



RHODE ISLAND
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

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TDD 401-222-4462

Alternative/Experimental OWTS Technology Program

Vendor Information:

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Technology Name & Model Numbers:

AdvanTex®-AX 20 Treatment System

Technology Type:

Class One Technology Approval for:
TSS & BOD Removal (*Configured in Mode 1*)
Nitrogen Reducing System (*Configured in Mode 3*)
TN ≤ 19 mg/L

Certification Date:

Issued: May 22, 2013

CERTIFICATION

Based upon information contained in an application submitted by Orenco Systems, Inc. hereafter referred to as the "Vendor", the RIDEM hereby renews the AdvanTex-AX 20 Treatment System's placement on the RIDEM Alternative/Experimental Technology List for TSS and BOD removal and for nitrogen removal with the issuance of this Class One Certification.

The System is a packed bed textile filter inside a waterproof container. It receives effluent from a two-compartment septic tank and discharges treated effluent to a leachfield. Untreated wastewater enters the first compartment of the two-compartment septic tank where it receives primary treatment. Following primary treatment in the septic tank, effluent is dosed to the System. In Mode 1 for TSS and BOD reduction, filtrate from the System is returned to the second compartment of the septic tank; In Mode 3 for nitrogen removal, it is returned to the first compartment. The RIDEM recognizes the System as capable of achieving effluent concentrations of less than or equal to 19 mg/L total nitrogen (TN) and 20 mg/L each for TSS and BOD. 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 approved for treating residential strength wastewater with model-specific design flow only. See Vendor's design manual for appropriate model-specific design flows. The following provisions apply for proposed use at non-residential applications:
 - a) All commercial System designs shall be reviewed by and deemed acceptable to the Vendor prior to submittal to the RIDEM.
 - b) Applications shall be reviewed on a case-by-case basis by the RIDEM, for acceptability.
 - c) At a minimum the RIDEM will require sampling and testing of the wastewater (or an estimate/projection of 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 treatment objectives.
2. The System is preceded by a septic tank, or two septic tanks in series; the tank or tanks must meet the requirements in the design manual and conform to the requirements of the OWTS Rules.
3. Leachfield Area Reduction
 - a) Designs incorporating the System and a conventional leachfield shall be allowed a 50% reduction in the required leachfield size. This reduction is based upon the ability of the System 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 technology is approved as a Class I alternative component technology and such reduction is not prohibited by the Class I alternative component technology's certification. Deep leaching chambers and any conventional leachfield using more than one foot of stone below shall be prohibited with or without the reduction.
 - b) Each applicant proposing a reduced leachfield area 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 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.
4. In addition to other approved leachfield options allowed by regulation, the effluent from the System may be discharged to a pressure-dosed shallow-narrow drainfield provided the latter is designed in accordance with the Vendor's Design and Installation Manual and complies with related guidance and regulations issued by the RIDEM. A one-foot reduction in the required design groundwater separation distance is allowed when the System is used in conjunction with a pressure-dosed shallow-narrow drainfield.
5. 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.
6. All Systems shall be equipped with an hour meter and a visible and audible pump/power failure warning indicator, mounted on a NEMA approved cabinet located exterior to the building.
7. System tanks, dosing chambers, pumping chambers, and riser assemblies shall be manufacturer certified or field-tested and certified for water tightness using procedures set forth in RIDEM OWTS Rules.
8. Each System installation shall meet all other applicable OWTS standards and receive prior approval by the RIDEM pursuant to the Rules in effect at the time of application.
9. 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 on the System.

B. Nitrogen Reducing Provisions

1. The System is recognized as nitrogen reducing in Mode 3. Total nitrogen concentration in the effluent as measured at the D-Box shall not exceed 19 mg/l.

II. General Requirements

1. Training

- a) The Vendor shall hold training seminars for RIDEM Licensed Designers, Installers and homeowners and Service Providers. 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 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. Any public announcement or solicitations must be coordinated with this office. Please consult the RIDEM-issued requirements for Vendors' technology training available on the RIDEM website in the A/E technology section.
2. The Vendor shall make available to the public, a means of identifying the individuals, by name and category (designer, installer, professional service provider), who have received training and are authorized in writing by the Vendor to design, install and maintain the System.
 3. The Vendor is responsible for making the RIDEM approved design, installation and operation and maintenance guidance available to the public.
 4. The Vendor shall notify the RIDEM in writing of any changes to the System, including its discontinuation. Modifications deemed by the RIDEM to be substantial, may require re-application to the A/E technology program.
 5. 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.
 6. The Vendor shall provide any purchaser of the System with a copy of this approval letter prior to the sale of the system.

III. Operation and Maintenance (O&M) Requirements

1. The 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. Vendor 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.
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 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.
7.
 - 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; a Vendor-authorized homeowner functioning as Service Provider is exempt from this for the System and any other 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 System 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 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 twice annually.
 - (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.
8. At least two qualified independent professional Service Providers shall be maintained on the list at all times. A Service Provider who subcontracts service for the same technology, shall not be considered meeting this requirement. The list of Service Providers must be provided to RIDEM as part of the annual reporting requirement. Homeowners authorized to perform O&M on their own Systems shall be included on this list provided to the RIDEM, with the System address and associated permit number.
9. A list of trained professional Service Providers shall be made available to the public.
10. The Vendor shall have an inventory of System replacement parts available locally.

IV. Reporting Requirements

1. The Vendor shall submit an annual report to the RIDEM by the anniversary of this Certification each year, to include the following information for the preceding 12-months:
 - a) The number of Systems installed in Rhode Island since the last report,
 - b) The address of each installation, the name of the owner and the RIDEM permit number,
 - c) For each System, the number of inspections/maintenance calls conducted and a brief comment regarding activities performed and observations,
 - d) All known problems or failures experienced with a brief summary of the cause and remedial measures taken.
 - e) List of authorized Service Providers.Electronic submission is encouraged.

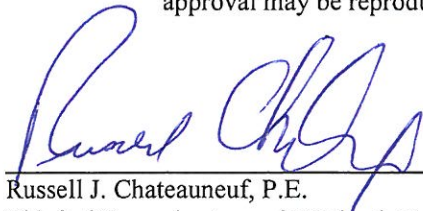
2. For any System with a design flow of 2,000 gpd or more, the Service provider shall monitor the treatment performance of the system. Grab samples shall be taken from the d-box or pump chamber prior to the leachfield and water use since the last sampling event shall be recorded. The System shall be monitored at least four times a year. Two samples shall be taken in the summer months and two in the winter months. Seasonally used systems (summer) shall be sampled in June, July, August and September. At a minimum the following parameters shall be monitored: BOD5, TSS, pH, TKN, nitrate, nitrite, ammonia, and alkalinity. This information shall be provided to the RIDEM and to the Vendor. The Vendor shall include this information in the annual report submitted to the RIDEM each year.

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 the RIDEM and to the Vendor, 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. Electronic submission is encouraged.

3. The Service provider shall report any termination or non-renewal of maintenance agreements to the RIDEM, the Vendor and to the local wastewater management authority should one exist for that area. Electronic notification is encouraged.

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 conditions or provisions of this approval, misrepresentation or failure to disclose fully all relevant data, or receipt of new information indicating that the use of the System is contrary to the public interest, public health or the environment.
2. This approval does not represent an endorsement of the System by the RIDEM. This letter of approval may be reproduced only in its entirety.



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

Issuance Date: 5/22/13