

4.6 Evapotranspiration and Evapotranspiration/Infiltrative Systems

Revision: July 9, 2012

Installer registration permit: Complex

Licensed professional engineer required: Yes

4.6.1 Description

An evapotranspiration (ET) system is composed of a sand and gravel bed contained within an impervious lining, which receives septic tank effluent and in which evaporation through the system's surface and plant transpiration are the sole means of effluent removal. All forms of ET systems function best where the climate is dry and hot. Preferably, the difference between the site precipitation and evapotranspiration provides water loss of 2 inches per month on average.

An ET system that allows some wastewater to infiltrate the subsurface can be allowed under the proper site conditions and source attributes. This is an evapotranspiration infiltrative (ETI) system. An ETI system has more restrictive site and design constraints because of the additional wastewater discharge path into the surrounding soils.

Due to the complex water balance calculations for system sizing, coupled with liner design and construction details, these systems must be designed by a PE licensed in Idaho, or professional geologist (PG). Construction requires the services of a licensed Complex Alternative System Installer as specified in IDAPA 58.01.03.006.01.b.

Because of the impermeable liners, ET systems are classified among the non-discharging wastewater systems. This is different from ETI systems, which discharge a small amount of wastewater to the soil. Sites with soils that have percolation rates greater than 120 minutes/inch (3.5×10^{-4} centimeters per second [cm/s]) and have site attributes that meet both the minimum vertical and minimum horizontal setback distances for design group C soils may be suitable for installation of a properly designed and constructed ETI system.

4.6.2 Approval Conditions

1. The site must not be subject to flooding.
2. Ground water
 - a. For ET systems, high ground water, seasonal or normal, must not come within 6 inches of the bottom of the impervious liner.
 - b. For ETI systems, vertical separation distances must meet the minimum distance requirement for design group C soils (section 2.2.2, Table 2-5).
3. Soil
 - a. ET systems may be approved where soils:
 - 1) Are very thin
 - 2) Are classified unsuitable as defined in IDAPA 58.01.03.008.02.b.
 - b. ETI systems are restricted to sites with soils that are classified as *Unsuitable* through use of the soil texture determination flowchart (section 2.1.1, Figure 2-2), exhibit unacceptably low infiltration (section 2.3, Table 2-9), and the site attributes meet