided with an air ventilation system. Effluent from the System can be either a single pass or have effluent re-circulation, typically fifty percent or more, back to the septic tank or pump tank. Disposal is by gravity or pump to the soil absorption system (SAS).
5. New Construction less than 2000 GPD: For residential Systems less than 2,000 GPD, the SAS size required by 310 CMR 15.242, *LTAR: Effluent Loading Rates* can be reduced by 50 percent provided that the facility is not located in an area described in Section I, item 3 and complies with the requirements of Section IV item 2.
 - a. Systems with a 50 percent reduced SAS shall include a pressure distribution system for effluent designed in accordance with Department guidance.
6. New Construction 2,000 GPD to less than 10,000 GPD and all non-residential facilities: No reduction in SAS field size is allowed under this approval.
7. Access shall be provided to all System tanks and to the septic tank in accordance with 310 CMR 15.228 (2). The septic tank shall have at least three manholes with readily removable impermeable covers of durable material provided at grade. Two manholes, over the inlet and outlet, shall have a minimum opening of 20 inches. All access ports and manhole covers shall be readily removable impermeable covers of durable material installed and maintained at grade to allow for maintenance of the System.
8. The System control panel including alarms shall be mounted in a location that is always accessible to the operator of the System.

III. General Conditions

1. The provisions of 310 CMR 15.000 are applicable to the use and operation of this System, the System Owner and the Company, except those that specifically have been varied by the terms of this Certification.
2. Any required operation and maintenance, monitoring and testing shall be performed in accordance with a Department approved plan. Any required sample analysis shall be conducted by an independent U.S. EPA or DEP approved testing laboratory or a Department approved independent university laboratory, unless otherwise approved by the Department in writing. It shall be a violation of this Certification to falsify any data collected pursuant to an approved testing plan, to omit any required data or to fail to submit any report required by such plan.
3. The facility served by the System, and the System itself, shall be open to inspection and sampling by the Department and the local approving authority at all reasonable times.
4. In accordance with applicable law, the Department and the local approving authority may require the owner of the System to cease operation of the System and/or to take any other action as it deems necessary to protect public health, safety, welfare or the environment.

5. In accordance with applicable law, the Department and the local approving authority may require the owner of the System to cease operation of the System and/or to take any other action as it deems necessary to protect public health, safety, welfare or the environment.
6. The Department has not determined that the performance of the System will provide a level of protection to public health and safety and the environment that is at least equivalent to that of a sewer. Accordingly, no System shall be upgraded or expanded, if it is feasible to connect the facility to a sanitary sewer, unless as allowed pursuant to 310 CMR 15.004.
7. Design, installation and use of the System shall be in strict conformance with the Company's DEP approved plans and specifications and 310 CMR 15.000, subject to this Certification.

IV. **Conditions Applicable to the System Owner**

1. The System is certified in connection with the discharge of sanitary wastewater only. Any non-sanitary wastewater generated and/or used at the facility served by the System shall not be introduced into the System and shall be lawfully disposed of.
2. New Construction less than 2000 GPD: For residential Systems with a design flow less than 2000 GPD, the System owner initially shall size the SAS in accordance with 310 CMR 15.242 to demonstrate that a conventional Title 5 SAS, including a reserve area, can be installed on the site. The System owner can then reduce the size of the SAS as calculated in 310 CMR 15.242 by 50 percent. No additional reduction in sizing based on innovative technology shall be taken. The total area required in the initial sizing, must include the area designated for the System and the SAS primary and reserve areas, shall be preserved. The System owner shall ensure that no permanent structures, excluding the System and 50 percent reduced SAS, or other structures are constructed on that area and that the area is not disturbed in any manner that will render it unusable for future installation of a conventional Title 5 SAS.
3. Operation and Maintenance agreement:
 - a. Throughout its life, the System shall be under an operation and maintenance (O&M) agreement. No O&M agreement shall be for less than one year.
 - b. No System shall be used until an O&M agreement is submitted to the local approving authority which:
 - i Provides for the contracting of a person or firm trained by the Company as provided in Section V (5) and competent in providing services consistent with the System's specifications, with the operation and maintenance requirements specified by the Company and the designer and with any specified by the Department;
 - ii Contains procedures for notification to the Department and the local approving authority within five days of knowledge of a System failure,

malfunction or alarm event and for corrective measures to be taken immediately; and

- iii Provides the name of an operator, which must be a Massachusetts certified operator as required by 257 CMR 2.00 of an appropriate grade that will operate and monitor the System.
 - iv For residential Systems installed with a 50 percent reduced SAS the operator must inspect, field test and maintain the System at least every six months in accordance with the Departments policy and anytime there is an alarm event. For residential Systems installed with a standard sized SAS the inspections and field testing shall be conducted at least once per year.
 - v For all other Systems 2,000 GPD or greater, and non-residential Systems, the operator must inspect, field test and maintain the System at least every three months and anytime there is an alarm event.
4. The System owner shall at all times have the System properly operated and maintained in accordance with this Certification, the designer's operation and maintenance requirements and the Company's approved procedures. The System owner shall notify the Department and the local approving authority, in writing, within seven days of a change in the operator.
 5. The System owner shall provide a copy of this Certification, prior to the signing of a purchase and sale agreement for the facility served by the System or any portion thereof, to the proposed new owner.
 6. The System owner shall furnish the Department any information that the Department requests regarding the System, within 21 days of the date of receipt of that request.
 7. By September 30th of each year, the System owner shall submit to the Department and the local approving authority an O&M checklist and a technology checklist, completed by the System operator for each inspection performed during the previous 12 months. Copies of the checklists are attached to this Certification.

V. Conditions Applicable to the Company

1. By January 31st of each year, the Company shall submit to the Department, a report, signed by a corporate officer, general partner, or Company owner that contains information on the System for the previous calendar year. The report shall state: the number of units of the System sold for use in Massachusetts during the previous year; the address of each installed System, the owner's name and address, the type of use (e.g. residential, commercial, school, institutional) and the design flow. For all systems installed since the first issuance of Certification for General Use, the report shall state all known failures, malfunctions, and corrective actions taken and the address of each such event.

2. The Company shall notify the Director of the Watershed Permitting Program at least 30 days in advance of the proposed transfer of ownership of the technology for which this Certification is issued. Said notification shall include the name and address of the proposed owner containing a specific date of transfer of ownership, responsibility, coverage and liability between them. All provisions of this Certification applicable to the Company shall be applicable to successors and assigns of the Company, unless the Department determines otherwise.
3. Company shall maintain and update as necessary the following: minimum installation requirements; an operating manual, including information on substances that should not be discharged to the System; a maintenance checklist; and a recommended schedule for maintenance of the System consistent with the Department's requirements essential to consistent successful performance of the installed Systems.
4. The Company shall make available, in printed and electronic format, the referenced procedures and protocol in item 3 above, to owners, operators, designers and installers of the System.
5. The Company shall maintain a program of designer and operator training and continuing education, as approved by the Department. The Company shall maintain and annually update, and make available the list of trained operators by January 31st.
6. The Company shall furnish the Department any information that the Department requests regarding the System, within 21 days of the date of receipt of that request.
7. The Company shall include copies of this Certification and the procedures described in Section V (3) with each System that is sold. In any contract executed by the Company for distribution or resale of the System, the Company shall require the distributor or reseller to provide each purchaser of the System with copies of this Certification and the procedures described in Sections V (3).
8. The Company or its designee shall conduct an intended use review of the System prior to the sale of any nonresidential unit or any System over 2000 GPD to ensure that the proposed use of the System is consistent with the unit's capabilities.
9. The Company shall comply with 310 CMR 15.000 and all the Department policies and guidance that apply and as they may be amended from time to time.
10. If the Company wishes to continue this Certification after its expiration date, the Company shall apply for and obtain a renewal of this Certification. The Company shall submit a renewal application at least 180 days before the expiration date of this Certification, unless written permission for a later date has been granted in writing by the Department. This Certification shall continue in force until the Department has acted on the renewal application.

VI. Reporting

1. All notices and documents required to be submitted to the Department by this Certification shall be submitted to:

Director
Wastewater Permitting Program
Department of Environmental Protection
One Winter Street - 5th floor
Boston, Massachusetts 02108

VII. Rights of the Department

1. The Department may suspend, modify or revoke this Certification for cause, including, but not limited to, noncompliance with the terms of this Certification, non-payment of any annual compliance assurance fee, for obtaining the Certification by misrepresentation or failure to disclose fully all relevant facts or any change in or discovery of conditions that would constitute grounds for discontinuance of the Certification, or as necessary for the protection of public health, safety, welfare, or the environment, and as authorized by applicable law. The Department reserves its rights to take any enforcement action authorized by law with respect to this Certification and/or the System against the owner, or operator of the System, and/or the Company.

VIII. Expiration Date

1. Notwithstanding the expiration date of this Certification, any System sold and installed prior to the expiration date of this Certification, and approved, installed and maintained in compliance with this Certification (as it may be modified) and 310 CMR 15.000, may remain in use unless the Department, the local approval authority, or a court requires the System to be modified or removed, or requires discharges to the System to cease.