

**NATURAL RESOURCES CONSERVATION SERVICE  
CONSERVATION PRACTICE ENGINEERING NOTEKEEPING**

**WASTE TREATMENT LAGOON**

**CODE 359**

**NOTEKEEPING**

**Design Survey, Design and Plans**

- A. Engineering plans shall be prepared for each component of an animal waste management system. The design survey must be in sufficient detail to allow accurate determination of waste inlet and outlet locations and volume requirements. This may be accomplished by obtaining a centerline profile of the embankment location, along with some key elevations in and around the lagoon area when the embankment type lagoon is used, or sufficient cross-sections of the area involved to prepare a topographic map. Grid surveys of the area may be needed at times. Designs will include documentation showing how required volume is determined.
- B. Record distance to nearest area for public use or residence of anyone other than the owner or his tenant.
- C. Record both structural classification and site evaluation for all embankment lagoons. The structural classification should be recorded on Form NC-ENG-34, and the site evaluation should be recorded on Form NC-CPA-17.
- D. A detailed soils investigation shall be made on all sites with special attention to the water table, seepage potential, and the need for a liner.
- E. A detailed operation and maintenance plan shall be a part of every design.
- F. Source of water for initial filling of lagoon should be indicated.
- G. Check height of embankment and volume of effluent to determine if a dam safety permit from DEHNR is required.
- H. Show minimum thickness of liner, moisture requirements, and protection for liner during initial fill.
- I. Emergency Action Plan.

**Construction Layout**

Set enough well-marked stakes to guide the contractor in constructing the lagoon according to plans.

## **Construction Check**

As a minimum, the following data will be recorded:

- A. Embankment Type Lagoon:
  - 1) Record profile and cross-section of foundation cutoff trench.
  - 2) Record a profile along centerline of embankment to determine if top elevation is adequate.
  - 3) Record at least one cross-section of the embankment to determine construction top width and side slopes.
  - 4) Record the elevation and bottom width of the emergency spillway, if applicable.
  - 5) Statement as to the adequacy of construction of the embankment.
- B. Excavated and Embankment Type Lagoons:
  - 1) Take enough measurements to determine that depth, slope, and storage requirements have been met.
  - 2) Record elevations of highly visible markers that delineate the top and bottom of the pumping volume. This is the temporary storage minus the 25-year, 24-hour storm and "Heavy Rain" factor.
  - 3) Statement as to the adequacy of construction of the liner, if applicable. Show areas lined on "As-Builts" and thickness of liner installed.
- C. For ramps and/or waste inlet pipes and overflow pipes, record the following:
  - 1) Location.
  - 2) Dimensions and kind of material used in structures.
  - 3) Elevation of invert of discharge to the lagoon.
  - 4) Elevation of overflow pipe.
- D. Statement of the adequacy of control of outside runoff into the lagoon.
- E. Statement of the adequacy of vegetative erosion control measures.
- F. Statement to the effect that practice meets plans and specifications.
- G. Date and signature of person making construction check.

## **Recording Data**

Field notes will be recorded in a standard engineering field book or a standard design form.