

**NATURAL RESOURCES CONSERVATION SERVICE  
CONSERVATION PRACTICE STANDARD**

**INFILTRATION DITCH  
INTERIM STANDARD**

(Ft.)  
CODE 753

**DEFINITION**

A level or contour ditch for disposing of waste waters from which solids have been removed.

**PURPOSE**

To manage agricultural waste water in rural areas in a manner that prevents or minimizes degradation of air, soil and water resources and protect public health by infiltrating the water through soil.

**CONDITIONS WHERE PRACTICE APPLIES**

This practice applies as a component of an agricultural waste management system where solids are removed from the waste water by separator tank or any other effective mean of solid separation. This practice should only be used for small operations where installation of other practices are limited by topography or farm size. Do not use infiltration ditches by themselves when the farm operation exceeds the limits on Table 1.

Table 1

<b>Farm Operation</b>	<b>Maximum Limits</b>
Swine	15 animal units/1000lb or 400 gals/day
Dairy	50 milkers or 400 gals/day
Coffee (finished)	200 hundredweights or 500 gals/day

Use smaller figure.

**CRITERIA**

**Location.** Infiltration ditches shall be designed to fit land conditions, located as close to the buildings as possible observing local rules and

regulations and at least 200 feet from a water supply well. When parallel, the spacing between ditches, shall not be less than 20 feet.

**Soils.** Locate the ditches on soils with acceptable permeability (minimum 0.3 inches per hour), avoiding clean alluvial soils next to rivers or soils over fractured or cavernous rock.

**Capacity.** The minimum capacity shall be that required to infiltrate the designed discharge in 24 hours plus storage capacity for the 10 year, 24 hour rainfall without overtopping.

**Profile.** The ditches shall be established, in so far as topography and property limits permit, on a flat grade or on the contour.

**Side Slopes.** The ditches shall be designed to have stable side slopes (minimum 1:1) based on soil characteristics.

**Dimensions.** Ditch maximum length shall be 100 feet, maximum depth shall be 2 feet, and minimum bottom width shall be 1.5 feet.

**CONSIDERATIONS**

This practice shall be planned as an integral part of a waste management system. Evaluate type and quality of effluent water, topography and soils, vegetative cover or the potential for crops, visual aspects and other special needs. Special considerations must be given to the following:

- Adequate soil drainage to ensure satisfactory performance.
- Adequate plant nutrient uptakes to ensure satisfactory plant vigor and performance.

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

- Enough rest period to maintain aerobic soil profile. Two or more alternating ditches are desirable.
- Provisions shall be made to exclude roof water and unpolluted runoff.
- Provisions shall be made to exclude livestock from the ditch area.

The effects of this practice on water quantity, water quality and the environment should be considered during the planning process. Effects to be considered are:

Effects on water budget, especially on volumes and rates of runoff, infiltration, evaporation, transpiration, deep percolation and ground water recharge.

Effects caused by seasonal variations.

Effects of vegetation on water retention within the ditch.

Effects on the nutrient budget within the ditch as related to removal, residence or accumulation of nutrients.

Filtering effect of soil on pathogens and organic load.

Effects on visual quality of onsite water resources.

Effects on site and off-site air quality, undesirable odors originating in the ditch area.

Effects on the movement of dissolved substances below the root zone toward ground water.

## **PLANS AND SPECIFICATIONS**

Plans and specifications for installing infiltration ditch shall be in keeping with this standard and shall describe the requirements for applying the practice to achieve its intended purpose.

### **Construction Specifications**

All trees, stumps, brushes, rocks and similar material that can interfere with installing the ditches shall be removed. The materials shall be disposed of in a manner that is consistent with the standards for maintaining and improving the quality of the environment and with proper functioning of the ditches.

The ditches shall be cut to line and depth shown on the plans or as staked in the field. Excess spoil shall be disposed of in areas where it does not interfere or hinder other operations. Topsoil shall be stockpiled and spread over disturbed areas to facilitate revegetation. If vegetation is needed, seedbed preparation, seeding, fertilizing and mulching shall comply with standards in local technical guides.

### **Documentation**

As a minimum, the plans and specifications shall include location, typical cross sections, grade and length of ditches. Appropriate survey notes will be included.

## **OPERATION AND MAINTENANCE**

Infiltration ditches shall be operated in an alternate fashion, providing a rest period to allow them to drain and/or maintenance. Since the removal of solids from waste water is an imperfect operation, removal of any sludge built up in the ditch is essential. Removed sludge should be incorporated on the land or disposed of properly. Ditches must be free from vegetation that might reduce its capacity or adequate performance. Maintenance needs are to be discussed with the landowner or operator who is responsible for maintaining the practices installed with NRCS assistance.