



RHODE ISLAND
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
235 Promenade Street, Providence, Rhode Island 02908

Alternative/Experimental OWTS Technology Program

Vendor Information:

Bio-Microbics, Inc.
16002 W. 110th Street
Lenexa, KS 66219
Phone: 913-422-0707
Fax: 913-422-0808
www.biomicrobics.com

Contact:

James Bell & Sheryl Ervin
Phone: 913-422-0707
Fax: 913-422-0808
email: jbell@biomicrobics.com
email: servin@biomicrobics.com

Regional Contact:

Lauren Usilton
J&R Sales and Service, Inc.
Wastewater Treatment Services, Inc.
44 Commercial Street
Raynham, MA 02767
Phone: 508-823-9566
Email: laurenu@jrsalesinc.com

Technology Name & Model Numbers:

MicroFAST® 0.5 (500 GPD)
MicroFAST® 0.625 (625 GPD)
MicroFAST® 0.75 (750 GPD)
MicroFAST® 0.9 (900 GPD)

Technology Type:

Class One Approval
Total Nitrogen \leq 19 mg/L
TSS \leq 30 mg/L
BOD \leq 30 mg/L
Oil & Grease \leq 5 mg/L

Certification Dates:

Renewed: October 8, 2019
Expires: Class One Approval, No Expiration

CERTIFICATION

The Rhode Island Department of Environmental Management (RIDEM) has reviewed the Alternative Technology renewal application submitted by Bio-Microbics, Inc., hereafter referred to as the “Vendor”, for the FAST (Fixed Activated Sludge Treatment) aerobic wastewater treatment system. Based upon the information contained in the application the RIDEM hereby accepts FAST, hereafter referred to as the “Technology” and hereby renews the Technology’s approval.

The Technology is an aerobic fixed-film, activated sludge process that is a combination of the conventional trickling filter and activated sludge processes. The Technology is designed to be installed within a two-compartment tank where the first compartment provides a primary settling zone for incoming sewage and the second houses the Technology. The Technology contains submerged media that provide surfaces for microbial growth. Aeration and circulation are provided by a blower that pumps air into a draft tube that extends down the center of the Technology. Treated effluent is discharged to a leachfield.

The RIDEM recognizes the Technology as capable of achieving effluent concentrations of \leq 19mg/L Total Nitrogen. The RIDEM also recognizes the Technology as a Category 2 technology as defined in the Rules Establishing Minimum Standards Relating to Location, Design, Construction and Maintenance of Onsite Wastewater Treatment Systems (the OWTS Rules), as amended. Category 2 technologies are advanced treatment units that are not timed-dosed and have been classified by the RIDEM to at least meet effluent standards of \leq 30 mg/L for TSS and BOD and \leq 5 mg/L for Oil and Grease.

Design and installation of the Technology shall be in accordance with the following terms and conditions:

I. General Design Requirements

1. The Technology is approved for the reduction of Total Nitrogen to ≤ 19 mg/L, TSS and BOD to ≤ 30 mg/L, and Oil and Grease to ≤ 5 mg/L for residential use.
2. This system is approved for residential use only. All OWTS applications specifying the Technology will be limited to a maximum design flow of ≤ 900 gallons per day. This flow limitation also applies to variance requests submitted in accordance with the OWTS Rules.
3. All residential designs with design flows ≥ 700 gallons per day shall be assessed by the Vendor and confirmed to be capable of meeting treatment objectives prior to submittal to the RIDEM.
4. Design and installation shall be in strict conformance with the RIDEM-approved Technology Design Manual dated: **September 10, 2019**.
5. The Technology employs the use of a two-compartment tank. The model used shall be based on design flow according to the Vendor's design manual. The Technology may not be installed in parallel to treat design flows that exceed the model-specific maximum design flow.
6. Since constant aeration is key to the performance of the Technology, the blower must be operational 24 hours a day. To ensure owner/operator compliance with this condition, all installations of the Technology shall be equipped with an hour meter and a visible and audible motor/power failure warning light, mounted on a NEMA approved cabinet on the exterior of the building.
7. When a discharge or drainfield pump is used: pumps must be wired to the same circuit as the blower.
8. Leachfield Area Reduction
 - a) Designs incorporating this Technology and a conventional leachfield shall be allowed a 45% reduction in the required leachfield size. This reduction is based upon the ability of the Technology to remove BOD and suspended solids as demonstrated by the data presented in the Vendor's submittal. No reduction in leachfield size shall be allowed for non-conventional leachfields unless the leachfield is approved as a Class One alternative component and such reduction is not prohibited by the Class One alternative component Certification. Deep leaching chambers and any conventional leachfield using more than one foot of stone below shall be prohibited with or without the reduction.
9. Technology tanks, dosing chambers, pumping chambers, and riser assemblies shall be certified watertight by the manufacturer or field-tested and certified watertight using procedures set forth in the OWTS Rules.
10. Each Technology design shall meet all other applicable OWTS standards and receive prior approval by the RIDEM pursuant to the regulations in effect at the time of application.
11. Design and installation shall be in strict conformance with the RIDEM-approved Technology Design and Installation manual and shall only be performed by a Rhode Island licensed designer/installer who has received training and is authorized in writing by the Vendor to design/install the Technology.

II. Training

1. The Vendor shall make training available for designers, installers, and service providers.
2. The Vendor shall notify the RIDEM of the date and time of each training seminar and submit to the 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 requirements for Vendors' technology training available on the RIDEM website in the A/E technology section.

3. The Vendor shall make available to the public, a means of verifying individuals, by name and category, who have received training and are authorized in writing by the Vendor to design, install, and maintain the Technology.

III. General Certification Requirements

1. The Vendor is responsible for providing any revisions to the design, installation, operation and maintenance manual(s) for all models applicable to this certification to RIDEM for review and approval within thirty (30) days of RIDEM request. All manuals must be provided to the RIDEM in electronic portable document format (pdf).
2. The Vendor shall notify the RIDEM in writing of any changes to the Technology, including its discontinuation. Modifications deemed by the RIDEM to be substantial, may require re-application to the alternative/experimental program.
3. The Vendor shall notify the RIDEM at least 30 days prior to any proposed transfer of ownership of the 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 Technology with a copy of this approval prior to the sale of the Technology.

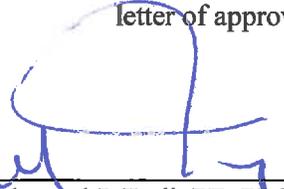
IV. Operation and Maintenance Requirements

1. Operation and maintenance of the Technology shall be performed in strict conformance with the RIDEM approved O&M Manual dated: **September 10, 2019**.
2. The RIDEM approved O&M Manual shall be provided to the Owner/Operator.
3. Installations of the Technology shall be maintained according to the manufacturer's specifications.
4. For seasonally used installations of the Technology, the Vendor shall provide specifications for protection of the Technology and the biological component from freezing, and conditions under which power to the Technology may be turned off.
5. The Vendor must offer for sale a minimum two-year service contract, which must include as an option, service to all components of the treatment train in addition to the Technology.
6. The Applicant/Owner shall record copies of the OWTS construction permit issued by RIDEM and the initially executed O&M contract(s) for the Technology, 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.
7.
 - a) The owner shall retain a public or private maintenance entity (service provider) for the life of the Technology and all other A/E components of the treatment train; a Vendor-authorized homeowner functioning as service provider is exempt from this for the Technology and any components of the treatment train for which the homeowner is providing service.
 - 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 Technology and all other A/E components of the treatment train for which they will be performing O&M.
 - d) The service provider or homeowner providing O&M on his or her own Technology shall:
 - (1) Receive training as approved by the Vendor.

- (2) Be available to perform required preventative maintenance, perform repairs, respond to Technology emergency situations, and conduct performance monitoring when required by this Certification or by permit.
 - (3) Perform an inspection of the treatment Technology at least twice annually for residential systems.
8. Properly trained homeowners may perform operation and maintenance on their own OWTS.
 9. The Vendor shall have an inventory of Technology replacement parts available locally.

V. Rights of the RIDEM

1. The RIDEM may suspend, modify or revoke this approval for cause, including but not limited to: non-compliance with any of the provisions or conditions of this Certification, misrepresentation or failure to disclose fully all relevant data, or receipt of new information indicating that the use of the Technology is contrary to the public interest, public health or the environment.
2. The design, installation, and operation and maintenance manuals referenced herein are approved upon the date of approval of this Certification.
3. The RIDEM reserves the right to suspend or revoke this Certification if updated design, installation, and O&M manuals are not provided to the RIDEM within thirty (30) days of RIDEM request or one hundred and eighty (180) days prior to the expiration date of this Certification. All revisions must be reviewed and approved by the RIDEM.
4. This approval does not represent an endorsement of the Technology by the RIDEM. This letter of approval may be reproduced only in its entirety.



Mohamed J. Freij, PE, PLS
Supervising Sanitary Engineer, OWTS Program

10.8.19

Issuance Date