Closure of Waste Impoundments (No.) 360

DEFINITION

The closure of waste impoundments (treatment lagoons and liquid storage facilities), that are no longer used for their intended purpose, in an environmentally safe manner.

PURPOSES

This practice may be applied as part of a conservation system to support one or more of the following purposes.

- To protect the quality of surface water and groundwater resources.
- To eliminate a safety hazard for humans and livestock.
- To safeguard the public health.

CONDITIONS WHERE PRACTICE APPLIES

This practice applies to agricultural waste impoundments that are no longer needed as a part of a comprehensive nutrient management plan or waste management system and are to be permanently closed or converted.

Where these impoundments are to be converted to fresh water storage and the original impoundment was not constructed to NRCS standards, this practice will only apply where the investigation, as called for in National Engineering Manual (NEM) 501.23, shows
structural integrity for the intended use.

CRITERIA

General Criteria Applicable To All Purposes

The closure shall comply with all federal, state, and local laws, rules, and regulations, including pollutant discharge elimination system requirements, where applicable.

All structures used to convey waste to waste impoundments or to provide drainage from the impoundment area shall be removed and replaced with compacted earth material or otherwise rendered unable to convey waste.

Liquid and slurry wastes in the impoundment shall be agitated and pumped to the extent conventional pumping will allow. Clean water may be added as necessary to facilitate the agitation and pumping. The wastewater shall be utilized in accordance with Nutrient Management Practice Standard (590). The sludge remaining on the bottom and sides of the waste treatment lagoons or waste storage facility shall be removed to the fullest extent practicable and utilized in accordance with Nutrient Management Practice Standard (590).

Land Reclamation. Where a waste impoundment will be reclaimed for other land uses, it must be modified so it will no longer impound water in accordance with the criteria provide below. Any liner, except for natural clay-based liners, shall be removed or rendered unable to impound water. Waste impoundments that have water impounded against the embankment are considered embankment structures if the depth of water is three feet or more above natural ground.

(1) Embankment Impoundments. Embankment impoundments may be reclaimed by removing the entire embankment or by removing a section of the embankment. Waste and sludge shall be removed from the site before the embankment or a section of the embankment is removed. The slopes and bottom of the opening in the embankment shall be stable for the soil material involved; however, the side slopes shall be no steeper than three horizontal to one vertical (3:1).

(2) Excavated Impoundments. Excavated impoundments may be reclaimed by backfilling with suitable soil material. The backfill height shall exceed the design finished grade by 5 percent to allow for settlement. The top one foot (0.3 m) of the finished surface shall be constructed of the most clayey material available and shall be mounded to direct rainfall runoff away from the area. Incorporate available topsoil where feasible to aid establishment of vegetation.

(3) Fabricated Waste Storage Structures. Fabricated waste storage structures to be closed shall be demolished or disassembled or otherwise altered

to such an extent that no water can be impounded. Disassembled materials such as pieces of metal shall be temporarily stored until their final disposition in such a manner that they do not pose a hazard to animals or humans. Demolished materials shall be buried on-site or moved off-site to locations designated by state or local officials. If buried on-site, the materials are to be covered with soil to a settled depth of one foot, and the backfill to be sufficiently mounded such that runoff will be diverted from the site after the backfill settles.

Conversion to Fresh Water Storage. Where a waste impoundment will be converted to store fresh water, the converted impoundment shall meet the requirements as set forth in the NRCS practice standard for the intended purpose.

Safety. When a waste impoundment is converted to some other use that will impound water, precautions (fencing and warning signs) shall be used to ensure that the pond is not used for incompatible purposes, such as swimming and livestock watering, until water quality is adequate for these purposes.

Personnel shall not enter an enclosed waste impoundment.

Protection. All disturbed areas not returned to crop production shall be vegetated in accordance with seeding specifications in the Field Office Technical Guide, or other suitable measures used to control erosion and restore the esthetic value of the site. Use vegetation adapted to the site that will accomplish the desired purpose. Preference shall be given to native species in order to reduce the introduction of invasive plant species; provide management of existing invasive species; and minimize the economic, ecological, and human health impacts that invasive species may cause. If native plant materials are not adaptable or proven effective for the planned use, then non-native species may be used. Refer to the Field Office Technical Guide (FOTG), Section I, Invasive Plant Species for plant materials identified as invasive species.

Measures shall be taken during construction to minimize site erosion and pollution of downstream water resources. This may include such items as silt fences, hay bale barriers, temporary vegetation, and mulching.

CONSIDERATIONS

Where the surface is covered by a dense mat of floating vegetation, pumping effort to empty waste impoundments may be reduced by first removing the vegetation.

Alternative methods of sludge removal may be required where the impoundments contain large amounts of bedding or other debris.

Consider methods to minimize the impact of odors associated with emptying and land applying waste and sludge. Odor minimizing practices are described in the Michigan Department of Agriculture, Right To Farm, Generally Accepted Agricultural and Management Practices for Manure Management and Utilization, as well as other references.

PLANS AND SPECIFICATIONS

Plans and specifications shall be prepared in accordance with the criteria of this standard and shall describe the requirements for applying the practice to achieve its intended use.

Support data documentation requirements are as follows:

- Inventory and evaluation records
  - Assistance notes or special report
- Survey notes, where applicable
  - Design survey
  - Construction layout survey
  - Construction check survey
- Design records
  - Physical data, functional requirements, and site constraints, where applicable
  - Soils/subsurface investigation report, where applicable
- Design and quantity calculations
- Construction drawings/specifications with:
  - Location map
  - "Designed by" and "Checked by" names or initials
  - Approval signature
  - Job class designation
  - Initials from preconstruction conference
  - As-built notes
- Construction inspection records
  - Assistance notes or separate inspection records
  - Construction approval signature
- Record of any variances approved, where applicable

OPERATION AND MAINTENANCE

An Operation and Maintenance (O&M) plan shall be developed for this practice. The O&M plan shall be consistent with the purposes of the practice, its intended life, safety requirements, and the criteria for the design.