

A farmer intentionally pumped manure on top of the fields when corn was tall, causing manure to flow onto the road, and into the roadside culvert. Manure should be applied in a controlled manner using a spreader.



1. Assure human safety.
 2. Stop the flow at the source.
 3. Contain and control existing spill.
 4. Notify the proper authorities quickly.
 5. Clean up the spill.
- It is recommended to have an emergency action plan in place which can be accessed quickly in the event of a spill.

Spill Response Guidelines:

In a manure spill or emergency situation it is your duty to protect both people and the environment.

Manure runoff from snow melting splashed on trees and mailboxes. This presents a very negative image for all of agriculture. It is not acceptable, and it's unlawful.



Early springtime spreading of manure. Snow melted and runoff occurred. Farmer faced penalties.



Manure runoff during late winter spreading, after snow melt occurred. Manure runoff into stormdrains is NOT an acceptable farming practice, and it's unlawful.



Remote, uphill pumping of manure from storage structure to spreading equipment. Some collapsible pipes cannot withstand the pressure, and can split. Split pipes potentially lead to manure pollution. Use higher pressure lines.



UNACCEPTABLE SPREADING PRACTICES



Apparently this is a reoccurring sinkhole, evidenced by the debris used to fill it. Do not spread within 100 feet of sinkholes.

Sinkholes

Manure and sinkholes are not a good combination. Sinkholes are caused by the downward movement of surface material, occurring naturally due to physical and chemical weathering of bedrock. Sinkholes also occur due to human activities; underground mining, excessive pumping of groundwater, or subsurface erosion from failure of existing utility lines. Sinkholes occur frequently in limestone, dolomite or marble bedrock. Water infiltrates through the soil, into holes, faults or fractures in the bedrock and then merges with the groundwater.

The process of limestone dissolution over a large area results in a distinct landscape called "karst topography". Karst topography includes features like sinkholes, surface and closed depressions, and caves. Due to the interconnected nature of water flow under karst lands, small sinkholes can combine to form a larger sink.

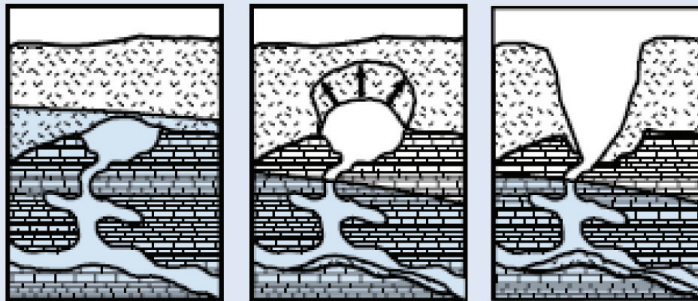
Do not use a sinkhole for a dump. It is not the proper way to dispose of garbage. The water undergoes very little filtration and is a direct conduit for polluted water to enter the groundwater supply.



You may not spread manure within 100 feet of a sinkhole.

Water entering a sinkhole moves rapidly from the ground surface through cavities and fractures to the groundwater. During this process the water undergoes very little filtration and can easily pollute groundwater. Contaminants, including but not limited to manure, fertilizers and pesticides can enter sinkholes and pollute well water. Be careful to NOT spread manure within 100 feet of an open sinkhole.

Previous information derived from Kochanov, W. E., 1999, Sinkholes in Pennsylvania: Pennsylvania Geological Survey, 4th ser., Educational Series 11, 33 p.

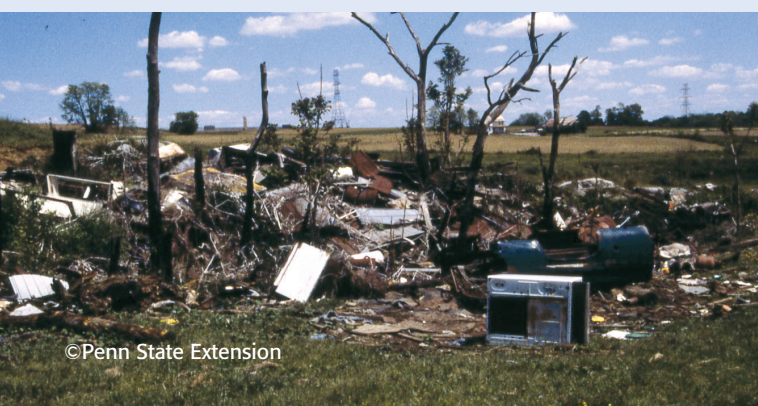


Formation of sinkhole as water table drops. (From USGS Open File Report OF-01-0484)



Manure Spreading

In Pennsylvania





Spreading manure makes sense.

The fertilizer value from manure is extremely valuable for crops. Responsible manure spreading, utilizing tips discussed in this brochure, is a normal, acceptable practice.

Manure spreading practices that cause runoff can negatively impact streams and drinking water, affecting you and your neighbors. Poor manure management and manure runoff may be spotlighted in the media, portraying agriculture in a bad light.

Winter spreading is currently allowed, but not encouraged. There are additional requirements which are discussed below.

Farmers will be held accountable for any manure runoff that enters waters of the Commonwealth even if they are spreading at rates and times outlined in their Manure Management Plans or Nutrient Management Plans.



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Run-off risk is greatly increased when soil is... frozen, snow-covered and/or saturated.

Winter application guidelines

Winter is defined as

- December 15 through February 28; **or**
- Anytime the ground is frozen at least 4 inches deep; **or**
- Anytime the ground is snow covered.

Farmers who apply manure in Winter need to meet the following criteria:

- The maximum application rate **for the winter season** is:
 - 5,000 gallons/ac of liquid manure
 - 20 tons/ac of dry non-poultry manure
 - 3 tons/ac of dry poultry manure
 - or applied at the phosphorus removal rate for the coming year's crops.
- A setback of at least 100 feet from an above ground inlet to an agricultural drainage system (such as inlet pipes to piped outlet terraces) where surface flow is toward the above ground inlet.
- All fields must have at least 25% crop residue at application time or an established and growing cover crop. Hay fields, sod and pasture fields and fields with an established cover crop should be given highest priority for winter application.

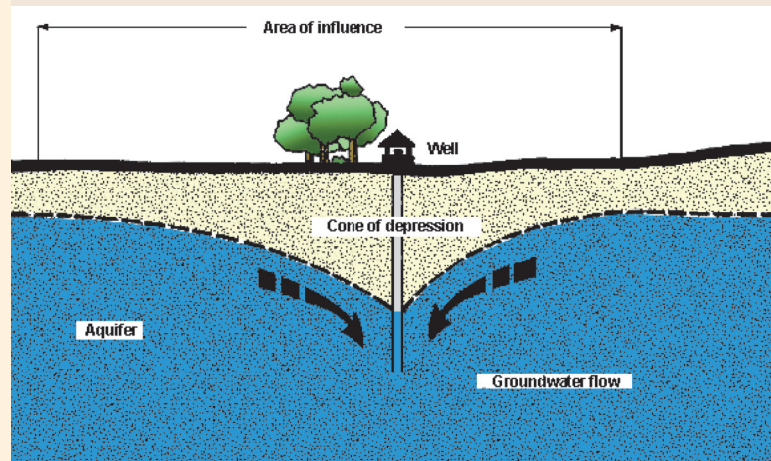
Example of an established and growing cover crop, enabling winter spreading.



Setbacks

For agricultural operations which are not regulated under the statewide Nutrient Management Act (Act 38), manure application requirements are found in the "Manure Management for Environmental Protection; Manure Management Plan Guidance" document. A complete list of application setbacks from environmentally sensitive areas is found in this document, but, generally, a setback of 100 ft. is required, regardless of the slope of land or the % ground cover.

Setbacks from wells = Minimum of 100 feet regardless of slope



Stay back a minimum of 100 ft. from

- tops of stream banks, lakes and ponds
- reduced to 50 ft if recent soil test shows phosphorus levels of <200ppm and farmer uses no-till, and uses a cover crop
- reduced to 35 ft if farmer establishes or maintains a permanent vegetated buffer along the water body
- 50 ft or 35 ft reductions DO NOT APPLY in Winter
- open sinkholes
- active private drinking water sources (wells, springs)
- active public drinking water sources (may be greater if state or federal law requires)
- non-vegetated swales, gullies, ditches

- Manure may not be applied during Winter on fields with slopes greater than 15%. When reading a soils map, the last letter (for example; the "B" in HaB) indicates the slope of the field. "A" slopes are 0-3%. "B" slopes are 3-8%. "C" slopes are 8-15%.
- An application setback of at least 100 feet from the top of the bank of a stream which generally flows during the Winter or Spring, and within 100 feet of a lake or a pond, along with all the other application setbacks outlined earlier in this section.



Crops planted to stream edge; a wider vegetative buffer is strongly recommended.

Maximum Manure Spreading Rates (Non-Winter)

For liquid manure, the application rate cannot exceed 9,000 gallons/ac per application. For rates greater than 9,000 gallons, the application must be split into multiple spreadings with no evidence of pooling between applications. Be sure to follow the recommended rates contained in a nutrient management plan, manure management plan or nutrient balance sheet.



Covering stock piled manure is required if it will sit for more than 120 days. Covering is recommended even if it will sit less than 120 days for fly control and good neighbor relations.

Manure Stockpiling

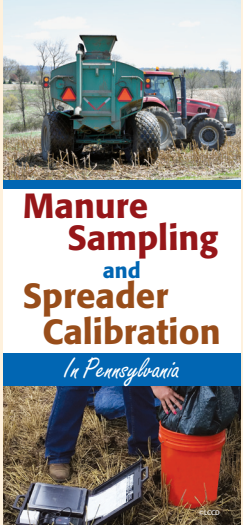
- Manure stacking in the farmstead area must use an improved stacking pad or covered area.
- Manure stacks/stockpiles in other areas, such as crop fields, are required to be:
 - at least 100 ft. from streams, lakes, ponds, open sinkholes, drink water wells, swales, ditches or waterways.
 - on properly constructed improved stacking pads whenever possible. If not using improved stacking pads, piles should not be in the same location each year.
 - placed at the top of a hill, when possible, and divert any upslope water away from the stacking area(s).
 - placed on areas with less than 8% slope.
 - dry enough to allow stacking at least 4 ft high. When stacked on application field, the volume needs to be limited to the amount that can be spread on nearby fields.
 - covered with a plastic tarp or similar water repellent cover if it will be in place for more than 120 days. Manure stacked on a properly managed improved stacking pad does not need to be covered.

Do not stockpile in fields at same location each year.



Manure Sampling and Spreader Calibration

Manure test results, combined with soil test recommendations and manure spreader calibration determine appropriate application rates to meet crop nutrient needs. Refer to the *Manure Sampling and Spreader Calibration in Pennsylvania* brochure for more details. Or refer to Penn State's *Agronomy Facts* #68 & #69 for extensive details.



BioSecurity

Attention custom manure haulers or those sharing equipment! Please be aware of the health of the animals at the farm where you are spreading manure. Avoid cross-contamination between farms. YOU could be held responsible for spreading diseases between farms. Additional information on cleaning/disinfecting equipment can be found by searching "biosecurity" at www.aphis.usda.gov.

No 'Germs'
→ **IN**

No 'Germs'
OUT ←

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Contact your local Conservation District, USDA Natural Resources Conservation Service (NRCS), or private consultant for more information or assistance.