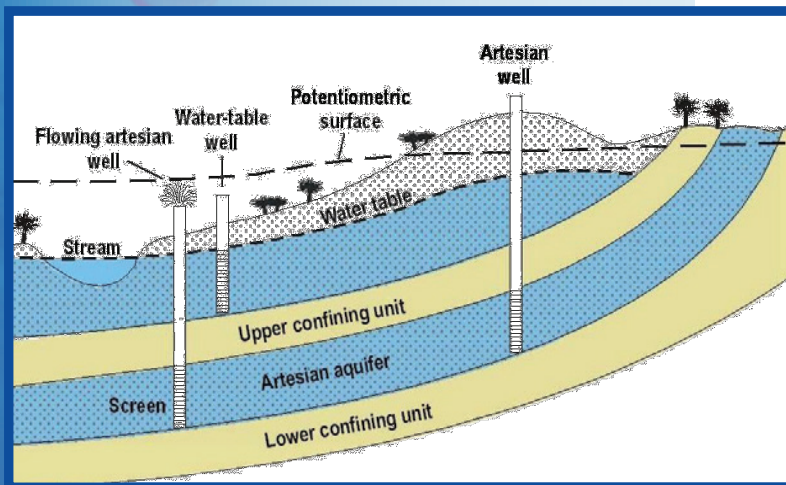


# DRINKING WATER PROTECTION BEGINS WITH AQUIFERS

Did you know that Louisiana receives an average of 62 inches of rain each year? Imagine if all the water that fell onto Louisiana in a single year stayed right where it landed. We would be wading through water higher than our shoulders! Fortunately, the precipitation runs into lakes, streams, bayous, rivers, or into underground layers of the earth called aquifers. Aquifers are underground formations of sand and gravel that contain water known as ground water. There are two basic types of aquifers—confined and unconfined. Confined aquifers are bound above and below by relatively impermeable formations such as clay that restrict water movement into or out of the aquifer. Unconfined aquifers occur near the land surface and are not bound by impermeable formations. The water table usually forms the upper boundary of unconfined aquifers.

The water that flows through aquifers contains very little bacteria and is naturally filtered by passing through underground sand layers. Since the water is naturally filtered, it requires very little treatment and is typically an excellent source of clean drinking water. Two-thirds of Louisiana's residents depend on ground water for their drinking water and it is important to take steps to protect this valuable resource.

To use ground water as drinking water, wells are drilled into the aquifer and the water is pumped out of the ground and into treatment and distribution systems. Wells drilled into confined aquifers are known as "artesian wells" because the water level in the well rises above the top of the aquifer due to pressure. A flowing artesian well occurs if the water level in the well rises above the land surface. Aquifers are refilled or "recharged" by precipitation seeping into the ground from the land above. The land may be covered with soil and trees or with marshes and swamps, which absorb and store water that later slowly drains into aquifers. It may take hundreds of years for water to enter the recharge areas and flow through the aquifers.



The quantity of water in the aquifer is affected by precipitation levels and activities in the recharge areas. When precipitation levels are low, as during droughts, the water level in an aquifer may drop, reducing the amount of water available to everyone, including those who use it for drinking water. Less water may also reach the aquifer if parking lots, highways and other development replace the natural land surface in recharge areas. There isn't much you can do to ensure adequate precipitation for recharging aquifers. However developers can utilize technologies that minimize impervious areas, allowing more water to reach the aquifers through the recharge areas.

Not only is it important to safeguard the quantity of water in aquifers, but also the quality of water. Ground water may become contaminated from a variety of sources including leaking storage tanks, whether above or underground. Some

common household products that we use contain ingredients that could also potentially harm aquifers. When these household chemicals are used or disposed of improperly, they could enter and contaminate an aquifer. These products include: gasoline, antifreeze, paint, paint thinner, drain cleaners, motor oil, and pesticides.

It is much easier to prevent contamination than to clean it up once it has occurred. Some tips to help prevent contamination of your ground water include using cleaning products that will not harm the environment, following directions for proper use and disposal of pesticides and other harmful products, and recycling used oil. Taking these steps will help ensure your community has a clean supply of ground water for everyone.



A MESSAGE FROM THE LOUISIANA DEPARTMENT OF ENVIRONMENTAL QUALITY'S DRINKING WATER PROTECTION TEAM

**"PROTECT YOUR WATER ONE DROP AT A TIME"**