IOWA DEPARTMENT OF NATURAL RESOURCES

Iowa Private Well Program

Protecting your private well

Environmental Services Division | www.iowadnr.gov

If you own a private well, you have the responsibility to maintain the well in good condition and keep it operating properly so it provides you with water that is safe to drink. Many well problems can be reduced or eliminated by timely well inspection and maintenance. In the long run, preventive maintenance often saves more money than overlooking potential problems. With most of a well below the surface, well owners can only inspect above ground, focusing on these common well inspection points to ensure the protection of the well and drinking water.

Protection starts at the wellhead

Inspect the well cap. A well cap keeps things out of the well. A poorly designed or defective cap, or one with missing parts, allows insects, rodents and debris to enter the well and contaminate your water. The cap should include all necessary parts and gaskets to fit snugly and should seal the wellhead. Every well cap should also have a screened well vent.

Examples of wells that should be plugged.

Pump wiring and conduit. All well wiring should be encased in a conduit to prevent damage. Exposed wires present a shock hazard and can cause your well pump to fail. Seal all conduits to keep insects and moisture out.

Visible well casing. The final well casing height should be at least 1 foot above the surrounding grade. The casing should not show signs of cracks, scaling or other damage. Landscaping around the well should allow access for service.

Grade around the well. Soil around the well casing should not form a depression or hold water. Land should gently slope away from the well to allow rainwater to flow away.

Bump protection. Wells located near traffic areas need bump protection around the well. Farming operations, vehicle traffic and pushing snow damage wells each year.

Storage nearby the well. Never pile snow or other materials around your well, as it can damage the casing and make the well difficult to service the well if it needs repair.

Chemical storage, mixing and application. Never store, mix or apply chemicals near the well. What you place on the ground can end up in your water supply.

The pressure tank. Keep the well's pressure tank clean, accessible and leak-free. Maintaining a proper air charge in the tank ensures the pumping system cycles properly and prevents waterlogging the pressure tank. Have a smooth bibbed water test faucet positioned at least 12 inches above the floor for testing well water. Pressure tank piping should include a working pressure gauge and a pressure relief valve.

Protection near the well

Properly plug all unneeded and abandoned wells. Wells that are no longer needed can be a safety hazard to your family and pets, and also to the well you currently use. These wells create extra vertical pathways for contaminants to easily move deeper into the ground and impact your current well. Grant funds, available in most counties, can help reduce the cost of plugging private wells. Contact your county environmental health specialist for more information.

Maintain separation distances. Always keep potential sources of contamination far away from your well. (Find a chart of separation distances on the next page.)

Properly dispose potential contaminants. Be conscientious in how you handle, use and dispose chemicals around water resources. Properly dispose contaminants like fuel; antifreeze; motor oil; solvents and cleaners; lawn, garden and farm fertilizers and pesticides; and household chemicals. Dumped materials can enter your water and you'll drink them.

Know your well

Knowing the well's age can tell you a lot about your well's protections. Newer wells generally have better protections than wells installed before 1983. All well owners should have or request a copy of the well's construction log. Having this information will be helpful if you have well problems. At a minimum, you should know your well's age, depth, water levels, pump setting and basic construction features.

Monitor the well

Obvious changes in water clarity, color or odor, or sediment in the water, can indicate a problem. However, because not all contaminants discolor water or give it an odor, you should test your well water at least once a year to ensure it's safe to drink. It's best to test the water in the wet seasons of spring or fall, and especially after a major rain event. Extra rain can stress well casings and shallow wells and create runoff that flows into shallow bedrock aquifers, all of which can adversely affect water quality.

If your annual water analysis indicates any contaminants in your well's water, take note of the level. Levels near the maximum contamination limit mean you should test your water more often to ensure it continues to be safe. If testing finds your water is unsafe, do not drink the water. Obtain your water from a known safe source, like a well recently proven safe by water testing, a public water supply, bottled water, or install and maintain an approved water treatment device capable of treating all of your consumable water.

Your local county environmental health specialist can arrange to take your water samples, or contact a state-certified drinking water lab to obtain sample bottles and sample the water yourself. Please see the Iowa DNR fact sheet titled "Private Well Sampling and Testing" for more information.

A modern conforming well

Source of contamination	Minimum distance in feet	
	Deep well	Shallow well
Sink holes	1,000	1,000
Earthen manure storage basin	1,000	1,000
Formed manure structures	100	200
Livestock lots or buildings	100	200
Chemical prep and storage areas	100	200
Auto and farm shop activities	100	200
Old or abandoned wells	100	100
Septic tanks	50	50
Septic absorption fields	100	200
Fuel storage tanks	100	100
Farm row crop activities	100	200
Ditches, streams, ponds, lakes	25	25
Yard hydrant	10	10
Property lines	4	4

Locate private wells at these distances from potential sources of groundwater protection.

Find a well contractor

Heavy parts within the well can cause injury, and electrical well components create electrocution hazards. While Iowa law allows you to work on your own well as long as you follow state and local well rules, it is not recommended unless you have the proper experience and tools. Doing the work incorrectly can create a larger hazard. The Iowa DNR recommends hiring a certified well contractor.

All well contractors are required to be certified by the Iowa DNR and the certified individual must be on-site any time well services are being performed. You should never base your decision on who you hire only on the lowest price. Ask for local references on similar work. Hire contractors that use construction standards higher than minimum required standards. This helps provide you with a water supply that will operate properly and supply you with clean, safe water. You can find certified well contractors in your local phone directory under "Water Well Drilling & Service" or go to www.iowadnr.gov and search "well contractor."

Look for sources of contamination

If you suspect groundwater contamination from local land-based activities (like agricultural drainage wells, French drains, or channels built to drain sinkholes), contact the Iowa DNR or the U.S. Environmental Protection Agency for guidance. For additional information on private wells in Iowa, go to www.iowadnr.gov/privatewells.

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www.iowadnr.gov/privatewells