
ENVIRONMENTAL Fact Sheet



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Decommissioning Inactive Wells

New Hampshire regulations require wells that are no longer in use to be properly maintained or be decommissioned (filled-in) by a licensed contractor in an appropriate manner to prevent the entry of contaminants into the groundwater. The responsibility for maintaining a well or decommissioning a well, lies with the well owner. Wells are expensive commodities and are generally an asset to the property even if they are not currently in use as long as they are properly maintained. If it is decided that a well will be of use and will be a water supply at some point, the well is **considered active and must be properly maintained**. If it is decided that a well has no useful purpose, has no potential future use or has no real value and may constitute a liability, then it should be **considered inactive and must be properly decommissioned**. State law requires that the decommissioning, also known as sealing, wells is performed by a licensed New Hampshire water well contractor. Licensed water well contractors have the necessary equipment and experience to complete the job safely and properly.

There are very good reasons for well owners to make sure inactive or abandoned wells on their property are properly decommissioned.

- Improperly abandoned wells threaten drinking water supplies by providing open conduits into aquifers.
- If a drinking water well is being replaced because of water quality problems in the original well, the abandoned well is a direct threat to the new water supply if it is not properly sealed.
- Improperly abandoned wells can create a liability problem at the time of property resale or if the well causes contamination in neighboring wells.
- Shallow dug wells create a physical hazard simply because of their large diameter and the potential for animals or people to fall into them. Typically, the older fieldstone-lined wells are the most dangerous because many were finished flush to the ground surface and were covered with wooden covers, which are now decayed or non-existent.

The following state laws are relevant to decommissioning of inactive or abandoned wells:

- RSA 482-B:15 Maintenance and Repair of Wells and Pumps (Chapter 482-B New Hampshire Water Well Board) and associated Administrative Rules We 603 Well Maintenance and We 604 Abandonment of Wells.
- RSA 485:37 Fencing or Covering and RSA 485:38 Nuisance (Chapter 485 New Hampshire Safe Drinking Water Act).

ACTIVE WELL MAINTENANCE PROCEDURES

Active wells must be properly maintained; maintenance is the responsibility of the well owner. The following is guidance of how to maintain a well, in terms of proper caps and covers.

- Ensure that the well casing and cover are above the land surface (at least 8-inches for private wells) where it is protected from flooding. If the top of the well is below the ground surface, the owner should have the well raised above grade by a licensed water well contractor or pump installer.
- Wells with a casing inside diameter of 4-12 inches must be fitted with a well cover that has a screened vent and is sealed (o-ring or gasket) so that contaminants (including unwanted rodents and insects) cannot enter the well accidentally. Electrical conduits that have pulled away from the well cover should be securely and mechanically attached to the well cover.
- Wells with a casing inside diameter less than 4 inches must be fitted with a secure cap or plug.
- Dug wells should have a concrete cover that is difficult to remove by virtue of its weight to prevent children or unauthorized persons from gaining access to the well. If a well is enclosed by a locked building/structure, covers other than concrete are permitted.

INACTIVE WELL DECOMMISSIONING PROCEDURES

The proper well sealing method depends on the construction of wells being decommissioned and if there is known groundwater contamination. Prior to decommissioning, remove all pump system equipment and any obstructions that may interfere with the sealing process.

- **A bedrock well with no known contamination** issues shall be filled in with clean ½ diameter crushed stone, and incorporate 4-foot impervious seal (bentonite chips, cement, grout) every 100 feet. The upper 20 feet must be filled in with grout to where the casing is cut just below ground surface.
- **Drilled or wash wells penetrating unconsolidated materials or shallow fractured bedrock with no known contamination** should be sealed by filling the screened area and the well casing with sand, gravel washed stone or cement up to 15 feet below grade. The upper 15 feet must be filled in with grout to where the casing is cut just below ground surface.
- **Drilled wells that have been contaminated** due to a construction deficiency or continue to cause an environmental hazard should be sealed by the pressure grout method. This is done with a conductor pipe, called a tremie pipe, starting at the bottom of the well and slowly raising the conductor pipe toward the top of the well at a rate no faster than the grout material fills and displaces water from the well. The grout mixture used should be a Portland cement mixed with 2 percent to 10 percent high solids bentonite clay according to the correct water-to-cement ratio. Commercially available premixed bentonite grout designed for sealing wells may also be used.
- **Point wells** or other wells constructed in unconsolidated materials that are 2-inches in diameter or less can be decommissioned by trying to remove the casing from the ground or by filling the well screen and casing with bentonite and cutting the well casing off below grade.
- **Dug wells** should be filled and sealed using clean material that is free of organic matter and is like the natural surrounding materials. Often, locally available fill materials are adequate to complete the job. This material is put into the well up to 2-4 feet below ground surface. The upper 2-4 feet should be filled with impervious material such as clay or hardpan and slightly mounded to promote surface water runoff to flow away from the filled excavation.
- **Monitoring wells** shall be decommissioned based on site specific hydrogeologic and contaminant conditions and site use. Some monitoring wells can be decommissioned by trying to remove the casing from the ground or by filling the well screen and casing with bentonite and cutting the well casing off below grade.

MATERIALS TO SAFELY SEAL A WELL

There are a variety of acceptable grout and fill materials used for sealing wells.

- **Portland cement**, otherwise known as neat cement, mixed with five to six gallons of clean water per 94-pound bag.
- **Cement-Bentonite** grout is a mixture of Portland cement with 2 percent to 10 percent bentonite clay mixed according to the proper water-to-cement ratio depending on the percent by weight of bentonite added. This sealant is the recommended material to use when decommissioning a contaminated well because, unlike neat cement that shrinks and can crack upon curing, cement-bentonite grout swells and remains plastic when cured creating a superior seal.
- **Bentonite chips** can be used for filling and sealing wells or portions of wells by applying directly into the well through the top at a rate no greater than three minutes per bag. When hydrated, bentonite chips will swell up to 12 to 13 times their dry volume and effectively seal the well. If the chips are applied at a rate greater than three minutes per bag, bridging can occur within the well and the well will not be filled.

Any well abandonment must be performed by a licensed water well contractors. Homeowners can abandon wells on their own properties, but it must be performed by their own hands and the Water Well Board rules must be followed. An Abandoned Well Registration Report is required to be filed with the Water Well Board within 90 days after a well has been decommissioned.

For More Information

Please contact the Drinking Water and Groundwater Bureau at (603) 271-2513 or dwgbinfo@des.nh.gov or visit our website at www.des.nh.gov.

Note: This fact sheet is accurate as of September 2019. Statutory or regulatory changes or the availability of additional information after this date may render this information inaccurate or incomplete.