

NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE STANDARD

WASTE FACILITY CLOSURE

(No.)
Code 360



DEFINITION

The decommissioning of facilities, and/or the rehabilitation of contaminated soil, in an environmentally safe manner, where agricultural waste has been handled, treated, and/or stored and is no longer used for the intended purpose.

PURPOSE

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

CONDITIONS WHERE PRACTICE APPLIES

This practice applies to agricultural waste facilities or livestock production sites that are no longer needed as a part of a waste management system and are to be permanently closed or converted for another use. These facilities include liquid/dry waste storage facilities, confined animal housing, feedlots, livestock yards, or composting facilities.

This practice applies where impoundments that are to be converted to fresh water storage meet current NRCS standards.

Where structures that include agricultural waste storage, such as confined animal housing, are to be decommissioned, this practice will apply to the removal of the waste and rehabilitation of soil within the facility.

It does not apply to sites contaminated by materials that require the issuance of a hazardous waste permit, such as fuel or pesticides.

CRITERIA

General criteria applicable to all purposes.

Closure shall comply with all Federal, state, and local laws, rules, and regulations including National Pollutant Discharge Elimination System (NPDES) requirements.

Evaluate and avoid or minimize impact to cultural resources, wetlands and Federal and state protected species to the extent practicable during planning, design and implementation of this conservation practice in accordance with established National and Florida policy, General Manual (GM) Title 420-Part 401; Title 450-Part 401, Title 190-Parts 410.22 and 410.26, National Planning Procedures Handbook (NPPH) Florida Supplements to Parts 600.1 and 600.6, National Cultural Resources Procedures Handbook (NCRPH), National Food Security Act Manual (NFSAM), and the National Environmental Compliance Handbook (NECH).

Existing waste transfer components that convey to waste facilities or provide drainage from the facility area shall be removed and replaced with compacted earth material or otherwise rendered unable to convey waste.

Remove manure, agricultural waste, and contaminated soil to the maximum extent practicable. All manure and agricultural waste that could negatively impact water and/or air quality or pose a safety hazard shall be removed

Conservation practice standards are reviewed periodically and updated if needed. To obtain the current version of this standard, contact the Natural Resources Conservation Service.

as deemed practicable. All liquid, slurry, sludge, and solid waste, and soil removed from the facility shall be utilized in accordance with Florida NRCS conservation practice standards, Nutrient Management, Code 590 and/or Waste Recycling, Code 633.

Precautions (fencing and warning signs) shall be used where necessary to ensure that the facility is not used for purposes incompatible with the facility modification.

Erosion and Pollution Control. All disturbed areas shall be re-vegetated or treated with other suitable measures used to control erosion and restore the aesthetic value of the site. Sites, not suitable for re-vegetation through normal cropping practices, shall be vegetated in accordance with Florida NRCS conservation practice standard, Critical Area Planting, Code 342.

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

Liquid and Slurry Waste Removal. Liquid and slurry wastes shall be agitated and pumped to the maximum extent practicable. Water shall be added as necessary to facilitate the agitation and pumping. The wastewater shall be utilized in accordance with Florida NRCS conservation practice standard, Nutrient Management, Code 590 and/or Waste Recycling, Code 633.

Sludge Removal. During sludge removal operations, the integrity of the liner, if one is present, shall be maintained. Sludge shall be removed to the maximum extent practicable and utilized in accordance with Florida NRCS conservation practice standard, Nutrient Management, Code 590 and/or Waste Recycling, Code 633.

Impoundment Closure. Three options are associated with the decommissioning of liquid waste impoundments. One of the following will be used.

1. Embankment Impoundments (those with a depth of water at the design water level of three feet or more above natural ground) may be breached so that they no longer impound water. The embankment material can then be graded into the impoundment area, and the area vegetated for another use. Or the embankment may remain if the impoundment

area surface has been sufficiently cleaned so that runoff leaving the site would not be considered as contaminated by the wastes.

2. Excavated Impoundments may be backfilled so that these areas may be reclaimed for other uses.
3. Impoundments may be converted to fresh water storage, or used for another purpose.

Embankment Impoundments. Waste and sludge shall be removed from the impoundment before any modifications to the site. Unless the site is planned for other purposes such as conversion to freshwater, the embankment will be breached and any concrete and/or flexible membrane liners will be removed or rendered unable to impound water and disposed of properly,

The slopes and bottom of the breach shall be stable for the soil material involved; however, the side slopes shall be no steeper than three horizontal to one vertical (3:1).

Excavated Impoundments. Waste and sludge shall be removed from the impoundment before any modifications to the site. Unless the site is planned for other purposes such as conversion to freshwater, concrete and/or flexible membrane liners shall be removed or rendered unable to impound water and disposed of properly. The backfill height shall exceed the height to the design finished grade by a minimum of 5 percent to allow for settlement. The top one foot of the backfill shall be constructed of the most impervious soil material readily available and mounded to shed rainfall runoff.

Incorporate available topsoil where feasible to aid establishment of vegetation.

Conversion to Fresh Water Storage. The converted impoundment shall meet the requirements as set forth in the appropriate NRCS practice standard for the intended purpose. Where the original impoundment was not constructed to meet NRCS standards, the investigation for structural integrity shall be in accordance with National Engineering Manual (NEM) Part 501.23. When it is not practical to remove the sludge from a waste impoundment that is being converted to fresh water storage, the impoundment shall not be used for fish production, swimming, or livestock watering until the water quality is acceptable for these purposes. Water quality standards shall comply with all

Federal, state, and local laws, rules, and regulations.

Fabricated Liquid Waste Facilities. If fabricated structures are to be demolished, disassembled or otherwise altered, it shall be accomplished to such an extent that no water can be impounded and disposed of in accordance to Florida NRCS conservation practice standard, Obstruction Removal, Code 500. Disassembled materials such as pieces of metal shall be temporarily stored in such a manner that they do not pose a hazard to animals or humans until their final disposition.

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 will be covered with soil to a settled depth of at least one foot. The backfill height shall exceed the height to the design finished grade by a minimum of five (5) percent to allow for settlement, and the backfill be sufficiently mounded such that runoff will be diverted from the site after the backfill settles.

Dry Waste Storage or Treatment Facilities. The soil at dry waste facilities such as confined animal housing, feedlots, livestock yards, or composting facilities with earthen floors must be evaluated.

The required depth of soil to be rehabilitated will be to a depth at which the concentration of identified nutrients in the soil profile are at an acceptable level that will not cause an adverse affect on water quality. Concentrations of nutrients will be determined by laboratory analyses of the soil profile.

Soil samples for laboratory analysis shall be taken at multiple locations within the facility with a minimum of one (1) sample location per acre of the area being decommissioned.

The estimated depth of soil rehabilitation will be based on professional judgment and experience in similar situations. The soil depth for laboratory analysis will be a minimum of two (2) times the estimated depth of rehabilitation, but not less than eighteen (18) inches in depth.

At each sample location, three (3) samples will be taken at every 6 inches in depth for the total depth to be analyzed. Samples taken for each 6 inches in depth may be consolidated into a single sample for laboratory analysis.

The samples shall be collected, prepared and tested in accordance with Florida NRCS

conservation practice standard, Nutrient Management, Code 590.

If the laboratory results do not indicate an acceptable concentration of nutrients in the soil profile, additional soil samples at greater depths will be taken until the analysis shows an acceptable concentration of nutrients. The depth of soil to be rehabilitated will be the soil depth determined to be above acceptable concentrations of nutrients.

The results of the soil analysis will be used to prepare a plan to recover the site for its intended use. The following site appropriate options shall be utilized, if needed:

- Adjust pH to restore desired crop growing conditions
- Plant salt tolerant plants to restore the site to desired crop conditions. The harvested vegetation quality should be monitored for N, P, and K removal.
- Select plants and erosion control practices to minimize phosphorus transport from the site and facilitate remediation of excessively high phosphorus levels.

Although in-situ processes are the preferred method for adjusting the soil conditions, removal of a portion of the soil may be necessary. The removed soil shall be land applied in accordance with Florida NRCS conservation practice standard, Nutrient Management, Code 590 and/or Waste Recycling, Code 633. Excavated areas shall be graded and or backfilled to shed rainfall and prevent ponding of runoff. Where feasible, available topsoil should be used to aid the establishment of permanent vegetation.

CONSIDERATIONS

Conduct pre-closure soil and water (surface and subsurface) testing to establish base line data surrounding the site at the time of closure. Establishing baseline data can be used in the future to address soil and water issues.

Reduce pumping effort to empty waste impoundments where the surface is covered by a dense mat of floating vegetation by first applying herbicide to the vegetation and then burning the residue. Appropriate permits must be obtained before burning. When burning is conducted, take necessary actions to ensure that smoke is managed to minimize impacts to downwind populations.

Alternative methods of sludge removal may be required where the impoundments contain large amounts of oyster shells, soil, or other debris.

Minimize the impact of odors associated with emptying and land applying wastewater and sludge from a waste impoundment by using an incorporation application method at a time when the humidity is low, when winds are calm, and when wind direction is away from populated areas. Adding chemical and biological additives to the waste prior to agitation and emptying can reduce odors. Odor impacts from land application can also be mitigated by using an incorporation application method.

Minimize agitation of the wastes to only the amount needed for pumping to reduce the potential for release of air emissions.

Soil to fill excavated ponds should not come from important farmlands (prime, statewide, local, and/or unique).

Waste facility closure may improve utilization and aesthetics of the farmstead.

Breached embankments may detract from the overall aesthetics of the operation. Embankments should be removed and the site returned to its original grade.

Disassembled structural facilities may be suitable for assembly at another site. Care should be taken during closure to minimize damage to the pieces of the facility, particularly coatings that prevent corrosion of metal pieces.

When converting waste impoundments to fresh water ponds, the effects on the water budget should be considered. A pond will reduce surface runoff, trap sediment, and reduce nutrients and pesticides leaving the land.

Sludge which is allowed to dry will begin to break down aerobically. This will result in a release of nutrients from the sludge, which can last years depending upon the depth of sludge. For this reason, sludge which is left in place should be kept flooded to prevent this from occurring, or other measures taken to prevent this release of nutrients from becoming a source of surface or ground water contamination.

If livestock will have access to the closed waste impoundment, consideration should be given to fencing or installation of watering ramp where needed for safety when converted to fresh water ponds.

To minimize potential impacts to livestock, such as nitrate poisoning, initiate a testing and monitoring program of nutrient levels in crop products, particularly livestock feeds, harvested from sites of closed animal confinement facilities.

PLANS AND SPECIFICATIONS

Plans and specifications for decommissioning of abandoned waste facilities and the rehabilitation of contaminated soil shall be in keeping with this standard and shall describe the requirements for applying the practice to achieve its intended purpose. The plans and specifications shall also be consistent with the requirements of the applicable Florida conservation practice standard, for the intended purpose after closure.

As a minimum plans and specifications shall include the following items:

- Location of impoundment to be closed.
- Amount of wastewater or sludge to be pumped, if applicable.
- Laboratory analysis of nutrient concentrations and soil analysis where required.
- Plan for utilization of nutrients, including location, rates, and timing of application.
- Where embankments are to be breached, provide cross sections and profiles of embankment breach.
- Cross section of area to be filled.
- Cut and fill quantities where applicable.
- Details for structures (pipelines, etc.) to be closed or removed. Provide specifications and details for proper disposal of all structures to be removed.
- Erosion and pollution control structure requirements during construction.
- Vegetative requirements.
- Location of utilities and notification.

OPERATION AND MAINTENANCE

The proper decommissioning and rehabilitation of a waste facility should require little or no operation and maintenance; however, if it is converted to another use, such as a fresh water facility, operation and maintenance shall be in accordance with the needs as set forth in the appropriate NRCS conservation practice standard for the intended purpose.

REFERENCES

Florida NRCS Conservation Practice Standard,
Critical Area Planting, Code 342
Nutrient Management, Code 590
Pond, Code 378
Waste Recycling, Code 633
NEM 501.23
General Manual
Title 420-Part 401
Title 450-Part 401
Title 190-Parts 410.22 and 410.26
National Cultural Resources Procedures
Handbook
National Environmental Compliance Handbook
National Food Security Act Manual
National Planning Procedures Handbook