Section III
Minimum Standards for Manure Storage Facilities

The standards contained in this section relate to the following manure storage facilities on CAO, Volunteers, and operations receiving financial assistance from the Nutrient Management Act or Chesapeake Bay Program.

A. New manure storage facilities built to address proposed or existing operations.

B. Existing storage facilities that are repaired or expanded in order to implement the Nutrient Management Plan (NMP).

This section of the manual describes what standards are to be followed when designing, constructing, locating, operating, maintaining, and removing from service, manure storage facilities addressed through the NMA program.

1. What is a manure storage facility?

A manure storage facility is defined in the regulations as **a permanent facility, or portion of a facility, utilized for the primary purpose of containing manure**. Examples include: liquid manure structures, manure storage ponds, component reception pit and transfer pipes, containment structures built under a confinement building, permanent stacking and composting facilities and manure treatment facilities (such as anaerobic digestion facilities). The term **does not** include the animal confinement areas of poultry houses, horse stalls, freestall barns or bedded pack animal housing systems.

2. Who do these standards apply to?

The minimum standards for the design, construction, location, operation, maintenance and removal from service of manure storage facilities as outlined in the Act **apply to new storage facilities constructed and existing manure storage facilities expanded or repaired as part of an approved plan developed for a CAO, volunteer or an operation receiving financial assistance under the Chesapeake Bay Program**.

a. It should be noted that the setback standards stated in the regulations **do not** apply to manure storage facilities **repaired** as part of an Act 38 nutrient management plan.

b. The location and construction of manure storage facilities need to be coordinated with both the Township Government and the conservation district to ensure all requirements and regulations are met.

c. The **expansion** of a manure storage facility is the enlargement of an existing storage to accommodate needed extra storage and is defined as any enlargement to the facility. Such manure storage enlargements will be included in the nutrient management plan or plan amendment and therefore must meet all setback requirements and Pennsylvania Technical Guide standards.

d. As of January 2000, all liquid and semi-solid manure storage facilities built in Pennsylvania must be designed by a Professional Engineer and must be certified by a Professional Engineer after construction, indicating the storage facility was built in accordance with PA Technical Guide Standards.

3. Technical requirements for manure storage facilities

Manure storage facilities shall be designed, constructed, located, operated, maintained, and, when no longer used for the storage of manure, removed from service, to prevent the pollution of surface water and groundwater, and the offsite migration of pollution. These facilities must meet **standards contained in the Pennsylvania Technical Guide**, except if these standards conflict with the Nutrient Management Act regulations, in which case the requirements in the regulations would take precedence. These conflicts mainly relate to setbacks, where the PA Technical Guide does not require specific setbacks, but the regulations do. **Setback standards** for manure storage facilities are established under this program for any storage constructed or expanded as part of an approved Act-38 nutrient management plan. These setback standards are explained in more detail under items "6" through "9" in this section of the manual.

a. The Natural Resources Conservation Service maintains the Pennsylvania Technical Guide on the Internet and can be found at http://www.nrcs.usda.gov/technical/efotg/.

b. At least 2 weeks prior to installation or major repair of a liquid or semisolid manure storage facility, the responsible engineer shall submit a verification (including a quality assurance inspection plan for construction) to the Commission or delegated conservation district documenting that the design, meeting the requirements of this subsection including applicable setbacks has been completed.

c. Following completion of the installation or repair of a liquid or semisolid manure storage facility, the responsible engineer and contractor shall certify in writing to the conservation district that the facility was constructed, expanded or repaired according to design/location, and meeting the requirements of this subsection. A sample format for the contractor/engineer certification document may be found in Supplement 14. The engineer's signature on the Chesapeake Bay Program (CBP-12) form or equal may also be used as this certification.

4. Manure storage repairs

Manure storage repairs called for in the approved nutrient management plan shall be designed and constructed in accordance with the standards in the PA Technical Guide. The location criteria required in the Act 38 regulations do **not** apply to manure storage facilities repaired under the program.

5. Contingency Plans

A written site specific contingency (emergency action) plan, developed in accordance with the standards contained in the Pennsylvania Technical Guide, addressing actions to be taken in the event of a manure leak or spill from a manure storage facility installed, expanded, or repaired under the Act, shall be developed by the facility engineer by the

time the storage is built, and kept on-site at the operation. In the case of a leak or spill from a manure storage facility covered under the Act, the **operator is responsible for implementation** of the site-specific contingency plan developed for the storage facility. The contingency plan shall contain information necessary to meet the notification requirements contained in DEP's regulations (Section 101.2, relating to incidents causing or threatening pollution), for reporting leak or spill events that would result in pollution to surface water or groundwater. **These DEP regulations require operators** of manure storage facilities where a spill or leak has occurred, to immediately contact DEP as well as notify known downstream water users of the leak or spill. This DEP requirement needs to be included as part of the contingency plan so that the farmer understands this requirement. Supplement 13 provides a model Emergency Response Plan.

a. It is recommended that the operator provide a copy of the contingency plan to the local Emergency Management Agency and others (such as neighbors who will assist with equipment, the local fire department, etc.) that would assist during a leak or spill event.

b. Another resource for development of the contingency plan is DEP's Guidelines for the Development and Implementation of Environmental Emergency Response Plans.

6. General description, manure storage setback requirements for operations in existence ON OR BEFORE October 1, 1997:

There are two separate major categories of setback criteria established for the program based on when the farm operation went into existence. The first set of setback requirements described immediately below is for those operations that were producing livestock or poultry **on or before** *October 1, 1997*. The second set of setback requirements listed under items "8" and "9" below are for farms that came into existence **after** *October 1, 1997*. Please call state NMA program staff to assist you with making setback determinations in situations where you are not sure what the program setback requirements are.

a. The regulations refer to CAOs that were producing livestock or poultry on or before October 1, 1997. The wording *"producing livestock or poultry on or before October 1, 1997"* is meant to describe an active animal production operation at the time the regulations went into effect. It is understood that there is down time due to production cycles or market trends and therefore there may not be animals on the operation on October 1, 1997, but the operation would still be considered as "producing livestock or poultry on or before October 1, 1997" if it was temporarily without animals consistent with the normal production cycle for the operation.

   - If there is an **existing manure storage facility**, then, as part of the manure management portion of the plan, the storage would need to be visually inspected by the planner and plan reviewer to assure that it is not leaking. An existing storage located within the setback distances does not have to be

moved or reconstructed if it is not causing a problem. If the existing storage is determined to be leaking, then it will need to be repaired or replaced.

- If there is to be a **new manure storage facility** built on an existing operation, it would need to meet the standards and setback criteria explained in "7" below. These requirements recognize that where there is an existing barn housing the animals, the farmer may not have much of a choice of where to put the storage ("7" below allows for waivers of setbacks).
- If there is planned to be an **enlargement or a major alteration to an existing manure storage facility** on an existing operation, then the facility will again need to meet the setback requirements explained in "7" below.
- Where an existing CAO is building new animal confinement facilities (new barns) for an existing animal type, either due to the need to make facility renovations or as a part of an operation expansion, this shall generally be considered as an operation which was "producing livestock or poultry as of October 1, 1997" for purposes of determining setback criteria and shall be required to follow the setback criteria established in the below section "7" of the technical manual.
- In contrast, where an existing CAO brings on a new animal enterprise (i.e. a dairy operation which is putting on a new broiler house), this portion of the farm would generally be considered to be an "agricultural operation coming into existence after October 1, 1997" for purposes of determining setback criteria and therefore the operator would be required to follow the setback distances for new CAOs covered in "8" and "9" below.
- Manure storage setback requirements are only relevant to those portions of the operation considered to be a manure storage facility. The definitions within the regulations define what is a manure storage facility. Setbacks relate to all types of manure storages built on participating farms including liquid, semi-solid, and solid storage facilities. These setbacks do not relate to animal confinement facilities (barns) that are not considered manure storage facilities.

7. For CAOs that were producing livestock or poultry ON OR BEFORE October 1, 1997, manure storage facilities, except reception pits and transfer pipes, may not be constructed:

a. Within **100 feet** of a perennial stream, river, spring, lake, pond or reservoir.

- A **perennial stream is defined** as a body of water normally flowing year round, having defined bed and banks, and is capable, in the absence of manmade disturbances, of supporting bottom dwelling aquatic animals.
- An **intermittent stream is defined** as a body of water flowing only at times of surface water runoff or when the water table is high. This area may or may not have defined bed and banks, and is commonly not capable of supporting bottom dwelling aquatic animals year round.
- A **spring is defined** as a place where groundwater flows onto the land surface at least 183 days a year.

- **Wetlands** are addressed by the setbacks. The regulations do not give a required setback from a wetland, therefore the spring and stream setbacks would be used for locating manure storage facilities adjacent to these areas. The planner and reviewer will need to delineate where the stream, river, spring, lake, pond or reservoir is associated with the wetland (using the above criteria) and then setback from that designated area.

b. Within **100 feet** of a private water well, or open sinkhole.

c. Within **100 feet** of an active public drinking water well, unless other State or Federal laws or regulations require a greater isolation distance.

- A **public water supply is defined** as one that is used at least 60 days a year and either having at least 15 service connections or serving at least 25 individuals daily.
- Please note that **no waivers** are available for the setbacks established for public wells.

d. Within **100 feet** of an active public drinking water source surface intake, unless other State or Federal laws or regulations require a greater isolation distance.

- A **public water supply is defined** as one that is used at least 60 days a year and either having at least 15 service connections or serving at least 25 individuals daily.
- Please note that **no waivers** are available for the setbacks established for public drinking water source surface intakes.

e. Within **100 feet** of a property line, unless the **landowners** within the 100 feet distance from the manure storage facility otherwise agree and execute a waiver in a form acceptable to the Commission.

- A **road bisecting a property** is generally not considered a property line in relation to these setbacks. Operators are instructed to contact their local municipality to confirm this and to determine general township setbacks. Please note that **township nutrient management ordinances** must be consistent with the Nutrient Management Act, but townships may have other setbacks that they establish such as for road siting distances, emergency fire lanes, etc.
- A **sample waiver form** is provided in Supplement 16. Please note that a neighbor waiver is not transferable when the property is sold unless it is recorded with the deed or the subsequent landowner agrees in writing to accept the waiver. Also note that a neighbor waiver is only necessary for the *construction* of the manure storage facility. If a farmer obtained a waiver from his neighbor and the storage was subsequently built, and later on a new person buys the neighboring property after the storage is there, it is presumed that the new neighbor bought the property understanding that there is a

manure storage located next to his property and that by buying the property, they are accepting its existence in that location.

f. Within **200 feet** of a perennial stream, river, spring, lake, pond, reservoir or any water well where these manure storage facilities (except permanent stacking and compost facilities) are located on slopes exceeding 8% or have a capacity of 1.5 million gallons or greater.

- **To determine if a slope exceeds 8%** utilize soil maps along with a field review. The area where the slope is to be measured is the area within the 200 feet from the water source.
- Note that the setback does not increase from the initial 100' setback distance for **manure stacking and composting facilities**.

g. Within **200 feet** of a property line, where these facilities (except permanent stacking and compost facilities) are located on is toward the property line, or where the facility slopes exceeding 8%, where the slope has a capacity of 1.5 million gallons or greater, unless the **landowners** within the 200 foot distance from the facility otherwise agree and execute a waiver in a form acceptable to the Commission.

- **To determine if a slope exceeds 8%** utilize soil maps along with a field review. The area where the slope is to be measured is the area within the 200 feet from the water source.
- A **road bisecting a property** is generally not considered a property line in relation to these setbacks. Operators are instructed to contact their local municipality to confirm this and to determine general township setbacks. Please note that **township nutrient management ordinances** must be consistent with the Nutrient Management Act, but townships may have other setbacks that they establish such as for road siting distances, emergency fire lanes, etc.

- A **sample waiver form** is provided in Supplement 16. Please note that a neighbor waiver is not transferable when the property is sold unless it is recorded with the deed or the subsequent landowner agrees in writing to accept the waiver. Also note that a neighbor waiver is only necessary for the *construction* of the manure storage facility. If a farmer obtained a waiver from his neighbor and the storage was subsequently built, and later on a new person buys the neighboring property after the storage is there, it is presumed that the new neighbor bought the property understanding that there is a manure storage located next to his property and that by buying the property, they are accepting its existence in that location.

It should be noted that **waivers can be granted** for most of the manure storage facility setbacks listed above built on **existing farms.** Waivers are granted by the delegated conservation district or the Commission in accordance with the criteria listed in the program's administrative manual. **An operator must meet all of the criteria**

established in the Nutrient Management Program Administrative Manual (see item "10" below for a listing of waiver criteria) in order to be granted a waiver. It should also be noted that the district or Commission may only grant waivers for manure storage facilities built on existing farms, but the neighbor may provide a waiver from the property line setback for manure storage facilities built on existing **or new** operations. Again note that **no waivers are ever to be granted from the setbacks established for public water sources.**

8. General description, manure storage facility setback requirements for agricultural operations that come into existence AFTER October 1, 1997:
The regulations refer to CAOs on agricultural operations that *come into existence after October 1, 1997*. For farmers building a storage on these new operations, the operator is expected to follow the stricter setback criteria listed in "9" below which generally do not allow for waivers. It is the intention of the program to require stricter standards of new operations because they have more of an opportunity to address barn placement, etc. as they are designing their general farm layout.

9. For CAOs on agricultural operations that come into existence AFTER October 1, 1997, manure storage facilities, except reception pits and transfer pipes, may not be constructed:

a. Within **100 feet** of a perennial stream, river, spring, lake, pond or reservoir.

- A **perennial stream is defined** as a body of water normally flowing year round, having defined bed and banks, and is capable, in the absence of manmade disturbances, of supporting bottom dwelling aquatic animals.
- An **intermittent stream is defined** as a body of water flowing only at times of surface water runoff or when the water table is high. This area may or may not have defined bed and banks, and is commonly not capable of supporting bottom dwelling aquatic animals year round.
- A **spring is defined** as a place where groundwater flows onto the land surface at least 183 days a year.
- **Wetlands** are addressed by the setbacks. The regulations do not give a required setback from a wetland, therefore the spring and stream setbacks would be used for locating manure storage facilities adjacent to these areas. The planner and reviewer will need to delineate where the stream, river, spring, lake, pond or reservoir is associated with the wetland (using the above criteria) and then setback from that designated area.

b. Within **100 feet** of a private water well, or open sinkhole.

c. Within **100 feet** of an active public drinking water well, unless other State or Federal laws or regulations require a greater isolation distance.

- A **public water supply is defined** as one that is used at least 60 days a year and either having at least 15 service connections or serving at least 25 individuals daily.

d. Within **100 feet** of an active public drinking water source surface intake, unless other State or Federal laws or regulations require a greater isolation distance.

   - A **public water supply is defined** as one that is used at least 60 days a year and either having at least 15 service connections or serving at least 25 individuals daily.

e. Within **200 feet** of a property line, unless the **landowners** within the 200-foot distance from the manure storage facility otherwise agree and execute a waiver in a form acceptable to the Commission.

   - A **road bisecting a property** is generally not considered a property line in relation to these setbacks. Operators are instructed to contact their local municipality to confirm this and to determine general township setbacks. Please note that **township nutrient management ordinances** must be consistent with the Nutrient Management Act, but townships may have other setbacks that they establish such as for road siting distances, emergency fire lanes, etc.
   - **A waiver may be granted by the neighboring landowner**. A sample waiver form is provided in Supplement 16. Please note that a neighbor waiver is not transferable when the property is sold unless it is recorded with the deed or the subsequent landowner agrees in writing to accept the waiver. Also note that a neighbor waiver is only necessary for the *construction* of the manure storage facility. If a farmer obtained a waiver from his neighbor and the storage was subsequently built, and later on a new person buys the neighboring property after the storage is there, it is presumed that the new neighbor bought the property understanding that there is a manure storage located next to his property and that by buying the property, they are accepting its existence in that location.

f. Within **200 feet** of a perennial stream, river, spring, lake, pond, reservoir or any water well where these manure storage facilities (except permanent stacking and compost facilities) are located on slopes exceeding 8% or have a capacity of 1.5 million gallons or greater.

   - **To determine if a slope exceeds 8%** utilize soil maps along with a field review. The area where the slope is to be measured is the area within the 200 feet from the water source.

g. Within **300 feet** of a property line, where these facilities (except permanent stacking and compost facilities) are located on slopes exceeding 8% where the slope is toward the property line, or have a capacity of 1.5 million gallons or greater, unless the **landowners** within the 300 foot distance from the facility otherwise agree and execute a waiver in a form acceptable to the Commission.

- **To determine if a slope exceeds 8%** utilize soil maps along with a field review. The area where the slope is to be measured is the area within the 200 feet from the water source.
- A **road bisecting a property** is generally not considered a property line in relation to these setbacks. Operators are instructed to contact their local municipality to confirm this and to determine general township setbacks. Please note that **township nutrient management ordinances** must be consistent with the Nutrient Management Act, but townships may have other setbacks that they establish such as for road siting distances, emergency fire lanes, etc.
- **A waiver may be granted by the neighboring landowner**. A sample waiver form is provided in Supplement 16. Please note that a neighbor waiver is not transferable when the property is sold unless it is recorded with the deed or the subsequent landowner agrees in writing to accept the waiver. Also note that a neighbor waiver is only necessary for the *construction* of the manure storage facility. If a farmer obtained a waiver from his neighbor and the storage was subsequently built, and later on a new person buys the neighboring property after the storage is there, it is presumed that the new neighbor bought the property understanding that there is a manure storage located next to his property and that by buying the property, they are accepting its existence in that location.

It should be noted that **NO WAIVERS are to be granted by the districts or the Commission** for any of the setbacks listed in "9" above **(**these are the setbacks for storages built on new farms**).** It should also be noted that the **NEIGHBOR may provide a waiver from the property line setback** for storages built on existing **or new** operations.

10. What is the process to approve waivers for manure storage facilities?
The Nutrient Management Act Administrative Manual lays out the criteria and process to be followed when the districts or the Commission receive a waiver request. A sample waiver request form is included as Supplement 15 to this manual. The agency reviewing the waiver request (the district or the Commission), in conjunction with other relevant cooperating agency technical staff, shall perform an **on-site visit** to evaluate the site for which the waiver is proposed. An outline of the waiver criteria that must be met in order to obtain a waiver are as follows:

- The placement of the manure storage facility outside of the setback area is found to be physically impractical or economically unreasonable (an increase in cost of 50% or $5,000 whichever is less).
- The placement of the manure storage facility within the setback area has been determined to adequately protect the surrounding area from offsite migration of manure (by way of existing topography, proposed diversion practices, or demonstrating that it is safer to have it within the area than it is to build a system to transport manure out of the setback area).
- The facility design meets PA Technical Guide standards.

- The operator agrees to allow for annual inspection of the manure storage facility when empty.
- The loading/unloading area is designed to retain or divert 3,000 gallons of manure.
- The manure storage facility shall **not** use a gravity unloading system.
- The foundation, floor and walls of the manure storage facility will be protected against erosion and flotation from a 25-year flood event.
- The **top** of the storage is above the 100-year flood elevation. The 100-year flood elevation will need to be determined by the engineer designing the manure storage.
- An operation and maintenance plan (including a contingency plan) must be developed and reviewed with the appropriate individuals.
- The loading/unloading equipment shall be outfitted with a secondary check valve (where appropriate).

Additional information concerning waivers is available in the program's administrative manual that may be viewed at the conservation district office. In addition to the sample waiver request form included as Supplement 15 to this manual, sample waiver approval/disapproval letters are included in the Appendix VI of the DEP Administrative Manual.

The program **allows neighbors to approve waivers from the property line setback**. Manure storage facilities do not need to meet the above criteria to get a waiver from the neighbor from the property line setback. The operator looking for the waiver needs only to get written agreement from the neighbor that the storage may be placed closer to the property line than the setbacks allow. A sample format for these neighbor waivers is provided in Supplement 16.

11. The sides of facilities located in a floodplain shall be protected from erosion and scouring from a 25-year flood event.
This information relates to specific design criteria available from NRCS.

12. Chapter 105 regulations
All manure storage facilities built under the act shall conform to the requirements in DEP's Chapter 105 Rules and Regulations. Chapter 105 requires operators to get a Dam Safety or Encroachment Permit for manure storage facilities built in certain areas next to streams, or for very large storages that are over 15 feet tall and hold more than 50 acre-feet of manure (50 acre-feet of manure is approximately 16 million gallons). Information related to these requirements can be obtained from the DEP regional offices or the conservation district office.