

Scenario

- Landowner would like to build a cabin on the north end of his pond. Would the soils in this area be suitable for an on-site sewage disposal system?

Site/Soils characteristics

- Slope
- Texture (subsoil)
- Natural soil drainage (wetness features)
- Limiting layer (dense till, fragipan, coarse sand & gravel)
- Heavy clay soils

Criteria for on-site sewage disposal

- Slope of fifteen percent (15%) or less.
- Well drained soils need no perimeter drain
- Disturbed soils are not acceptable
- >24" from bottom of leach field trench to highly permeable layer
- No Ponding
- No Flooding
- >50 foot from water well
- >50 foot from pond

Useful terminology

Densic material have, at their upper boundary, a densic contact if they have no cracks or if the spacing of cracks that roots can enter is ten (10) centimeters (cm) or more.

Fill means soil transported and deposited by man, as well as soil recently transported and deposited by natural erosion forces. Fill is evidenced by one (1) or more of the following:

Perimeter drain means a subsurface drainage system that completely surrounds a soil absorption system for the purpose of lowering a seasonal high water table or preventing movement of subsurface water into a soil absorption system site.

Seasonal high water table means the upper limit of soil saturated with water for periods long enough for anaerobic conditions to affect soil color.

Soil loading rate means the allowable rate of application of septic tank effluent to the soil. It is expressed in gallons per day per square foot.

All soil horizons at the site from the original grade to thirty-four (34) inches below the original grade have a **soil loading rate of not less than twenty-five hundredths (0.25) and not more than one and twenty-hundredths (1.20) gallons per day per square foot** as determined from Table IV, as follows:

Table IV - Soil Loading Rates for Subsurface Trench On-site Sewage Systems (in gpd/ft ²)								
SOIL STRUCTURE CLASSES								
SOIL TEXTURE CLASSES	Single Grain	Granular	Strong: Angular, Sub-Angular Blocky, Prismatic	Moderate: Angular, Sub-Angular Blocky, Prismatic	Weak: Angular, Sub-Angular Blocky, Prismatic; Platy ¹	Fragile Characteristics: Very Coarse Prismatic	Structureless, Massive, Friable, V. Friable	Structureless, Massive, Compact, Firm, V. Firm; Platy ²
Gravel, Coarse Sand	>1.20	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Loamy Coarse Sand, Medium Sand	1.20	1.20	N/A	N/A	1.20	N/A	N/A	N/A
Fine Sand, Loamy Sand, Loamy Fine Sand	0.75	0.60	N/A	0.75	0.75	N/A	0.75	N/A
Very Fine Sand, Loamy V. Fine Sand	0.50	0.50	N/A	0.75	0.60	N/A	0.60	N/A
Sandy Loam, Coarse Sandy Loam	N/A	0.75	N/A	0.60	0.60	0.00	0.60	0.00
Fine Sandy Loam, V. Fine Sandy Loam	N/A	0.75	N/A	0.60	0.60	0.00	0.60	0.00
Loam	N/A	0.75	0.75	0.50	0.50	0.00	0.50	0.00
Silt Loam, Silt	N/A	0.75	0.75	0.50	0.30	0.00	0.30	0.00
Sandy Clay Loam	N/A	0.60	0.60	0.50	0.30	0.00	0.30	0.00
Silty Clay Loam, Clay Loam, Sandy Clay	N/A	0.60	0.60	0.30	0.25	0.00	0.25	0.00
Silty Clay, Clay	N/A	0.60	0.50	0.30	0.25	N/A	0.25	0.00
Organic Soil Materials	N/A	N/A	N/A	N/A	N/A	N/A	0.00	N/A
Limnic Soil Materials	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.00
Bedrock	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
N/A NOT APPLICABLE								
¹ Naturally occurring platy structure.								
² Platy structure caused by mechanical compaction has a soil loading rate of 0.00 gpd/ft ² unless broken up by methods approved by the department.								

Scenario 1

- Profile from North end of pond site

Scenario 2

- Somewhat poorly drained soil profile

Scenario 3

- Well drained soil profile

Questions

1. Site is 16% slope. Can you install a traditional septic system?
2. Site is 4% slope. Can you install a traditional septic system?
3. Site is well drained. Do you need a perimeter drain?
4. Site is somewhat poorly drained. Do you need a perimeter drain?
5. Site is 30" to dense glacial till. Can you install a traditional septic system?
6. Site is 45" to a fragipan. Can you install a traditional septic system?
7. The bottom of the leach line trench is 20". Coarse sand and gravel start at 42". Can you install a traditional septic system?
8. The soil profile has a 15" layer with a heavy clay content in the upper 30". Should you install a traditional septic system?
9. The site occurs within the 100 year flood frequency zone. Can you install a traditional septic system?
10. The site is frequently ponded with water up to 8" deep. Should you install a traditional septic system?
11. My leach field will be located 45 feet from my water well. Can I install a traditional septic system?
12. My leach field will be located 60 feet from my pond well. Can I install a traditional septic system?