

## If Your Groundwater Becomes Contaminated...

► Switch to public drinking water supply or to bottled water for your primary source of drinking water. Keep in mind that while this will provide you with a clean water source, it will not clean up or make your groundwater any safer.

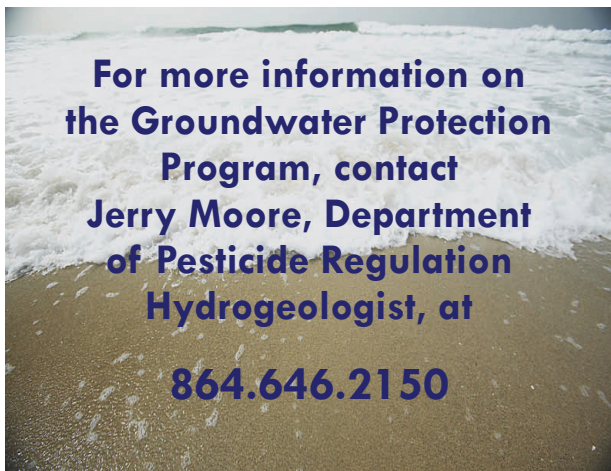
► If you must use groundwater that contains pesticide concentrations higher than the drinking water standard, install an activated carbon filter or a reverse osmosis filter on your supply water line. These types of filtration devices will remove some pesticides from water. Regular water filters may not remove pesticides. For more information about the type of filter you need, contact the Department of Pesticide Regulation, the Department of Health and Environmental Control, or your primary health care physician.

► Installing a new well further away from pesticide sources or drilling a deeper well will sometimes provide clean drinking water. Finding safe drinking water will depend on how large of an area has been contaminated and how fast the contamination is moving in the groundwater. You may not be able to find clean water on your property if the groundwater beneath the whole area is contaminated.

If you choose to have a new well installed, it must be done by a state licensed well driller. Make sure to install the well in an area where rainwater does not pond or stand. The well casings should extend at least 12 inches above the ground's surface to prevent rainwater runoff from leaking down the well. Well casings should be cemented into place according to state well installation standards. Wells should be completed with a concrete pad around the casing at the surface. The pad should be sloped so that rainwater will flow away from the well casing.

## Protecting Groundwater Now for Our Future

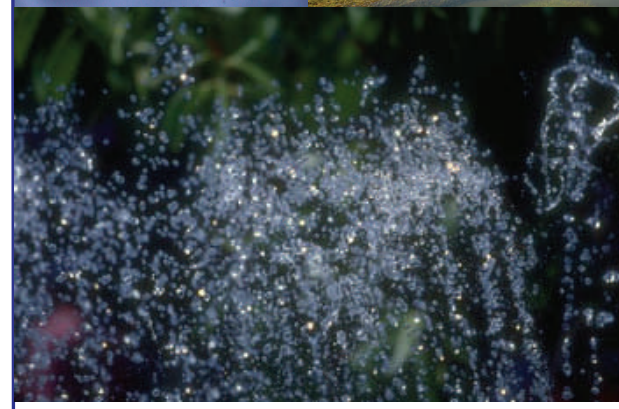
Traditionally, farmers and other pesticide applicators have been good stewards of our nation's water resources. However, pollutant discharges from point sources (those coming from pipes or spills) and non-point sources (such as pesticide leaching and runoff from agricultural fields) have put our water supply at risk in some areas. It is imperative that we preserve this resource so that future generations will have a clean source of drinking water. With nearly 90 percent of the rural population in South Carolina dependent on well water for drinking water, groundwater is a precious natural resource that cannot be taken for granted.



**Clemson University  
Department of Pesticide Regulation  
511 Westinghouse Road  
Pendleton, SC 29670  
Phone: 864.646.2150  
Fax: 864.646.2179  
<http://dpr.clemson.edu>**

# Groundwater Protection Program

## Department of Pesticide Regulation



**CLEMSON<sup>®</sup>**  
UNIVERSITY

511 Westinghouse Road  
Pendleton, SC 29670  
Phone: 864.646.2150 • Fax: 864.646.2179  
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# Groundwater Protection Program



***There's some good news for South Carolina...***

Advances in chemical detection technology have raised questions about the presence of agricultural chemicals in groundwater.

How safe is *our* state's well water in relation to agricultural chemicals?

To find out, the Department of Pesticide Regulation (DPR) conducted a statewide well water study. Water samples were collected and tested from over 1500 of the state's rural home and community wells to determine the extent of pesticide and nitrate contamination in well water. These well studies represent the most extensive evaluation of agricultural chemicals in groundwater ever undertaken in South Carolina.



## **Why Sample for Pesticides and Nitrates?**

Every state in the nation has been mandated by the Environmental Protection Agency (EPA) to develop groundwater protection and monitoring programs for pesticides and other agricultural chemicals. The Department of Pesticide Regulation at Clemson University is South Carolina's lead agency for enforcing the laws and regulations that govern the registration and use of pesticides. DPR began a groundwater sampling program in 1991 as the first phase in developing a groundwater protection plan for pesticides. The goal of the plan is to determine if pesticide and nitrate contamination of groundwater exists in South Carolina, and if it does, to take steps to prevent further contamination. To achieve this goal, our department collects 150 to 200 samples each year to increase our coverage of the state's groundwater resources.

## **The South Carolina Survey of Pesticides in Drinking Water**

Spanning over a decade, the South Carolina Survey of Pesticides in Drinking Water has obtained information about each tested well's condition and characteristics as well as nearby use of pesticides and fertilizers. Water from golf courses, nurseries, farms, and rural domestic wells was tested. In most cases, these tests can detect the presence of pesticides at many times *lower* than the lifetime safe consumption levels determined by the Environmental Protection Agency (EPA).

From this study, DPR estimates that only about 3 percent of wells tested contain any traces of pesticides. Most importantly, our department estimates

that less than one percent of all wells tested in the state contain pesticide levels exceeding the EPA standards for safe drinking water. In addition, about 52 percent of South Carolina's rural domestic wells have measurable traces of nitrates. However, only about three percent of the wells tested have nitrate levels that might pose a risk to human health. Nitrates in groundwater come from both natural and artificial sources. Presently, it is very difficult to distinguish one source from another.

As part of the study, DPR established Preventative Action Levels (PALS) for nitrate and the 22 pesticides tested as part of the groundwater program. PALS are contamination levels at which DPR has concluded that the well owner or responsible parties should modify their fertilizer or pesticide use practices to ensure that the chemical concentration does not exceed the EPA Maximum Contaminate Level (MCL). The MCL is the chemical concentration level at which water is considered unsafe for human consumption. For pesticides and nitrates, PALS are established at 30 percent of the MCL or at the laboratory detection limit for the pesticide (if 30 percent of the MCL is lower than the laboratory's detection limit).

The result of this ongoing study has been the establishment of a statewide database for pesticide concentrations in groundwater. From this, we are able to identify pesticides that may leach into groundwater during normal use. DPR has the ability to identify areas of the state where pesticide use practices need to be modified because of natural groundwater vulnerability.