RHODE ISLAND
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
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Alternative/Experimental OWTS Technology Program

Vendor Information
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Technology Name and Model Number:
M400D, M550D, M750D, M1200D, M1500D, M2500D and M3000D

Technology Type:
Recirculating Biological Trickling Filter

Approval:
Nitrogen Reducing System - Class II

Certification Date:
Issued: September 17, 2010
Revised: November 5, 2010
Expires: September 17, 2015

CERTIFICATION

The RI Department of Environmental Management (RIDEM) has reviewed the Class II Alternative/Experimental Technology application for the SeptiTech Nitrogen Reduction System, an aerobic biological trickling filter, hereafter referred as the "System". The System is a two-tank design with a primary anoxic tank (a septic tank) followed by the aerobic trickling filter tank (the SeptiTech processor tank). Raw wastewater enters and passes through the primary anoxic tank to a reservoir beneath treatment media in the aerobic processor tank. The wastewater is aerated and sprayed onto the media. A programmable logic controller (PLC) controls the timing and sequence of the recirculation of wastewater in the lower collection reservoir. A portion of the wastewater is pumped back to the septic tank; this process is self-adjusting based on demand and is controlled by the PLC. Treated wastewater is time dosed to a leachfield.

Based on the information contained in the application submitted by SeptiTech, LLC hereafter referred to as the "Vendor", the RIDEM hereby accepts the System for listing in the RIDEM Alternative/Experimental Technology list as a nitrogen reducing system. Design, installation and operation of the System shall be in accordance with the following terms and conditions:

I. Design Requirements

A. General

1. The System is recognized for nitrogen reduction for all applicable uses and design flows. See Vendor's design manual for model-specific design flows. The following provisions apply for proposed use at schools and for other uses which generate high-strength wastewater, including restaurants.
   a.) The application shall be reviewed on a case-by-case basis by RIDEM for acceptability.
   b.) At a minimum RIDEM will require sampling and testing of the wastewater (or an estimate/projection of the wastewater characteristics for applications for new

construction), an assessment by the Vendor of the wastewater characteristics and a certification by the Vendor that the System as designed can meet the treatment objectives.

2. Septic tanks used with the System shall meet RIDEM requirements and be equipped with a RIDEM approved septic tank effluent filter/screen.

3. The processor tank shall provide a surge storage capacity of a minimum of 1/3 of the daily design flow.

4. a.) Designs incorporating this System and a conventional leachfield or alternative leachfield with a RIDEM Class I "component" approval shall be allowed a 50% reduction from the required leachfield size unless such a reduction is prohibited by the Class I alternative component technology's approval certification. This reduction is based on the ability of the System to remove BOD and Suspended Solids as demonstrated by the data submitted in the Vendor's submittal.

   b.) Each applicant proposing a reduced leachfield size shall demonstrate that sufficient land area is available on the lot to permit installation of a full size leachfield. The full size leachfield shall meet all applicable RIDEM OWTS setback requirements. This is not a requirement that an entire "replacement" field be available, only that enough additional land area be available to increase the "reduced" leachfield area to standard size if ever necessary.

5. In addition to other approved leachfield options allowed by RIDEM, effluent from the System may be discharged to a pressurized shallow-narrow drainfield (PSND) provided the latter is designed in accordance with any applicable provisions in the Vendor's design and installation Manual and complies with related guidance and/or Rules issued by the RIDEM.

6. No system where design flow exceeds 900 gpd shall utilize a bottomless sand filter (BSF) as the final means of disposal without technical studies to address the possible adverse effects as indicated in the BSF guidance document issued by the RIDEM.

7. Effluent from the System must meet Class I National Sanitation Foundation (NSF) Standard 40.

8. Design and installation shall be in strict conformance with the approved System design and installation manual. The design shall be prepared by a RIDEM licensed designer and the installation shall be performed by a RIDEM licensed installer each of whom has received training and is authorized in writing by the Vendor to perform the applicable work.

9. All Systems shall be equipped with an hour meter and a visible and audible pump/power failure-warning indicator, on a NEMA Type 4X cabinet exterior to the building. All systems shall be designed with a programmable logic controller.

10. All tanks, dosing and pumping chambers and riser assemblies must be certified or tested for water tightness using procedures set forth in RIDEM OWTS Rules.

11. Each system installation shall meet all other applicable OWTS Rules and receive prior approval by the RIDEM pursuant to the Rules in effect at the time of application.

12. Training
    a.) The Vendor shall hold, or cause to be held, two training seminars for RIDEM Licensed Designers and Installers and Service Providers before the expiration or renewal of this certification. The first shall be held within the first six (6) months of the date of this certification.

    b.) The Vendor shall notify the RIDEM of the date and time of each training seminar and submit to RIDEM a detailed agenda, material to be distributed to attendees and a list of presenters specifying their credentials at least six weeks in advance of the date of the scheduled seminar. Please consult the RIDEM–issued requirement for Vendors' technology training available on the RIDEM website in the A/E technology section.

B. Nitrogen Reducing Provisions

The System is recognized as nitrogen reducing. Total nitrogen concentration in the effluent as measured at the D-box or pump chamber prior to the leachfield shall not exceed 19 mg/L.

II. General Requirements

1. This Class II approval shall be effective for five years from the issuance date unless otherwise renewed, revised or extended by RIDEM.

2. If the Vendor wishes to extend this Class II approval beyond its expiration date, he/she shall apply for and obtain a renewal of this approval. The Vendor shall submit a renewal application in accordance with the RIDEM OWTS Rules.

3. The Vendor shall notify the RIDEM at least 30 days prior to any proposed transfer of ownership of the System technology. Notification shall include the name and address of the new owner and a written agreement between the existing and new owner specifying a date for transfer of ownership, responsibility, and liability for the technology. All provisions of this approval shall be applicable to any new owners.

4. The Vendor shall provide any purchaser of the System with a copy of this approval prior to the sale of the System.

III. Operation and Maintenance (O&M) Requirements

1. RIDEM approved O&M Manual shall be provided to the Owner/Operator.

2. Systems shall be maintained according to the manufacturer's specifications.

3. For seasonally used Systems, the Vendor shall provide specifications for protection of the System and the biological component from freezing, and conditions under which power to the System may be turned off.

4. The Vendor must offer for sale a minimum two-year service contract that must include, as an option, service to all A/E components of the treatment train in addition to the System.

5. The Applicant/Owner shall record copies of the OWTS construction permit issued by RIDEM and the initially executed O&M contract(s) for the System, and all other A/E components in the treatment train, in the land evidence records of the applicable city or town prior to the RIDEM issuing the Certificate of Conformance for each installation. Homeowners who are authorized by the appropriate Vendors to perform O&M on their own System are exempt from this requirement, only for the components for which they are Vendor-authorized to perform O&M.

6. a.) The owner shall retain a public or private maintenance entity (Service Provider) for the life of the system and all other A/E components of the treatment train, unless a Vendor-authorized homeowner is functioning as Service Provider for their own System and all other A/E components of their system.
   b.) No agreement with a maintenance entity shall be for less than two years.
   c.) Service Providers must be trained and authorized in writing by the appropriate Vendor to perform O&M on the System and all other A/E components of the treatment train for which they will be performing O&M.
   d.) The Service Provider shall have the capability of performing maintenance on the approved leachfield and shall offer to perform such maintenance if requested by the owner.
   e.) Properly trained homeowners may perform O&M on their own systems; training must have been received for all components of the treatment train on which a homeowner wishes to perform O&M
   f.) The Service provider or homeowner providing O&M on his or her own system shall:
      (1) Receive training as approved by the Vendor.
      (2) Be available to perform required preventative maintenance, perform repairs, respond to System emergency situations and conduct performance monitoring when required by this certification or by permit.
      (3) Perform an inspection of the treatment System at least quarterly for design flows of 2,000 gpd or more, and at least twice annually for smaller design flows.
      (4) Report to the Vendor, all inspections and maintenance calls conducted and all problems or failures observed with a summary of the cause and remedial measures taken.
      (5) Homeowners performing maintenance on their own systems must report to the RIDEM and to the Vendor all inspections and maintenance activities conducted and all problems or failures observed with a summary of the cause and remedial measures taken.

7. The Vendor shall provide to the RIDEM within six months of the issuance of this certification, a list of trained Service Providers. The names of at least two qualified Service Providers unaffiliated with suppliers of the System shall be maintained on the list at all times and this list must be provided to RIDEM as part of the annual reporting requirement. Properly trained homeowners authorized to perform O&M on their own systems shall be included on this list.

8. The Vendor shall make available to the public, a means of verifying the individuals, by name and category/activity (design, installation or O&M), who have received training and are authorized in writing by the Vendor to design, install and maintain the System.

9. The Vendor shall have an inventory of System parts available locally.

IV. Reporting Requirements

1. The Vendor shall submit an annual report to the RIDEM by the anniversary of this approval each year, containing the following information for the previous twelve-month period: The number of systems installed in RI, the address of each installation, the owner's name, RIDEM permit number, the number and dates of all inspections including maintenance calls conducted and all problems and failures experienced with a summary of each cause and remedial action taken.

2. The Vendor shall monitor the treatment efficiency of a minimum of three residential installations of the System in Rhode Island that are occupied year round. Grab samples shall be taken from the d-box or pump chamber prior to the leachfield. Each of the systems shall be monitored at least four times a year for a minimum of two years. Two samples shall be taken in the summer months and two in the winter months. If only seasonally used homes are available, they shall be monitored once at the beginning and once at the end of the season during which they are used. At a minimum the following parameters shall be monitored: BOD5, TSS, pH, TKN, nitrate, nitrite, ammonia, alkalinity and fecal coliform. This information shall be included in the annual report submitted to the RIDEM as directed by item 1 above. Sampling requirements may be extended or sampling frequency for the System may be reduced at the discretion of RIDEM after two years' data have been evaluated.

   If, at any time, the information gathered from the monitoring indicates that a System's performance is not in compliance with the terms of this certification, measures shall be taken to correct the System's treatment of the wastewater, and additional sampling and analysis shall be conducted. The System shall be re-sampled as necessary until the System is operating in compliance with this certification. The Vendor shall submit to the RIDEM an explanation of the measures taken to correct the System's performance and the laboratory analyses for each sampling event. This information shall be submitted as soon as it is available after each re-sampling event.

3. For any System with a design flow of 2,000 gpd or more, the Service Provider shall monitor the treatment efficiency of the System. Grab samples shall be taken from the d-box or pump chamber prior to the leachfield and water use since the last sampling event shall be recorded. The System shall be monitored at least four times a year for a period of two years. Two samples shall be taken in the summer months and two in the winter months. At a minimum, the following parameters shall be monitored: BOD5, TSS, pH, TKN, nitrate, nitrite, ammonia, alkalinity, and fecal coliform. This information shall be provided to RIDEM and to the Vendor. The Vendor shall include this information in the annual report submitted to RIDEM.

   If at any time, the information gathered from the monitoring indicates that a System's performance is not in compliance with the terms of this certification, measures shall be taken to correct the System's treatment of the wastewater and additional sampling and analysis shall be conducted. The System shall be re-sampled as necessary until the System is operating in compliance with this certification. The Service Provider shall submit to RIDEM and to the Vendor, an explanation of the measures taken to correct the System's performance and the laboratory analysis for each sampling event. This information shall be submitted as soon as it is available after each re-sampling event.

4. The Service Provider shall report any termination or non-renewal of maintenance agreements to the RIDEM and to the local Wastewater Management Authority if one exists in that area.

5. Electronic reporting and notification is encouraged.

V. Rights of the RIDEM

1. The RIDEM may suspend, modify or revoke this certification for cause, including but not limited to: non-compliance with any of the provisions or conditions of this certification, misrepresentation or failure to fully disclose all relevant data, or receipt of new information indicating the use of the System is contrary to the public interest, public health or the environment.

2. This certification does not represent an endorsement of the System by the RIDEM. This certification may be reproduced only in its entirety.

Issuance Date: 11/5/10

Russell J. Chateauneuf, P.E.
Chief of Groundwater and Wetlands Protection