Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection
One Winter Street Boston, MA 02108 • 617-292-5500



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

Name and Address of Applicant:

Waterloo Biofilter Systems, Inc.
143 Dennis Street, P.O. Box 400
Rockwood, ON N0B 2KO, Canada

Trade name of technology: Waterloo Biofilter (hereinafter the "System"). Schematic drawings of a typical System, a design and installation manual, Owner's Manual, O&M manual, and the technology inspection checklist are part of this Approval.

Transmittal Number: X252561
Date of Issuance: November 01, 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 Renewal of approval for General Use to: Waterloo Biofilter Systems, Inc., 143 Dennis Street, Rockwood, Canada (hereinafter "the Company"), approving the System described herein for use in the Commonwealth of Massachusetts. Sale and use of the System are conditioned on compliance by the Company, the Designer, the Installer, the Service Contractor, and the System Owner with the terms and conditions set forth below. Any noncompliance with the terms or conditions of this Approval constitutes a violation of 310 CMR 15.000.

David Ferris, Director
Wastewater Management Program
Bureau of Resource Protection

November 01, 2012
Date

## Description of the Technology

The System is a Secondary Treatment Unit (STU). 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 is 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 course 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 a concrete tank for burial or in a 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 buried 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. 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.

## Conditions of Approval

The term "System" refers to the STU in combination with the other components of an on-site treatment and disposal system that may be required to serve a facility in accordance with 310 CMR 15.000.

The term "Approval" refers to the technology-specific Special Conditions, the conditions applicable to all STU's with the General Conditions of 310 CMR 15.287, and any Attachments.

## Special Conditions

1. The System is Secondary Treatment Unit Approved for General Use. In addition to the Special Conditions contained in this Approval, the System shall comply with all the "Conditions for Secondary Treatment Units Approved for General Use", except where stated otherwise in these Special Conditions,

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.

3. When utilizing a screened pump vault located in the septic tank, the septic tank shall 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. Except for the design of the interconnection, two-compartment tanks shall meet the design requirements of Title 5 for multiple compartment tanks.

4. The pumping system to the biofilter chamber shall be equipped with a timed dosing control system with sensors and alarms to protect against high water in the septic tank or pump tank due to failure of the pump or pump controls. The pumping system shall have an emergency storage capacity above the working level equal to the daily design flow of the system. The volume below the working level of the pump(s) shall include an allowance for the volume of all drainage which may flow back to the chamber when pumping has ceased.

5. The System's biofilter chamber shall be provided with an air ventilation system.

6. Access shall be provided to all System tanks and to the septic tank in accordance with 310 CMR 15.228 (2). 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. Manholes brought to final grade shall be secured to prevent unauthorized access.