



AQUAWORX
REMIEDIATOR™
i n s t a l l a t i o n m a n u a l

THE AQUAWORX REMEDIATOR™ INSTALLATION INSTRUCTIONS

The Following Components and Tools are Required for Installation:

- Rake and Shovel
- Screwdriver and Wrench
- Hand Saw and Tape Measure
- Primer and Glue
- Protective Gloves
- Mastic
- Riser (if none on septic tank)
- ½-inch PVC Tee or Elbow for Bacterial Catalyst Assembly Handle
- ⅝-inch Hole Saw/Drill Bit
- ½-inch PVC Schedule 40 Pipe (amount based on location of pump)
- Multiple ½-inch PVC 90-degree Elbows (dependant upon site layout)
- ½-inch Quick Connect Union (optional)
- Anti-Tampering Screws

I. General

Unpack the Aquaworx Remediator Unit (Unit) and check for signs of damage. Notify Aquaworx™ immediately at 1-877-278-2979 if any damage has occurred. Remove the threaded rod from top of the Unit. The rod is a shipping aid and is not to be installed with the Unit. The following guidelines are for typical installations in a 850 to 2000 gallon residential septic tank. These installation instructions are general. Some installations may have differing additional requirements due to particular site conditions. **Note: The Aquaworx Remediator site evaluation form must be completed prior to installation.**

II. Septic Tank Requirements

a) riser

The riser will provide access to the Unit for future inspections and maintenance. If there are no risers on the septic tank, then expose the top of septic tank so a riser (not provided) can be installed. Risers shall be approved by the local authority and be installed per manufacture's installation instructions. The lid shall be secure to prevent unauthorized access and have provisions for safe access. Install the riser over the septic tank opening where the Unit will be installed.

b) unit location

If the tank is a dual-compartment septic tank then install the Unit at the outlet end. However if there are access limitations/obstructions, then the Unit can be installed at the inlet end. For a single-compartment tank, the Unit may be placed in either end of the tank. For an onsite system having more than one tank installed in series, install the Unit in the first tank.

c) minimum and maximum solids depths

- Floating solids layer shall be less than 6 inches
- Bottom sludge layer shall be less than 3 inches
- If the layers are greater then have the tank pumped

d) tank pumping and inspection recommendations

Pumping the tank is not a requirement, but if it is necessary then it is recommended that the tank be visually inspected for cracks or leaks from house plumbing, baffles, concrete corrosion, inlet and outlet tees.

Note: Aquaworx recommends a minimum liquid depth of 38" for proper unit operation. After pumping (if necessary), either refill the septic tank with the recommended 38" liquid depth or allow for sufficient time for the tank to refill prior to turning the Unit on.

III. Establish Location for the Air Pump

The air pump can be located in a garage, shed, basement or other suitable structure. Locate the pump within 3 feet of an electrical source.

If the locations described above are unavailable or impractical, the pump can be located in a plastic basin. The basin should be waterproof manufactured specifically for an outdoor environment. Locate the basin within 3 feet of the electrical source, preferably in a shady spot. (Complete basin installation instructions are provided in the Appendix.)

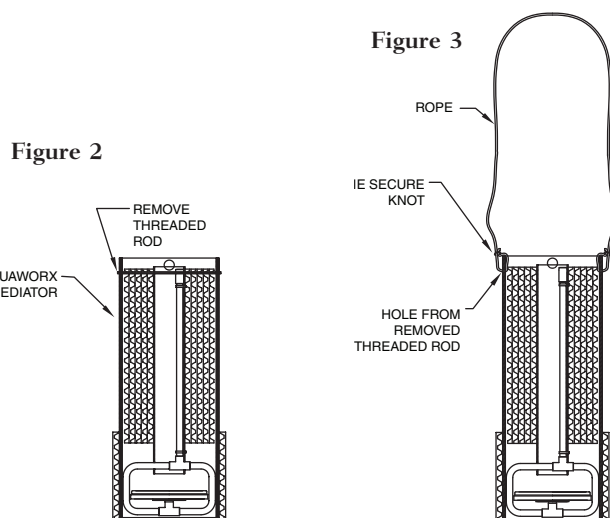
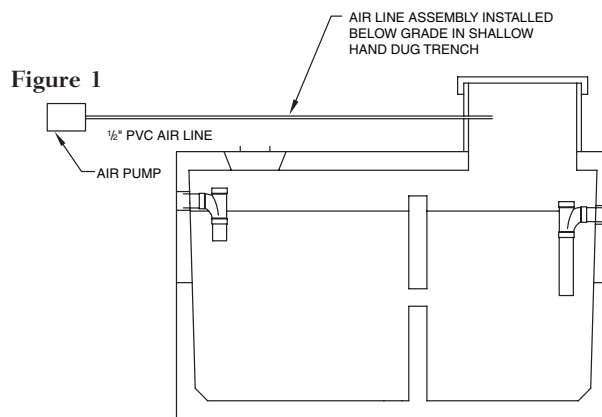
IV. Install Airline From the Air Pump to the Riser

1. Dig a 4-6 inch-wide by 8 to 12 inch-deep trench depending on minimum depth preferred in your area) from the air pump to septic tank riser so that trench intersects outside of riser at approximately a 90-degree angle.

2. Drill a 7/8-inch hole through the riser at or near the bottom of the trench. Install a 1/2-inch PVC Sch 40 pipe (not provided) through the hole so that it extends into the riser by at least 12 inches. This PVC pipe is the airline that will connect the air pump to the Aquaworx Remediator Unit. The area where the airline enters the riser must be sealed with mastic or by similar means.

3. Run the 1/2-inch Sch 40 PVC pipe back to the air pump and glue the pipe into the air connections male adaptor (Figure 1).

Note: Do not allow dirt or other contaminants to enter the airline. Additional fittings and pipe may be required depending on the location of the pump.



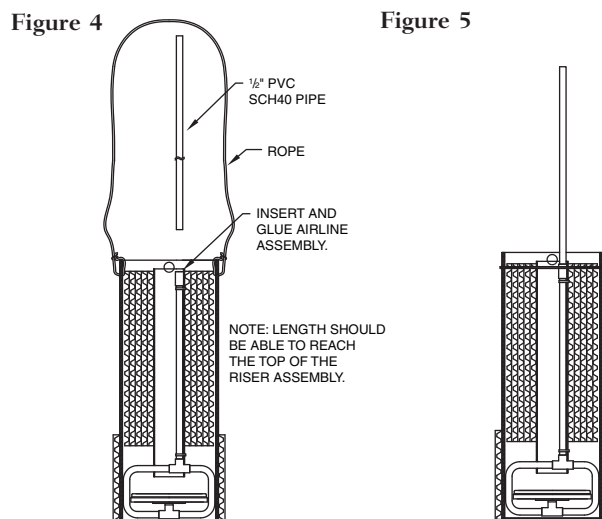
V. Install the Unit in the Septic Tank

1. Be sure that the threaded rod has been removed from the top of the Unit. Do not remove the internal pipe and surrounding media from the center of the Aquaworx Remediator (Figure 2).

2. Included with the Unit is a piece of rope made of a non-reactive material. Thread the ends of the rope through the holes left by the threaded rod and tie with non-slip knots. Pull hard against the knots to make certain they do not slip. The rope will be utilized to set the Unit into the septic tank and to remove it for future maintenance needs (Figure 3).

3. Prime and glue a piece of 1/2-inch Sch 40 PVC pipe (not provided) into the coupling within the 4-inch center tube (Figures 4 & 5).

Note: Use care to ensure a tight connection. The vertical PVC pipe is also part of the inlet airline assembly. The length of this pipe should allow it to vertically cross the horizontal PVC pipe coming into the riser.



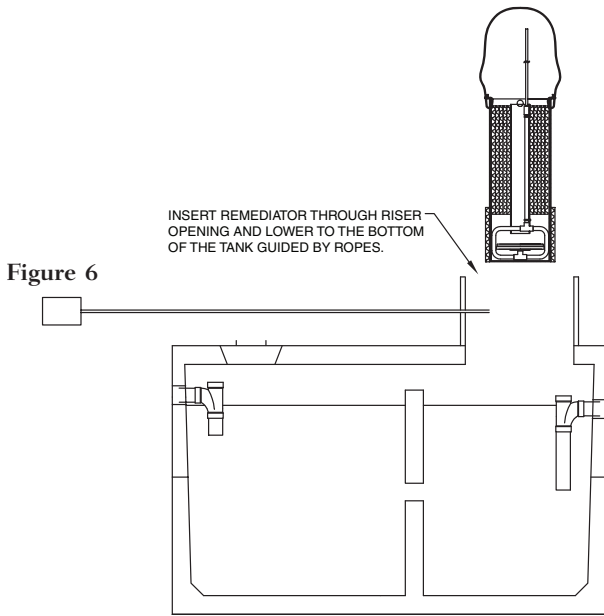


Figure 6

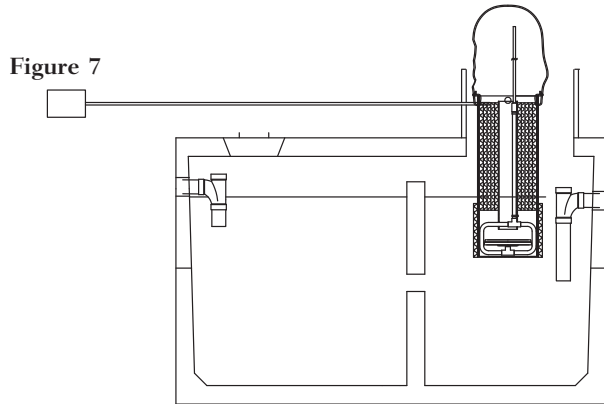


Figure 7

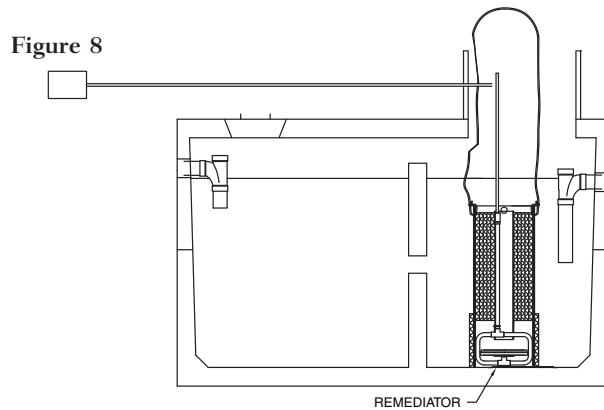


Figure 8

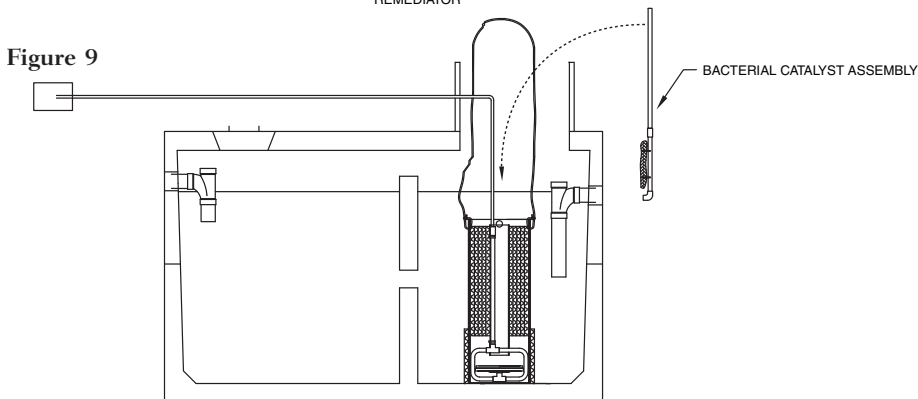


Figure 9

4. Using the rope provided lower the Unit into the tank (Figures 6 & 7).

Note: Place the Unit with the airline assembly as close as possible to the inside wall of the riser. Because the Unit sits on the bottom of the septic tank, the rigid PVC airline assembly adds stability when glued in place. The Unit should be positioned below the riser for easy access to the top of the Unit.

5. Anchor the rope to the ground with a stake or large rock so that it does not fall into the tank while completing the airline assembly.

6. To complete the airline assembly, cut the two PVC pipes to the appropriate length. Make a glued connection with a 1/2-inch PVC 90 (not provided) (Figure 8).

Note: If installing a quick connect union (recommended), cut the horizontal pipe to a shorter length allowing for the extra connection.

7. Remove the Bacterial Catalyst Assembly from the packaging. *Note: Wash hands after handling.* Glue a 1/2-inch PVC Sch 40 pipe (not provided) into the coupling end of the Bacterial Catalyst Assembly creating an extension. The extension should be long enough to extend up into the riser when the Bacterial Catalyst Assembly is set down into the installed Unit.

8. Cut the PVC pipe to a length so that it is a few inches below the lid of the riser and glue on a 1/2-inch PVC tee or elbow (not provided) as a handle. This facilitates the removal and replacement of the Bacterial Catalyst Assembly.

9. Slide the PVC extension with the Bacterial Catalyst Assembly down the center PVC pipe of the Unit (Figure 9).

Note: Do not force the Bacterial Catalyst Assembly into the Unit. As long as it is submerged within the air column in the Unit then it is positioned correctly.

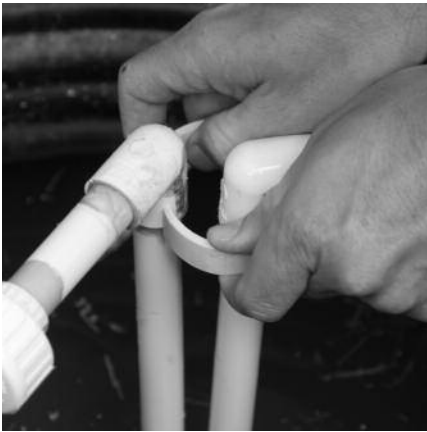


Figure 10



Figure 11



Figure 12

10. Secure the Bacterial Catalyst Assembly by clipping the “C” clip (provided) around the PVC pipe coming out of the Unit (Figure 10).

11. Tie off the excess rope from the Unit to the horizontal air-line pipe (Figure 11).

VI. Start-up the Unit

1. Plug the air pump into a GFCI rated electrical outlet. Make sure the air pump begins to operate. (Listen for a humming sound.)

2. Check all PVC pipe and fitting joints for evidence of air leaks. Make sure liquid over the Unit is being actively agitated and aerated and that the Bacterial Catalyst Assembly is submerged (Figure 12).

3. Unpleasant and noxious odors will become noticeable, but should subside within 48 hours. Avoid breathing the gases from the septic tank. Place the riser lid over the top of the riser opening to reduce exposure to these gases. White PVC pipe and fittings are not UV resistant. All exposed pipe and fittings must be covered or painted (not provided).

4. Install septic tank riser lid with anti-tampering screws (not provided). Make certain all lids are child proof.

5. Backfill trenches and bury all ½-inch PVC pipes to restore the landscaping.

Follow-up inspections are recommended at one week and three weeks after start up.

warning

all electrical installations to be completed according to local codes and ordinances. all electrical work to be done by qualified electrician.

never enter an empty septic tank. septic gases are extremely hazardous and can cause death. detectable and non-detectable poisonous gases will remain in the empty septic tank.

do not breathe septic gases while working around open septic tanks. exposure to methane and hydrogen sulfide can be harmful.

As the Unit begins to operate within the septic tank, unpleasant and offensive odors will increase and become very noticeable.

These odors normally disappear after a day or two. After start up of the Unit, a foam or bubbly flock may occur within a week or two. If foam is present then wash down with a hose.

BACKGROUND AND GUIDELINES FOR OPERATING AN AQUAWORX REMEDIATOR SYSTEM

septic tank: The septic tank separates solid waste from liquid. The septic tank removes solids from the waste stream when properly maintained. The solids are digested in the tank but will build up over time and must periodically be removed by pumping. The performance of the septic tank or Aquaworx Remediator Unit can be compromised if toxic compounds or harmful products are discharged from the home into the septic tank.

proprietary bacteria are introduced at start up of the system within the bacterial catalyst, which is replaced as part of the annual maintenance. Billions of spores of bacteria are contained within the bag. Unlike a conventional anaerobic septic tank, the proprietary bacteria digest the solids within the septic tank. The proprietary bacteria is robust and capable of adapting to a wide variety of conditions and moderate abuses. But, the bacteria do best when care is given to what you put in your septic system.

operations guidelines: The following are recommended guidelines to follow after the installation of the Aquaworx Remediator. These guidelines are within the normal suggested septic system guidelines for the standard conventional septic system.

the unit can be damaged or clogged by non-biodegradable items or materials that enter the septic system, including but not limited to any items made of rubber, latex, plastics or metals, sand or soil from non water tight septic tanks, etc. It is important to keep such items out of the onsite wastewater treatment system.

household cleaning products or chemicals should be discharged down the drain into the septic system sparingly. Typically available household cleaning products can normally be used. Cleaning products containing disinfectants, pesticides or that make claims they kill bacteria should be avoided. Use all cleaning chemicals sparingly and follow manufacturer's instructions.

laundry soaps and detergents with bactericides should also be avoided. Laundry should be spaced out over the week. If bleach is going to be used use powdered bleach. If possible, do no more than one load a day when using bleach.

Products labeled “**natural, organic and biodegradable**” still can be toxic; toxic compounds are found everywhere in nature. Read the labels carefully and avoid products that claim to “kill bacteria.”

additional materials that should not be allowed in a septic system include, but are not limited to, automotive products, petroleum products, pesticides, paint or paint thinner, solvents, etc.

water softeners may cause problems for a septic system if the backwash discharges into the septic tank. High concentrations of salt discharged to the septic tank can raise the pH in a system upsetting the bacteria.

prescription drugs, including but not limited to: antibiotics, chemotherapeutic and immune

power outage: If power is lost for up to 6 days where the air pump is not functioning, then the septic system should function without problems. Should the power remain out for an extended period of time then contact your local Certified Installer or Maintenance Inspector for an additional service visit to check the system.

if the home is unoccupied for any extended period up to two months or if the unit is in a septic tank serving a vacation property that is periodically occupied, leave the air pump operating. Service intervals should be scheduled for start-up period of each season when possible.

if a vacation home is closed up after the vacation season and the system will be unused for more than 2 months, unplug the air pump. When the vacation home is occupied the next season, have the service provider install a new Bacterial Catalyst, and plug in the air pump. The system will restart without additional oversight.

if there are additional questions contact your local Certified Aquaworx Remediator Installer or Maintenance Inspector.

APPENDIX

The following instructions detail the appropriate installation procedures for the Air Pump Basin assembly. This is an option when there is not an appropriate location to install a pump within a nearby structure, such as a garage or basement. The Air Pump Basin must be vented to supply air to the pump and for cooling. The following is recommended as the minimum requirements for maintaining the life of the air pump.

VII. Air Pump Requirements

The Air Pump can be located in a garage, shed, basement or other suitable structure. When these are unavailable or impractical it can be located in a plastic basin. There are many plastic basins available. The basin should have a minimum diameter of 20 inches and minimum height of 12 inches. It should be constructed of material designed to withstand exterior installation and provide a waterproof environment for the air pump. Locate the basin within 3 feet of the electrical source in a shady spot. Burying the basin is not recommended, since there is potential for moisture, condensation or water to collect in the basin. In addition, it may allow excessive heat build up. These conditions can cause the air pump to malfunction.

VIII. Connect Basin Air Line to Air Pump

The Aquaworx Remediator package includes a clear tube air pump connector with two hose clamps, and a barbed glued fitting connected to a PVC 90-degree elbow. Please locate and set aside.

1. Cut the PVC close nipple (provided) to 1½ inches in and glue the close nipple into the female adaptor. Make certain the threaded barb adaptor on the clear tube air pump connector is tightly threaded into the PVC 90-degree elbow (provided). Tighten the hose clamp on the barb end (provided). Position the air pump in the center of the basin. **DO NOT GLUE THIS CONNECTION NOW!** Estimate the correct length for the clear plastic tubing and cut (Figure 13).

2. Remove the air pump and the clear tube connector. Put the second hose clamp (provided) over the open end of the clear plastic tube, slide the tube over the outlet port of the air pump and tighten the hose clamp (Figures 14 & 15).

3. Reposition the air pump within the basin, now connected to the clear tube connector, slip the PVC 90-degree elbow over the close nipple to insure the clear tube is not kinked, then glue the PVC 90-degree elbow on the close nipple (Figure 16).



Figure 13



Figure 14



Figure 15



Figure 16



Figure 17



Figure 18

IX. Make Electrical Connection to Basin and Air Pump

Note: Hire a qualified electrician to wire a GFCI protected connection to the air pump.

suggested electrical conduit assembly

Required components:

- ½-inch Carlon (or similar) Gray Electrical Male Adapter
- ½-inch Carlon (or similar) PVC Entry Elle
- ½-inch PVC Sch 40 Pipe
- ¾-inch Barb End Spade Bit
- EMT Lock Nut
- Wet or Dry PVC Glue

1. Install a ½-inch Carlon (or similar) gray electrical male adaptor (not provided) by drilling another ¾ inch hole, typically at 90 or 180 degrees from the airline connection male adaptor. Follow the same procedure as the air line male adaptor installation except use an EMT lock nut on the inside of the basin instead of the female adaptor (Figure 17).

2. Cut a close nipple approximately 1½ inches long from ½-inch PVC pipe (not provided) and glue it into the Carlon male adaptor. Glue a ½-inch Carlon PVC entry "L" (not provided) onto the close nipple in the position best suited to connect to the electrical service. Leaving it unglued for the electrician is also an option. Check to make certain the electrician properly glued this connection (Figure 18).

Note: The electrician can connect the electrical service to this entry or make his own waterproof connection to the basin. The electrician must connect the basin and air pump to a GFCI protected service that meets the codes and ordinances of the local authority having jurisdiction over electrical installations.

AQUAWORX REMEDIATOR™ by INFILTRATOR® SYSTEMS INC., (“Infiltrator”) LIMITED WARRANTY

ONE (1) YEAR MATERIALS AND WORKMANSHIP LIMITED WARRANTY

ONE (1) YEAR PERFORMANCE LIMITED WARRANTY

(a) This limited warranty is extended to the end user of an Aquaworx Remediator™ device. The Aquaworx Remediator™ device manufactured by Infiltrator®, when installed and operated in accordance with Infiltrator's installation and operating instructions by a certified Aquaworx™ installer, is warranted to you: (i) against defective materials and workmanship for one (1) year after installation; and (ii) that, exclusive of the start up period, it will resolve surface ponding of effluent or backup of effluent in the home for one (1) year after installation. Aquaworx™ by Infiltrator® will, at its option, (i) repair the defective product, (ii) replace the defective materials or (iii) refund the end user of the Aquaworx Remediator™ device the cost of the device up to a maximum of \$2,000.00. The end user shall, upon request, permit Infiltrator® or its agent to remove the device.

(b) YOUR EXCLUSIVE REMEDY WITH RESPECT TO ANY AND ALL LOSSES OR DAMAGES RESULTING FROM ANY CAUSE WHATSOEVER SHALL BE SPECIFIED IN SUBPARAGRAPH (a) ABOVE. WE SHALL IN NO EVENT BE LIABLE FOR ANY CONSEQUENTIAL OR INCIDENTAL DAMAGES OF ANY KIND, HOWEVER OCCASIONED, WHETHER BY NEGLIGENCE OR OTHERWISE. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THIS LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS AND YOU MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM STATE TO STATE.

(c) THIS LIMITED WARRANTY IS THE EXCLUSIVE WARRANTY GIVEN BY AQUAWORX™ BY INFILTRATOR® AND SUPERSEDES ANY PRIOR, CONTRARY, ADDITIONAL, OR SUBSEQUENT REPRESENTATIONS, WHETHER ORAL OR WRITTEN. AQUAWORX™ BY INFILTRATOR® DISCLAIMS AND EXCLUDES TO THE GREATEST EXTENT ALLOWED BY LAW ALL OTHER WARRANTIES, WHETHER EXPRESS OR IMPLIED, OR STATUTORY, INCLUDING ANY WARRANTY OR MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE AND ANY IMPLIED WARRANTIES OTHERWISE ARISING FROM COURSE OF DEALING, COURSE OF PERFORMANCE, OR USAGE OF TRADE. NO PERSON (INCLUDING ANY EMPLOYEE, AGENT, DEALER, OR REPRESENTATIVE) IS AUTHORIZED TO MAKE ANY REPRESENTATION OR WARRANTY CONCERNING THIS PRODUCT, EXCEPT TO REFER YOU TO THIS LIMITED WARRANTY. EXCEPT AS EXPRESSLY SET FORTH HEREIN, THIS WARRANTY IS NOT A WARRANTY OF FUTURE PERFORMANCE, BUT ONLY A WARRANTY TO REPAIR/REPLACE OR REFUND.

(d) YOU MAY ASSIGN THIS LIMITED WARRANTY TO A SUBSEQUENT PURCHASER OF YOUR HOME.

CONDITIONS AND EXCLUSIONS

There are certain conditions or applications over which Aquaworx™ by Infiltrator® have no control. Defects or problems as a result of such conditions or applications are not the responsibility of Infiltrator® and are NOT covered under this warranty. They include any condition or application not set forth in the Aquaworx™ Site Evaluation Checklist, installation of the Aquaworx Remediator™ device by other than a Aquaworx™ certified Installer and any failure to comply with the installation and operating instructions. YOU MUST PROVIDE A COPY OF YOUR AQUAWORX™ SITE EVALUATION CHECKLIST WITH ANY CLAIMS.

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CLAIMS UNDER THIS LIMITED WARRANTY MUST BE MADE WITHIN 15 DAYS OF THE APPEARANCE OF A DEFECT.

Your local Aquaworx™ certified installer is equipped to handle your warranty claim quickly and efficiently. Because they are located near you and familiar with your purchase and/or project, your local Aquaworx™ certified installer can best expedite the solution to your claim. If within fifteen (15) days, our local Aquaworx™ certified installer has not responded to your request; send a request to Infiltrator® in writing at Aquaworx™ Warranty Department, Infiltrator® Systems, Inc., P.O. Box 768, Old Saybrook, CT 06475. You must include a copy of your Aquaworx™ Site Evaluation Checklist with all warranty claims.

Aquaworx™ by Infiltrator® recommends that your Aquaworx Remediator™ device be serviced by an Aquaworx™ certified installer, Aquaworx™ maintenance provider, or the homeowner per the following schedule;

- Start Up (1-3 weeks) - Inspections of all accessible system components for proper fit and function. Verification of solid levels and reduced odors in septic tank and visual inspection for surfacing effluent above leachfield.
- Mid Year (6 months) - Inspections of all accessible system components for proper fit and function. Verification of solid levels and reduced odors in septic tank and visual inspection for surfacing effluent above leachfield. Cleaning of air pump filter and inspection of basin assembly, septic tank riser, riser lid and seals.
- Year End (12 months) - Inspections of all accessible system components for proper fit and function. Verification of solid levels and reduced odors in septic tank and visual inspection for surfacing effluent above leachfield. Cleaning of air pump filter and inspection of basin assembly, septic tank riser, riser lid and seals. Removal and replacement of Bacterial Catalyst Assembly.



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