

**340-071-0290****Conventional Sand Filter Systems**

- (1) Criteria for approval. Construction of conventional sand filter systems may be approved for single family dwellings or commercial facilities.
- (2) Sites approved for sand filter systems. Sand filters may be permitted on any site meeting requirements for standard onsite systems in OAR 340-071-0220 or for pressurized distribution systems in OAR 340-071-0275 if site conditions in this section can be met.

(a) Separation from the temporary groundwater table must satisfy the requirements in this subsection.

(A) The high level attained by a temporary groundwater table is:

(i) Twelve inches or more below ground surface where:

(I) The ground slope does not exceed 12 percent;

(II) Equal distribution methods are achieved by gravity or the use of either a hydrosplitter or pressurized distribution method; and

(III) A capping fill is placed in accordance with OAR 340-071-0265(2) and 340-071-0265(3)(a) through (c).

(ii) Eighteen inches or more below ground surface where equal distribution methods are achieved by gravity or through the use of a hydrosplitter or pressurized distribution. (iii) Twenty-four inches or more below ground surface where serial distribution methods are used.

(B) Methods used in OAR 340-071-0315 for tile dewatering systems may be used to achieve separation distances from temporary groundwater.

(C) Absorption trenches may not be installed deeper than the highest level of the temporary water table. The minimum backfill depth within the absorption trenches is 6 inches for trenches using equal distribution methods and 12 inches for trenches using serial distribution.

(b) Separation from the permanent groundwater table must satisfy the requirements in this subsection.

(A) The highest level attained by a permanent water table does not exceed the minimum separation distance from the bottom of the absorption area as follows:

(i) For gravel and Soil Group A: sand, loamy sand, sandy loam - 24 inches;

(ii) For Soil Group B: loam, silt loam, sandy clay loam, clay loam - 18 inches;

(iii) For Soil Group C: silty clay loam, silty clay, clay, sandy clay - 12 inches.

(B) Shallow absorption trenches placed not less than 12 inches into the original soil profile may be used with a capping fill to achieve separation distances from permanent groundwater. The fill must be placed in accordance with OAR 340-071-0265(2) and 340-071-0265(3)(a) through (c).

(C) Methods used in OAR 340-071-0315 for tile dewatering systems may be used to achieve separation distances from permanent groundwater.

- (c) Sand filter systems installed in soils with rapid or very rapid permeability in areas with permanent water tables may not discharge more than 450 gallons of effluent per 1/2 acre per day except where:
  - (A) Groundwater is degraded and designated as a nondevelopable resource by the Oregon Water Resources Department; or
  - (B) A detailed hydrogeological study determines loading rates exceeding 450 gallons per 1/2 acre per day would not increase nitrate-nitrogen concentration in the groundwater beneath the site or any downgradient location to above 5 mg/L.
- (d) Sand filter systems may be installed in soils, fractured bedrock, or saprolite diggable with a backhoe if, in the judgment of the agent, the soils, fractured bedrock, or saprolite is permeable to the extent that effluent will absorb adequately and not hinder the performance of the filter or absorption field. The agent may require that an absorption test be conducted to determine the permeability of the bedrock or saprolite. Test methods must be acceptable to the department.
  - (A) Where ground slope does not exceed 12 percent, a capping fill, 12-inch deep trench may be installed in accordance with OAR 340-071-0265, except that when installed in fractured bedrock or saprolite, the cap material must be Soil Group B.
  - (B) Where ground slope exceeds 12 percent but is not greater than 30 percent, a standard 24-inch deep trench may be installed.
- (e) A sand filter absorption facility may be installed on slopes of 30 percent or less if other conditions in this section are satisfied.
- (f) An absorption facility following a sand filter may be installed on slopes above 30 percent and up to 45 percent where:
  - (A) Projected daily flow does not exceed 450 gallons and the installation is sized in accordance with sand filter absorption area criteria;
  - (B) The soil is diggable with a backhoe to a depth of at least 36 inches and 12 inches below the bottom of the trench; and
  - (C) The temporary water table is at least 30 inches below the ground surface and 6 inches below the bottom of the trench.
- (g) Setbacks in **Table 1** can be met, except the minimum separation distance between the sewage absorption area and surface waters must be at least 50 feet.

(3) Absorption trenches. Absorption trenches for sand filter absorption facilities must satisfy the requirements in this section.

- (a) The minimum length of a standard absorption trench per 150 gallons of projected daily sewage flow is:
  - (A) For gravel and Soil Group A: sand, loamy sand, sandy loam -- 35 linear feet;
  - (B) For Soil Group B: loam, silt loam, sandy clay loam, clay loam -- 45 linear feet;
  - (C) For Soil Group C: silty clay loam, silty clay, sandy clay, clay -- 50 linear feet;
  - (D) For permeable saprolite or fractured bedrock -- 50 linear feet;
  - (E) For high shrink-swell clays (Vertisols) -- 75 linear feet.