



Water Well Protection on Farm

TN642

DEFINITION

A water well is constructed as an opening into an aquifer to provide general water needs for a farming or ranching operation. Proper water well protection involves the protection of wells already installed and the prevention of problems in wells that are being planned.

GENERAL WELL PROTECTION

All on-farm wells should be properly sited and protected to ensure there is no water contamination of either the well or the aquifer.

Wells should be located a safe distance from any potential source of contamination, hazardous products should not be stored near a well, and high-risk activities should be kept a safe distance from any well.

Any type of manure storage or animal confinement facility should be located a proper distance from any well. Also, the land application of manure and fertilizers should be kept a safe distance from wells. An NRCS technician can help identify state-required setbacks or recommended setbacks.

Surface runoff and drainage water can enter the top of a well, causing significant contamination; therefore, runoff should always be diverted away from all wells.

Install a well cap or sanitary seal to prevent unauthorized use and entry of contaminated water or live critters into the well.

Avoid mixing or using pesticides, fertilizers, fuels, and other potential chemical pollutants near the well.

Check valves can be used to prevent the back flow of contaminated water or hazardous products directly into a well.

Never dispose of wastes or other potential pollutants in a dry or abandoned well.

PLANNING NEW WELLS

When a new well is properly sited, constructed, and initially decontaminated; and when the potential sources of pollution near the well are eliminated; the quality of water delivered to the user should remain free from contamination.

New wells should be located the proper distance from manure storage areas, animal confinement facilities, and manure application sites. In addition, wells should always be located at least 100 ft from and upslope of any septic tank or its leach field.





Water Well Protection on Farm

TN642

If practicable, wells should be located on higher ground and upgradient from potential sources of contamination or flooding. New wells should be located a safe distance from both overhead and underground utility lines.

A detailed geologic investigation should be performed for wells planned in a limestone aquifer which contain underground channels.

NEW WELL CONSTRUCTION

Always hire a certified well driller for any new well construction or modification.

A well casing needs to be installed in new wells to seal out undesirable surface or shallow groundwater and to support the side of the borehole from collapse of unstable earth materials. The casing extends from at least 1 ft above the ground surface to at least 2 ft into stable material or to the top of the screen.

OPERATION AND MAINTENANCE

Some wells may require special provisions by the well driller so the aquifer will provide the flow desired. The well construction records should be kept on file by the landowner. The well owner should periodically inspect exposed parts of the well for problems such as:

- Damaged well casing,
- Broken or missing well cap, and
- Settling and cracking of surface seals.

Disinfect drinking water wells at least once per year. Have the well tested once a year for coliform bacteria, nitrates, and other constituents of concern. (Contact the Department of Public Health for guidance on disinfecting a well and well water testing.)

REFERENCES

NRCS TN Conservation Practice Standard
Water Well, Code 642

February 2006

The United States Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, and national origin, gender, religion, age, disability, political beliefs, sexual orientation, and marital or family status. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact the USDA's TARGET Center at (202) 720-2600 (voice and TDD).

To file a complaint of discrimination, write the USDA, Director, Office of Civil Rights, Room 326W, Whitten Building, 14th and Independence Avenue, SW, Washington, D.C. 20250-9410 or call (202) 720-5964 (voice or TDD). USDA is an equal opportunity provider and employer.