

Assessing Your Livestock and Poultry Operations

Protecting Your Water Quality Through a Farm & Home Assessment



Why should you be concerned?

Livestock and poultry operations on your property can generate large amounts of manure. This manure can serve as a valuable resource. However, when improperly managed, nutrients, bacteria, and other microorganisms can contaminate your drinking water supply. When livestock manure is concentrated, as it is in barnyards, holding areas, and feedlots, the risk of polluting surface and groundwaters often increases.

Improper application of manure to fields will also increase the risks to both surface and ground water.

What can you do?

This chapter has been designed to provide information to questions you have answered **Yes, or do not know** the answer to in the **Assessing Your Livestock and Poultry Operations** section of your "Farm and Home Water Quality Assessment." This chapter will help you develop an Action Plan to establish practices that reduce the risks of contamination to your drinking water supply.

A Partnership Program for Voluntary Pollution Prevention

USDA Natural Resources
Conservation Service

USDA Cooperative State Research,
Education and Extension Service

USEnvironmental
Protection Agency

1 Do you have livestock and/or poultry on your property?

Livestock and poultry operations can impact water quality. Proper use of manures as a nutrient source can reduce fertilizer purchases, improve soil quality, and reduce pollution risks. Ground and surface waters can be polluted if too much manure is applied or if the nutrients available in manure are not counted in the crop's nutrient budget.

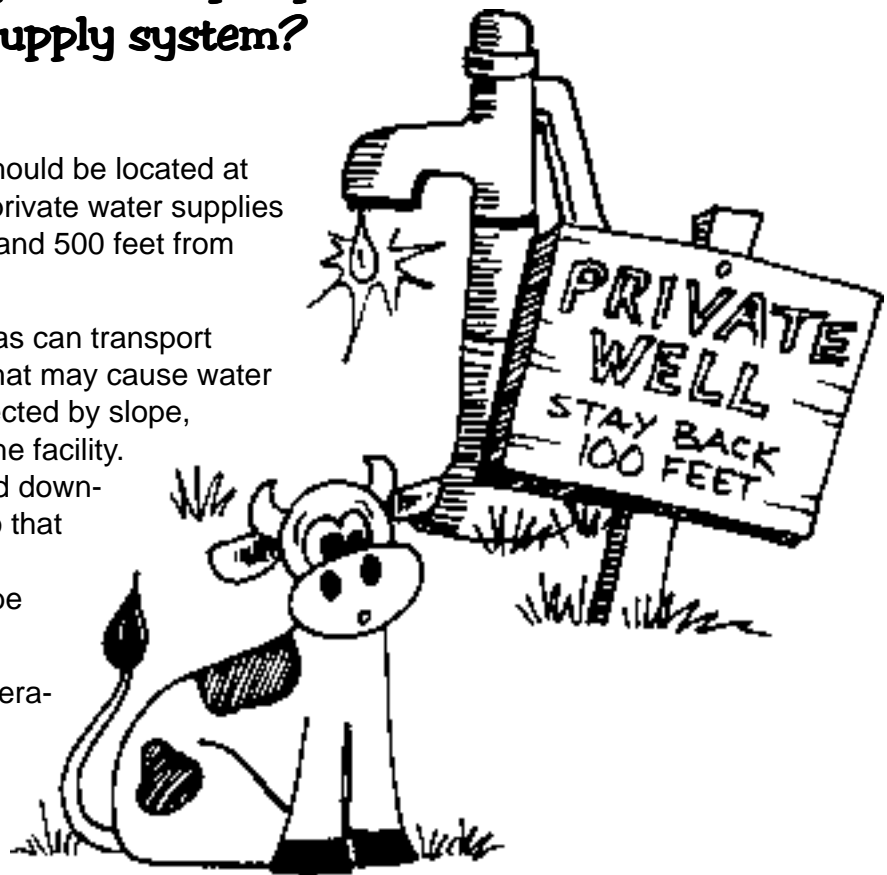
If you do not have a manure management plan for your livestock or poultry operation, contact your local Natural Resources Conservation Service, Conservation District or Extension Office.

2 Do you house livestock and/or poultry within 100 feet of a water supply (well, cistern, etc.), or is your livestock and/or poultry facility located upslope from a water supply system?

All livestock operations should be located at least 100 feet downhill from private water supplies (including abandoned wells) and 500 feet from public water supply systems.

Runoff from livestock areas can transport animal manure to locations that may cause water contamination. Runoff is affected by slope, rainfall and maintenance of the facility. Your facility should be located downhill from your water supply so that runoff will not drain toward it. Surface water runoff should be diverted around the facility.

If you have a livestock operation on your property you should be testing your water annually for bacteria and nitrate.



3 Do you store manure within 250 feet of a water supply system (well, cistern, etc.)?

Manure is generally stored in either liquid, semi-solid or solid forms. Each of these can be stored safely, but do require proper management to prevent water contamination. Contact local NRCS, Conservation District office, or local Extension office for information on proper storage practices.

Of particular concern are existing wells that can provide a direct path for contaminated surface water to reach the

groundwater. Long distances between manure storage sites and your water supply are the best preventive measure that can be taken. Avoid manure storage within 250 feet of your well.

Storage facilities should be designed to prevent unplanned off-site movement of manure. Reducing the volume of stored manure with regular use of stored manure helps to reduce pollution risks.

4 Do you stack or store manure on soil that has a coarse texture (such as sands or sandy soils), or that has a shallow bedrock, or high water tables within 10 feet of the surface?



Soil types are very important in determining whether a contaminant breaks down or leaches into ground water. Sandy or coarse textured soils allow manure and other contaminants to leach into the ground water.

Bedrock geology also influences ground water pollution. Soils that are over fractured bedrocksuch as limestone have a high potential to contaminate ground water. Sites that have high seasonal water tables present similar high risk to ground water pollution.

If you do not know the type of soil that you have, contact your local NRCS, Conservation District, or Extension Office.

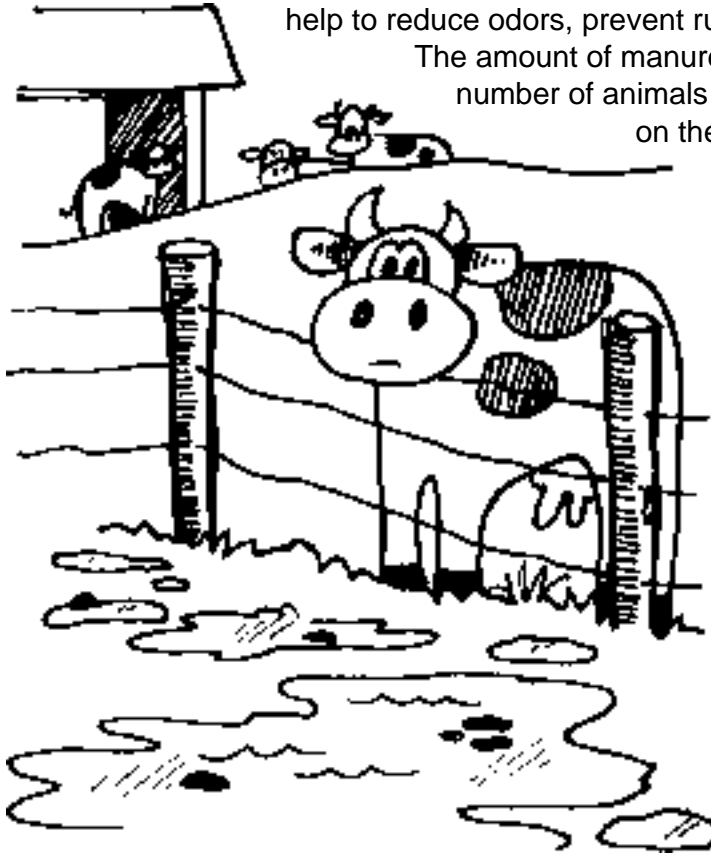
5 Do you wait more than a week before scraping or cleaning your yard?

You should clean your livestock yard on a regular basis. This will help to reduce odors, prevent run off pollution, and prevent disease.

The amount of manure on a livestock yard depends on the number of animals and the hours per day animals spend on the lot. You should clean and scrape

your livestock yard at least once a week. In some cases, you need to clean it on a daily basis.

You should also divert all clean water to prevent it from entering the yard area. Collect or contain all run-off from the yard. Consider cementing or paving all heavy use areas.



6 Do you spread manure on your fields, lawns, and gardens without considering the amount of nutrients in the manure?

Manure should be treated as a resource rather than a waste product. Store manure in an approved storage system until it can be used to provide nutrients for your crops. Credit nutrients from all manures in your nutrient management plan. Apply all manure with properly calibrated equipment. Maintain records of your manure applications.

7 Do you apply manure to fields when the ground is frozen, covered with snow, saturated with water, or within 100 feet from a water well, stream, pond, or sinkhole?

The timing of manure application is extremely important if conditions such as the type of soil or the depth to groundwater create an environmental hazard. Fall applications allow the most time for the manure to break down and make nutrients available for crop use. While this is generally beneficial, it can lead to water quality problems if conditions on the site make the leaching of nitrogen a concern. Fall applications of manure are generally not recommended for coarse-textured soils.

Applying manure in the spring allows less time for nitrogen to leach before it is used by the growing crop. However, spring application also leaves less time for the decomposition of the manure, which releases important nutrients for the crop, and generally delays fieldwork and contributes to soil compaction if heavy equipment is used for application.

Many producers apply manure in the winter. While it is likely that some nitrogen will be lost in run-off because of frozen or saturated ground, the extra time allowed for manure to break

down makes some nitrogen available for crop use. The potential for nutrient runoff during winter applications to frozen, sloping soils is high. If manure is applied to frozen soils and there is runoff from snowmelt or rain, contaminants in the manure will be carried with the runoff.

Manure applied within 100 feet of wells, streams, ponds, or sinkholes creates a hazardous situation. Manure applied to these areas can quickly contaminate surface or ground water. Planting a grass filter strip between these sensitive areas and your crop fields will help to reduce the risk to both ground and surface water.



8 Do you apply manure to fields without considering wind directions, temperature, moisture conditions, and neighbors?

Remember to be a good neighbor and apply manure when wind directions and other weather conditions are most favorable. If site conditions permit, consider incorporating all manure immediately after application.

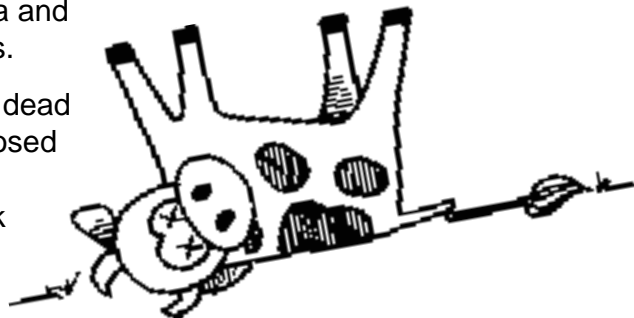
9 Are your buildings lacking adequate ventilation to prevent build up of odors?

Properly designed buildings with good ventilation will reduce odor and gas build up. Timely removal of excess manure and good ventilation should solve most of your odor and gas problems. Good ventilation is also important for both human and animal health.

10 Do you dispose of dead animals on your property?

Dead animal disposal on your property is a potential water pollution risk. Decomposing animals can be a concentrated source of nutrients, bacteria and other potentially harmful micro organisms.

Develop a plan for proper disposal of dead animals. Small animals can be best disposed of by composting. A rendering service is generally better for larger animals. Check your local and state laws before disposing of dead animals.



Assessing Your Livestock and Poultry Operations

If you answered "Yes" to the following questions.	What to do	Who to call	Other References	What you did
Question 1, 6, 7, 8	Develop a manure management plan that treats manure as a nutrient resource.	Your local Extension Service office, NRCS office, Conservation District office or crop consultant.		
Question 2	Test your water for nitrate and bacteria contamination. Move livestock area if possible.	Local health office or water quality agency.		
Question 3, 4	Use an approved storage system.	Your local Extension Service office, NRCS office, or Conservation District office.		
Question 5	Develop a run off control system or move the feed yard.	Your local Extension Service office, NRCS office, or Conservation District office.		
Question 9	Have your buildings checked for adequate ventilation.	Your local Extension Service office, or building contractor.		
Question 10	Develop a system for proper disposal of dead animals.	Your local Extension Service office, NRCS office, or Conservation District office.		

