Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

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GENERAL USE CERTIFICATION
Pursuant to Title 5, 310 CMR 15.000

Name and Address of Applicant:

F.R. Mahony & Associates, Inc.
273 Weymouth Street
Rockland, MA 02370

Trade name of technology: Amphidrome and Integral Amphidrome (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: W106451
Date of Issuance: revised February 19, 2013

Authority for Issuance

Pursuant to Title 5 of the State Environmental Code, 310 CMR 15.000, the Department of Environmental Protection hereby issues this General Use Certification to: F.R. Mahony & Associates, Inc., 273 Weymouth Street, Rockland, MA 02370 (hereinafter "the Company"), certifying the System described herein for use in the Commonwealth of Massachusetts. The sale, design, installation, 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 Certification constitutes a violation of 310 CMR 15.000.

David Ferris, Director
Wastewater Management Program
Bureau of Resource Protection

February 19, 2013
Date

Description of the Technology

The System is a Secondary Treatment Unit (STU) that utilizes a Submerged Attached-Growth Sequencing Bioreactor (SAGSB). The System may consist of an anoxic/equalization tank, which must comply with the design criteria set forth below, and either a single reactor which alternates between aerobic and anaerobic conditions, and a clear well or a single reactor installed in a clear well. Wastewater passes from the anoxic/equalization tank, through a granular biological filter and into the clear well. A pump is then used to reverse the flow back to the anoxic/equalization tank. This cycle is repeated multiple times and the effluent is discharged to the soil absorption system. Schematics of the Systems are part of the Approval.

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 Remedial Use Approval, the General Conditions of 310 CMR 15.287, and any Attachments.

For Secondary Treatment Units that have been issued General Use Certification for the installation of a System to serve a facility where the site meets the requirements for new construction and the design flow is less than 2,000 gpd, the Department authorizes reductions in the effective leaching area (310 CMR 15.242), subject to the Standard Conditions that apply to all Secondary Treatment Units with General Use Certification and subject to the Special Conditions below applicable to this Technology.

Special Conditions

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

2. The System is approved for facilities where the design flow is less than 10,000 gpd and where a conventional system with a reserve area exists or can be built on-site in full compliance with the new construction requirements of 310 CMR 15.000 and has been approved by the local approving authority.

3. The anoxic/equalization tank shall be designed in accordance with Company requirements and have a total working volume equal to one day's design flow plus the volume of one backwash.

4. The residual volume (i.e. volume below the effluent invert) shall equal one day's design flow.

5. The height of the invert of the effluent pipe shall be at least 4 ft. from the bottom of anoxic tank.

6. The bottom of the effluent tee in the anoxic tank shall not be more than 1 ft. below the effluent invert.

7. The volume between the influent invert and the effluent invert (i.e. fluctuating volume) must be equal to the volume required for one backwash.

8. The influent invert shall be placed as close to the top of the tank as possible.

9. The influent and effluent tees shall be located under the access lids or manholes, and positioned at opposite ends of the tank.

10. The riser of the tee shall come up into the riser of the tank to ensure that it is above the high water level.

11. A minimum of a 1500 gallon anoxic/equalization tank is required.

12. The System shall be installed in series between the anoxic equalization tank and the soil absorption system of a standard Title 5 system constructed in accordance with 310 CMR 15.100 - 15.279, subject to the provisions of this Approval.

13. The System models covered by this Approval are exempt from the requirements for a standard Title 5 septic tank designed in accordance with 310 CMR 15.223(1) and 15.224.

    The record drawings, on file with the local approving authority, shall clearly indicate an area for a septic tank meeting the requirements of Title 5 and the drawings shall indicate that the area is for the sole purpose of installing a Title 5 septic tank in the future, if necessary. The System Owner shall not construct any permanent buildings or structures or disturb the site in any manner that would prevent the installation of a Title 5 septic tank in the future.