

Setback Recommendations to Reduce Runoff Risk from Manure Applications

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Keeping manure applications at healthy distances from water sources and other sensitive areas can be accomplished easily by following recommended setback guidelines.

Why are setbacks important

Manure, litter, and agricultural wastewater are organic nutrient sources and are valuable byproducts of livestock production. These organic nutrients can improve on-farm soil fertility and reduce the need for commercial fertilizer. Nutrient management planning ensures that manure nutrients are used to optimize forage or crop yields and minimizes environmental contamination.

Setback recommendation from wells and other sensitive areas

Setback distances for manure applications are a key component of the Comprehensive Nutrient Management Planning process (NRCS), as well as other nutrient management plans. These setback distances help reduce the risk of manure-borne pathogens and nutrients entering surface water during runoff or contaminating sensitive groundwater supplies.

Table 1 outlines recommended application setback distances from groundwater sources and several other sensitive features.

Table 1.
Manure, litter, and agricultural wastewater application setback distances from various sensitive features

<i>Sensitive Feature</i>	<i>Recommended Application Setback Distance (ft.)</i>
Public, Commercial, or Private Potable Well	200
Agricultural Well (livestock, wildlife, irrigation, and other agricultural purposes)	100
Occupied Dwelling ¹	100 ¹
Property Line, ¹ Public Road	20
W.Va. Streams listed as DEP Tier 3 or outstanding national resource waters ²	100

Source: (WV-NRCS, 2013)

¹May be applied closer with owner's and/or occupant's permission

²For info and list of Tier 3 waters: www.dep.wv.gov/WWE/Programs/wqs/Pages/default.aspx

Setback recommendations for springs, wetlands, and other surface water

Table 2: Manure, litter, or agricultural wastewater application setback distances from surface water, springs, sinkholes, wetlands, open tile inlets, or direct links to surface water.

These other recommendations vary, depending upon various characteristics of the field, including slope, vegetative cover, and whether the manure is injected, incorporated, or simply surface-applied.

Table 2 shows various setback distance recommendations.

Slope	Surface-Applied	Injected or Incorporated Within 48 Hours	Greater than 50% Vegetative Cover	Less than 50% Vegetative Cover	Recommended Minimum Application Setback Distance (ft.)
In all cases, if 35 feet approved buffer is present					35
≤ 12%	X		X		50
	X			X	70
		X	X		35
		X		X	50
>12%	X		X		100
	X			X	100
		X	X		70
		X		X	100
Previously Converted Wetlands (from surface drainage ditches)	X		X		50
	X			X	70
		X	X		10
		X		X	20
Emergency application onto frozen or snow-covered ground. Apply nutrients at a rate not to exceed 50% of the annual recommendation					Above distance +100

Source: (WV-NRCS, 2013)

Buffers can change these recommendations

Regardless of the field characteristics, if a 35-foot strip of permanent vegetation (“buffer”) is present between the field border and the water feature, then the buffer width is deemed an adequate setback.

Well-established buffer vegetation facilitates the removal of sediment and nutrients from both surface runoff and subsurface flow.

Approved buffer is an area of permanent vegetation consisting of grass, shrubs, and/or trees. Vegetation must be well-established and not in permanent pasture. It is measured from top of bank.

For more information and example planning criteria, see WV-NRCS Conservation Practice Standards Riparian Forest Buffer (391), Filter Strip (393), and Field Border (386).



Figure 1: Buffer between cornfield and adjacent stream.

(Photo courtesy of USDA NRCS)

About winter manure applications

Exceptions to recommendations

Reference

Prior converted wetlands (prior to 12/23/1985) are where the hydrologic functions were altered allowing for crop production and in accordance with the Wetland Conservation provision (Swampbuster) of the 1985 and 1990 farm bills.

Nutrient applications to frozen or snow-covered ground should be avoided; however, if emergency applications are needed, 100 feet should be added to the recommended setback and nutrients should be applied at a rate less than 50 percent of the annual recommendation.

Recommendations contained in Table 2 apply to all agricultural operations applying manure nutrient sources, **except** Concentrated Animal Feeding Operations (CAFOs). CAFO producers should refer to their CAFO-specific nutrient management plan for required setback distances.

Setback recommendations exclude application of biosolids, which are regulated by the West Virginia Department of Environmental Protection.

West Virginia Natural Resources Conservation Service (WV-NRCS). 2013. WV NRCS Comprehensive Nutrient Management Planning (590) Critical Setback Distances for Applying Animal Manures, Litter or Agricultural Process Waste Water to Agricultural Land. WVENGWS 590-1 Nutrient Management. *Electronic Field Office Technical Guide*. Section IV.

Created For more information

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