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# ENVIRONMENTAL Fact Sheet

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## Suggested Installation Practices for Water Treatment Aerators

Aeration treatment of water at private homes can be effective to remove radon or a volatile organic compound (VOC). The following describes some best management practices related to the installation of aerators.

### **INTAKE AIR**

DES suggests that the air to be used by the aerator be taken from a clean, controlled area. The air intake pipe can be positioned either outside or inside the home. Avoid areas that have high moisture, mold, odors, or airborne particles, such as dust from woodworking shops.

For locations inside the home, DES suggests that the air intake be at least one foot above the floor, but preferably near the ceiling. If the home is of “air-tight” design and construction, an interior intake location may result in a vacuum being created within the home. This will prevent proper venting of heating system combustion gases and reduce the efficiency of the aeration system. In such cases, outside air should be allowed to vent in.

If the air intake is outside the home, it should be high enough off the ground to avoid contamination from such activities as power lawn mowers, leaf blowers, and splash from roof runoff and garden hoses. The air intake also should be positioned away from the waste discharge from the aerator.

An air filter is recommended on the air intake to ensure that clean air is supplied to the aerator. Options include using filters similar to those used on forced hot air heating systems or those used on heavy construction equipment. Periodic maintenance is needed.

The air intake should prevent entry of insects and small animals. We suggest using a manufactured inlet. If fabricating your own inlet, make sure that the inlet opening faces downward and that the opening is covered with small mesh screening. If the intake device is in an active area, further structural protection should be provided. Extra strength could be achieved with the addition of heavy, half-inch hardware cloth screening.

### **MAINTENANCE OF AIR INTAKE**

The air intake should be periodically checked for holes and cleanliness. Annual air filter element replacement is normal.

## **OPERATIONAL CONSIDERATIONS**

If the air intake is attached to a long run of piping, frictional losses (or less efficient operation) on the suction side of the fan/blower of the aerator may occur. You may wish to have these losses measured and can do so by using pressure gauges typically used in the heating and ventilating field. To minimize losses, at least a four-inch diameter pipe can be used.

## **DISPOSAL OF WASTE GAS**

Waste air from the radon or VOC aerator needs to be disposed of outside the home. This air is moist and has an elevated concentration of radon gas or VOC.

To prevent re-entry of radon back into the home, the point of discharge from vents of fan-powered water treatment systems should meet all of the following requirements:

1. Be at least 6 inches above the eave of the roof (above the highest eave of the roof whenever possible).
2. Be 10 feet or more above the ground.
3. Be 10 or more feet from any window, door or other opening into conditioned spaces of the structure that is less than 2 feet below the exhaust point.
4. Be 10 feet or more from any opening into an adjacent building.

The total required distance (10 feet) from the point of discharge to openings in the structure may be either measured directly between the two points or be the sum of measurements made around intervening obstacles.

## **WASTE AIR DISCHARGE PIPE**

Bacteria may grow in the air discharge line. These bacteria are generally believed to not cause disease. Mist will carry over from the aerator into the waste air vent line and condensation may occur. Both the intake air line and waste air discharge line need to be sloped to allow for draining to occur.

## **FOR MORE INFORMATION**

For more information about the health effects of radon, call the U.S. Environmental Protection Agency at (888) 372-7341 or visit the EPA website at [www.epa.gov/radon/](http://www.epa.gov/radon/).

For more information on radon in water, contact the Drinking Water and Groundwater Bureau at (603) 271-2513 or [dwgbinfo@des.nh.gov](mailto:dwgbinfo@des.nh.gov), or visit

<http://des.nh.gov/organization/divisions/water/dwgb/index.htm>. All of the bureau's fact sheets are available at: <http://des.nh.gov/organization/commissioner/pip/factsheets/dwgb/index.htm>.

Note: This fact sheet is accurate as of June 2012. Statutory or regulatory changes, or the availability of additional information after this date may render this information inaccurate or incomplete.