NATURAL RESOURCES DIVISION

ARKANSAS DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES DIVISION

PROPER CARE OF UNUSED WELLS

Arkansas Water Well Construction Commission
101 East Capitol, Suite 350
Little Rock, AR 72201
(501) 682-3900 Fax: (501) 682-3991

ABANDONED WELLS

WHAT IS AN UNUSED WATER WELL-AND WHY IS IT A PROBLEM?

A well that is not in use-or sometimes referred to as an "abandoned" well - can be a potential threat to health, safety and the environment. Wells that are no longer used may be buried or forgotten. Often they have not been sealed properly. Sealing is the process of clearing an unused well of debris and filling the well with a special material called grout. Owners may seal their own well; however, the Commission strongly recommends that the sealing be done by a licensed well contractor. Unused wells that have not been properly sealed can be a source of ground water contamination, potentially affecting nearby drinking water wells. They may threaten the quality of the water in city water wells; your neighbor's well, or even your own well. Over 175,000 families in Arkansas get their source of drinking water from ground water obtained from privately owned wells. Over 400 public water supply systems utilize ground water as a primary supply of water and thousands of others utilize ground water for hotels, restaurants, schools, churches, and industrial applications.

As a well ages, the casing may rust, joints may leak, the pump may become stuck in the well, or the well may fill with debris. If the well is covered with loose boards or concrete, the cover may eventually decay or break open. Surface water runoff, debris and other contaminants can then enter the well.

A well may be taken out of service for a variety of reasons. It may no longer provide enough water. It may not have been repaired when it needed to be. It may have become contaminated. A well may be "lost" or abandoned when property changes hands, or when use of the land changes from agricultural to industrial or residential. Old, unused wells are easily forgotten.

HOW DO UNUSED WELLS THREATEN THE GROUND WATER?

Ground water is found in underground geologic formations called aquifers. Ordinarily the layers of rock and soil that lie between an aquifer and the surface, or between aquifers, can act as a natural barrier against the spread of contamination. However, an unused, unsealed well can provide an open channel between the surface and an aquifer or between a shallow aquifer and a deeper aquifer. An unused well can act as a drain, allowing surface water runoff, contaminated water, or improperly disposed waste to reach an uncontaminated aquifer.

DO UNUSED WELLS POSE ANY OTHER PROBLEMS?

If unsealed large diameter wells (wells 6 inches in diameter or larger) are not covered or otherwise protected, the open well hole can be a safety hazard for children or small animals.

WHAT DOES THE LAW REQUIRE?

By law, open holes, mine shafts, wells, pits, and other hazards must be protected to prevent persons or property from injury. Water wells deemed to be abandoned must be plugged. Abandoned Water Well means a well whose use has been permanently discontinued. Any well shall be deemed abandoned which is in such a state of disrepair that continued use for the purpose of obtaining ground water is impractical.

HOW CAN I FIND OUT IF I HAVE A WELL ON MY PROPERTY THAT IS NOT IN USE AND NOT SEALED?

Whether you live in the country or in town, you could have one or more wells on your property which are not in use and not sealed. If you live in town, there may be one or more wells that were used before the city water became available, or a well that was used for watering lawns and gardens. If you live in the country, wells may have served current or former houses and barns.

To locate old wells, it may help to:

- Find out when your home was built and when public water was available in your area. If the house was built before public water was available, then there likely was a well on your property.
- Look for any physical evidence of a well on your property, the location of the water lines inside the basement; a small room, often in the basement, that may have housed a well; a small building located away from the house; a windmill or water pump; or, a depression in the yard.

- Consult former property owners of your property, or people who have lived in the area a long time. They may remember the locations of old wells.
- Ask well drillers about old wells that they may have constructed or repaired.
- Look at old photos of your property; they may show windmills, houses, barns or out-buildings where a well may have been located.
- Consult city and county records or building and land use permits.
- Consult city and county historical documents; they may also provide information about development and land use.
- Look at old fire insurance drawings, often available at local historical societies; they may also record the location of wells.
- Contact us or the Geological Commission for Water Well Construction reports. Water Well Construction reports are filed with the AR Water Well Construction Commission by Contractors name and the year the well was constructed. The Geological Commission files their copy of the construction reports by location. You will need to provide your section, township, and range. Any additional information would be helpful.
- Wells are located on septic tank permits. Check with your county sanitarian at the county health unit. He will locate it by homeowner, name of subdivision, or the original property owner.

WHAT DOES A WELL LOOK LIKE?

You can often see the casing of an unused well sticking up out of the ground. Look for a metal pipe typically from 1 1/4" to 6" in diameter. Wells that were dug rather than drilled may appear as a ring made from concrete, tile, bricks or rocks in ground or pit. The ring could be anywhere from 12" to 36" in diameter, or even larger. [Caution] Some wells may appear to be small at the surface, but are actually several feet in diameter under the ground surface. Use extreme care around old wells and never climb down into an old well. Gases found beneath the earth in Arkansas are deadly.

A windmill, an old shed that was used as a well house or an old pump may mark the location of a well. A metal or concrete cover or manhole may mark the location of a well pit. A depression in the ground may indicate a buried well, and a wet area may be caused by a flowing well that hasn't been sealed.

If you had a well in your home, a pipe sticking up out of the floor - possibly stuffed with rags -could be a well casing. Wells were often housed in a basement offset, a small room attached to the basement often located under exterior concrete steps. Many old houses in Arkansas have wells underneath the house or under the back porch.

HOW ARE WELLS SEALED?

Don't try to do it yourself. You may be liable for the cost of removing any sealing materials you may have used.

A licensed well contractor will have the necessary equipment and expertise to seal your well properly. The contractor can also handle all of the necessary paperwork. To find a contractor, look in the Yellow Pages under Well Drilling and Service. The Arkansas Water Well Construction Commission also has a list of licensed contractors.

Before sealing the well, the contractor will remove any pumping equipment that may still be in place and remove any debris or other obstructions from the well. The well is then sealed by pumping a grout mixture into the well.

When the job is done, the contractor will submit a record to the AWWCC. You will also get a copy of the well sealing record from the licensed well contractor. Keep it in a safe place. It provides proof that the well has been properly sealed, and no longer poses a hazard.

The job is completed when:

- The physical hazard is eliminated.
- Ground water contamination is prevented.
- Yield conservation and the hydrostatic head of the aquifer is maintained.
- Intermingling of desirable and undesirable water is prevented.

HOW MUCH DOES IT COST?

The cost of sealing a well can vary considerably. For shallow, small diameter wells - like those found at many homes and lake cabins - the cost may range from $100 to $400. Deep, large diameter wells like those used by city water supply systems cost much more to seal. Things like access to the well, special geological conditions, debris in the well, depth, and diameter will affect the cost of well sealing.

If a contractor is already on the site drilling a new well, the cost of sealing an old well is often considerably less. Citizen groups government agencies and other organizations may be able to negotiate a lower price, if they arrange to have a number of old wells in the community sealed at the same time.

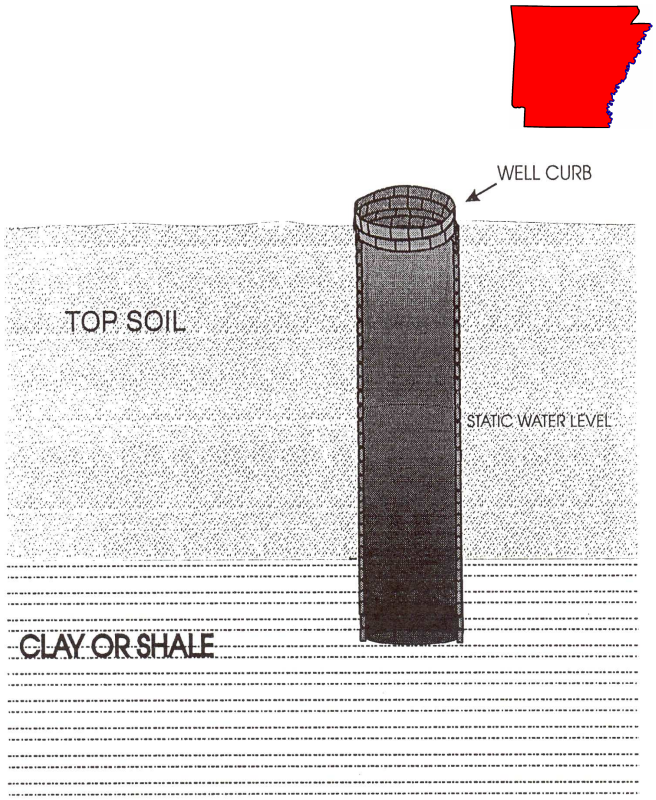
Whatever the cost, protecting the quality of the ground water in your community is a worthwhile investment.

WHAT IF I HAVE AN OLD WELL ON MY PROPERTY AND I ONLY USE IT FOR WATERING MY YARD OR GARDEN - DO I HAVE TO SEAL IT?

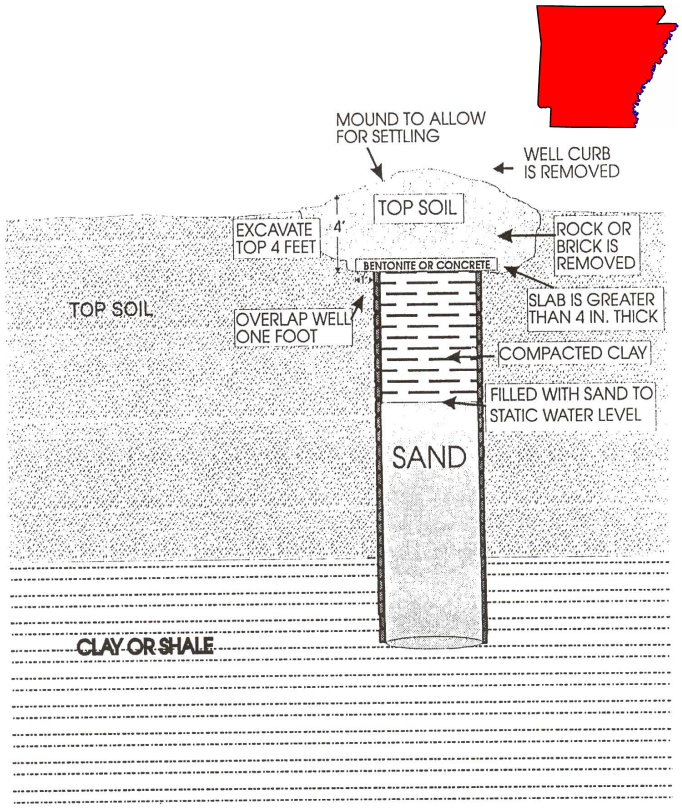
Arkansas Statutes do not require a well which is in use to be sealed unless it is causing, or has the potential to cause a health problem or contamination of the water source. Your well is considered to be "in use" if you use it on a regular basis.

EXAMPLES OF THE DIFFERENT TYPES OF WELLS
BEFORE AND AFTER BEING PLUGGED

DUG WELL
BEFORE PLUGGING

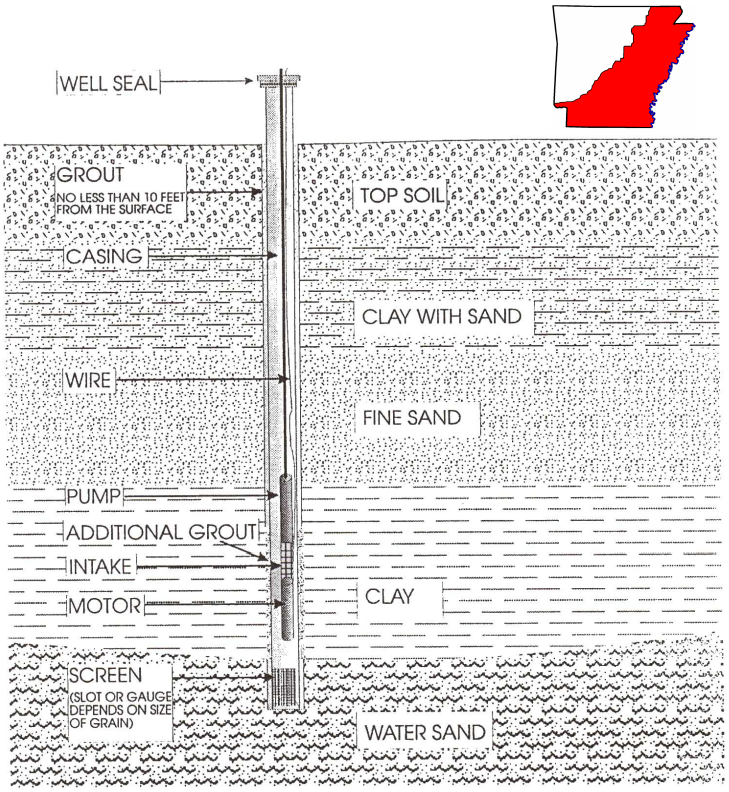


DUG WELL
AFTER PLUGGING



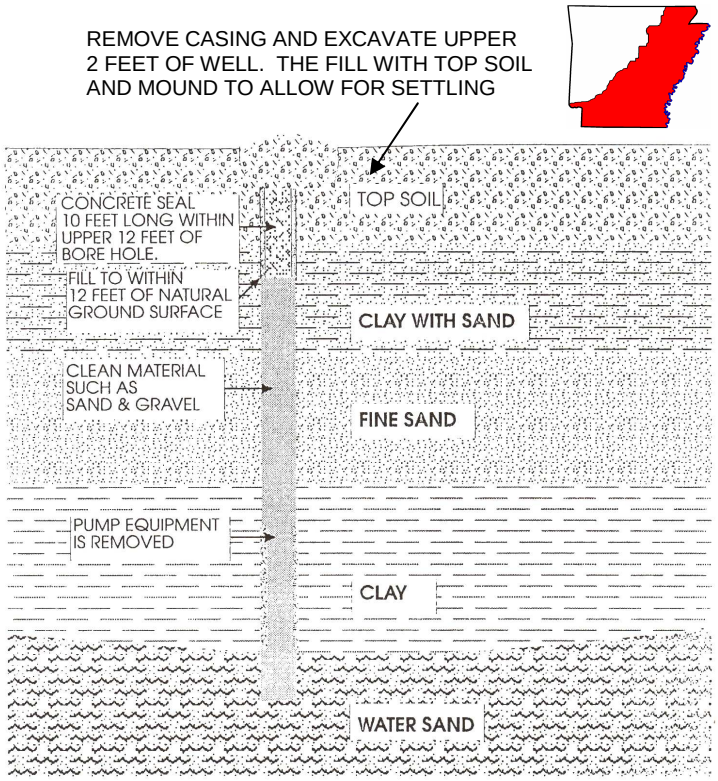
DRILLED WELL
UNCONSOLIDATED AQUIFER

BEFORE PLUGGING



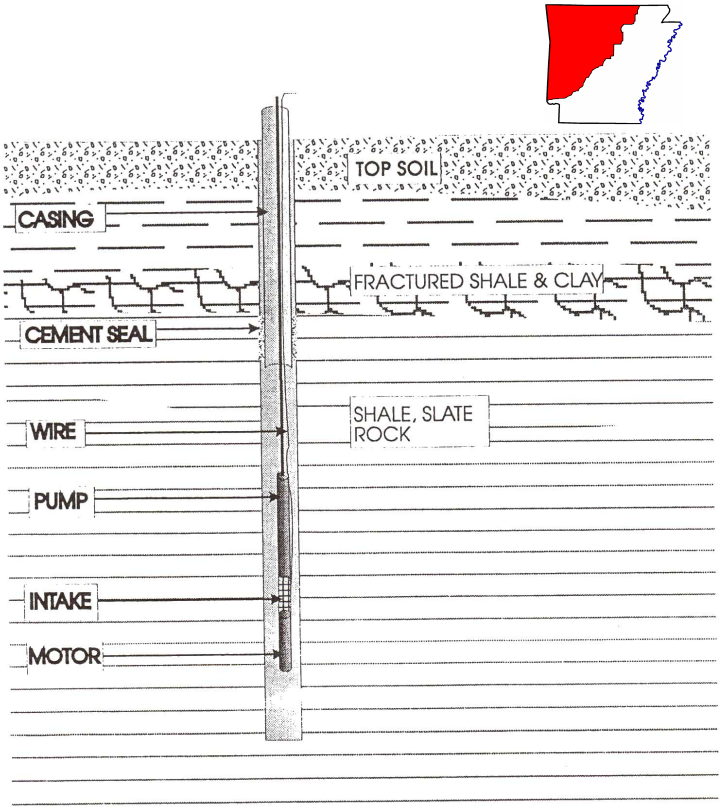
DRILLED WELL
UNCONSOLIDATED AQUIFER

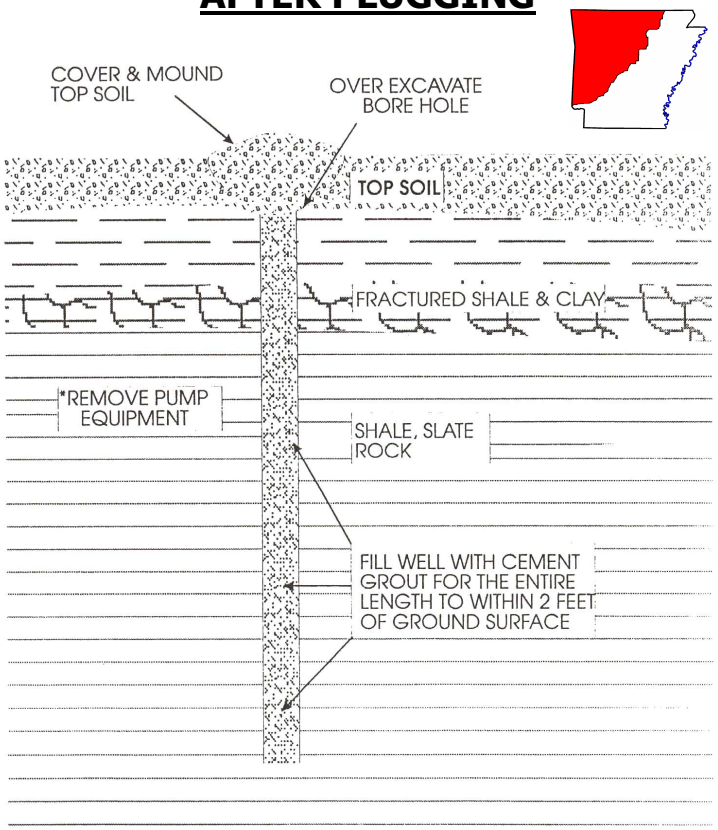
AFTER PLUGGING



DRILLED WELL
CONSOLIDATED AQUIFER

BEFORE PLUGGING



DRILLED WELL
CONSOLIDATED AQUIFER

AFTER PLUGGING