VERMONT

State of Vermont
Department of Environmental Conservation
Drinking Water & Groundwater Protection Division
1 National Life Drive, Main 2
Montpelier, Vermont 05620-3521

Agency of Natural Resources

www.anr.state.vt.us/dec/ww/wwmd.cfm

INNOVATIVE/ALTERNATIVE SYSTEM APPROVAL

General Use per §1-1001 of the
Wastewater System and Potable Water Supply Rules, effective September 29, 2007

Aqua Aire® Wastewater Treatment System
2012 Renewal
2006 Original Approval
Approval Number 2006-01

Vendor Information

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Technology Name

Aqua Aire® Wastewater Treatment System

Technology Type

Aerobic Wastewater Treatment System

Expiration Date
March 1, 2014

Approval

The Aqua Aire® Wastewater Treatment System, Models: AA500, AA600, AA750, AA800, AA1000, AA1200 and AA1500, may be used as part of a subsurface wastewater disposal system approved under the Wastewater System and Potable Water Supply Rules, effective September 29, 2007, under the following conditions:

1. The treatment units must be installed and operated as described in the Innovative/Alternative System application package filed with the Agency of Natural Resources (Agency) on July 19, 2005, and with the site-specific installation and operating instructions submitted.

2. Unit sizing must be in accord with the technical information submitted with the Innovative/Alternative System application package on July 19, 2005. The sizing shall be based on the calculated design flow per §1-808 of the Wastewater System and Potable Water Supply Rules, effective September 29. 2007.

3. This approval is based on treatment only of domestic wastewater of low and moderate strength as specified in §1-915(a)(1)(C) & (D) of the Wastewater System and Potable Water Supply Rules, effective September 29, 2007. Systems to treat higher strength wastewater may be approved on a case by case basis.

4. The system may be used for both new and replacement systems.

5. All effluent from an Aqua Aire® Wastewater Treatment System shall be discharged to a filtrate disposal system that conforms to the requirements of §1-916 of the Wastewater System and Potable Water Supply Rules, effective September 29, 2007. If the rules are revised during the term of this approval, this approval shall be revised as needed to conform to the revisions.

6. All treatment modules shall be equipped with anti-flotation flanges unless there is a demonstration that flotation is not a problem on a particular site or that an alternative system has been approved by the Agency.

7. Detailed operating instructions shall be provided in writing to the owner/operator.

8. The Vendor shall have an inventory of replacement parts available locally or available for delivery within 24 hours.

9. The Vendor shall provide a copy of this approval letter to any landowner who is a prospective purchaser of an Aqua Aire® Wastewater Treatment System prior to the sale

Agency for the purchaser's property. The application filed with the Agency shall include the landowner's written acknowledgement of this approval letter. Prior to any sale of the property or completion of a sales agreement to sell the property, a copy of the site-specific permit shall be provided to the prospective purchaser. The owner of record shall notify the Vendor of the sale, and provide contact information for the new owner.

10. The owner of a property where an Aqua Aire® Wastewater Treatment System has been installed shall have a valid maintenance contract in force at all times. The minimum length of any contract shall be for a period of two years. A copy of the initial and each succeeding contract shall be submitted to the appropriate Regional Environmental Office of the Agency and to the Vendor. Maintenance shall be performed by, or shall be supervised by, a Licensed Class 1 Designer or a Licensed Class B Designer, approved by the Vendor or their representative, who shall provide written inspection reports detailing the maintenance performed on the specific system including measurements of sludge and scum levels and any pumping required, any problems that have occurred since the previous inspection, any modifications made to the system, the date of the inspection, and any work required to ensure the system operates in compliance with this approval.

    The inspection shall be performed in accord with the manufacturer's Operation and Maintenance requirements submitted as part of the Innovative/Alternative System application package and shall include a visual check of the system, including the aeration chamber, clarifier and effluent. The compressor shall be checked and the air filter cleaned or replaced. A 30 minute settleable solids test shall be performed on a sample of the aeration chamber solids to determine the need for pumping the system. If at any inspection the effluent is cloudy or pungent smelling, a sample shall be collected and tested for BOD and TSS. The results of any testing shall be submitted with the annual inspection report.

11. The first inspection shall be completed no later than 6 months after placing the unit in service. The second inspection shall be completed no later than 12 months after placing the unit in service. In accordance with the Manufacturer's requirements, subsequent inspections shall be completed at six month intervals based on the date when the unit was first placed in service. More frequent inspections or additional testing, required by the manufacturer to ensure proper functioning of the system, shall be conducted in accordance with the manufacturer's specifications. All reports shall be filed with the appropriate Regional Environmental Office of the Agency, the Vendor and the landowner with the annual inspection report

12. The Vendor shall submit an annual report to the Agency by April 1 of each year containing the following information for the 12 month period ending December 31 of the previous year:

    A. The number of permitted units installed in Vermont, including those permitted by the Agency and those permitted by Towns under authority of 24 V.S.A. Chapter 102.

B. The address of each installation.

C. The name of the owner at the time of installation and any known change in ownership.

D. All known problems or failures, with a brief summary of the cause and remedial measures taken.

E. Copies of reports from an approved laboratory of all effluent quality testing conducted.

13. This approval is based on information submitted by the Vendor indicating that the specified models will routinely provide effluent with no more than 30 mg/l of BOD_5 and no more than 30 mg/l of TSS.

14. When a project is subject to the Wastewater System and Potable Water Supply Rules, effective September 29, 2007, site-specific permission for the use of this product is required in the form of a Wastewater System and Potable Water Supply Permit.

15. A site-specific permit for the use of this product may be revoked if the unit fails to function properly or if the property owner fails to have a valid contract for the required maintenance and inspection of the unit. In the case of the unit failing to function properly, revocation of the permit will require that the use of the building be discontinued unless another wastewater disposal system is installed based on prior written approval by the Agency.

16. This approval is not a representation or guarantee of the effectiveness, efficiency or operation of an Aqua Aire® Wastewater Treatment System.

17. For commercial wastewater applications, the Manufacturer (Vendor) shall provide a letter to the Designer and Owner, certifying the use of this technology for the proposed application.

Design and Review Conditions

The following conditions will be used by the Department in reviewing permit applications that include an Aqua Aire® Wastewater Treatment System:

Equipment

- Aqua Aire® Wastewater Treatment System, Models: AA500, AA600, AA750, AA800, AA1000, AA1200 and AA1500

Design and Application

- The treatment unit shall be designed by a Licensed Class 1 Designer or a Licensed Class B Designer in accordance with the manufacturer's recommendations. The designer shall assure that the system will properly function in all seasons.

- The designer must assess the structural needs of the unit for the specific application site and place the requirements on the design plans.

- The designer must determine the type of backfill required and any necessary placement specifications.

- The designer must assess the ventilation path for the particular application and make any necessary provisions to assure proper flow and control of odor emissions.

- The designer shall consult with the Vendor for proper sizing.

- The designer must assure routine access to each compartment of the unit (access to grade) as well as the control panel, any pumps, distribution boxes (for sampling), and effluent filters.

- The designer must address flotation issues if the SHWT will be above the bottom of any of the tanks.

Installation Inspection

- The treatment unit shall be set up under the instruction and guidance of an installer/inspector trained by the Vendor.

- The treatment unit shall be inspected by a Licensed Class 1 Designer or a Licensed Class B Designer, approved by the Vendor, after construction of the unit and installation of the tanks before backfilling, and after backfilling and grading is complete. The inspection shall include checking for an adequate structural foundation to support the unit, checking for levelness of the tanks, and inspecting for damage and proper assembly.

- Before backfilling, the unit and tankage shall be tested for watertightness by filling the unit or tank with water to a point that is above all below grade openings and holding it at a constant level for 24 hours; there shall be no measurable leakage. During the test the entire unit and tanks shall be inspected for visible leaks. Should the unit or tanks fail the test they may be repaired and retested. The testing and repairs shall be conducted under the direction and in the presence of the inspecting Licensed Designer.

- The Licensed Designer shall inspect all piping for proper installation and watertightness before backfilling.

Start-up

- Start-up of the system and initial operational checks shall be conducted by an installer/inspector trained by the Vendor, who shall submit a report to the owner, the Vendor, and to the inspecting Licensed Class 1 Designer or Licensed Class B Designer indicating any problems encountered, their resolution, and affirmation that the system is operating as intended.

Operational Maintenance and Inspection

- The owner shall have a valid maintenance contract in force at all times. The minimum length of any contract shall be for a period of two years. A copy of the initial and each succeeding contract shall be submitted to the appropriate Regional Environmental Office of the Agency and to the Vendor. Maintenance shall be performed by, or shall be supervised by, a Licensed Class 1 Designer or a Licensed Class B Designer, approved by the Vendor, who shall provide written inspection reports detailing the maintenance performed on the specific system including measurements of sludge and scum levels and any pumping required, any problems that have occurred since the previous inspection, any modifications made to the system, the date of the inspection, the results of all testing, and any work required to ensure the system operates in compliance with this approval.

  The inspection shall be performed in accord with the manufacturers Operation and Maintenance Manual submitted as part of the Innovative/Alternative System application package, and shall include a visual check of the system, including the aeration chamber, clarifier and effluent. The compressor shall be checked and the air filter cleaned or replaced. A 30 minute settleable solids test shall be performed on a sample of the aeration chamber solids to determine the need for pumping the system. If at any inspection the effluent is cloudy or pungent smelling a sample shall be collected and tested for BOD and TSS. The results of all testing shall be submitted to the Agency and to the Vendor, with the annual inspection report.

- The first inspection shall be completed no later than 6 months after placing the system in service.

- The second inspection shall be completed no later than 12 months after placing the system in service.

- In accordance with the Manufacturer's requirements, subsequent inspections shall be completed at six month intervals based on the date when the unit was first placed in service. More frequent inspections or additional testing, required by the manufacturer

to ensure proper functioning of the system, shall be conducted in accordance with the manufacturer's specifications.

- All reports shall be filed with the appropriate Regional Environmental Office of the Agency, the Vendor, and the landowner with the annual inspection report.

Permitting

- The permit shall run with the land.

- A copy of the site-specific permit shall be provided to any prospective purchaser prior to the sale.

- Each new owner of the property shall inform the appropriate Regional Environmental Office of the Agency, and the Vendor, within 30 days of the transfer of the property and include the name and mailing address of the new owner.

Effective: March 1, 2012

By: Ernest Christianson

Ernest Christianson
Engineering Manager