



Test Hole Basics

Why do I need to dig a Test Hole?

Test Holes will allow you to determine a number of critical site characteristics which are necessary for you to know before you design your liquid waste system. The main characteristics you can determine with a test hole are: the soil type, the depth to seasonal high water and depth to any limiting layers like bedrock or boulders.



When are Test Holes Required?

Test holes are required for all liquid waste permit applications, with one exception. If you are very familiar with the soil characteristics in the area and you can provide documentation to the department, a test hole may not be required. This decision will be made by the NMED Inspector. If I am required to do a test hole I will be required to complete a Test Hole Log, which shows the soil horizons.

How deep do Test Holes need to be?

Test holes must be dug to a depth that is 4 feet deeper than the bottom of your trench (See diagram below)

How many Test Holes do I need to dig?

Usually one test hole will be adequate, however sites with variable soil characteristics and terrain, it is recommended that you dig two test holes located at opposite ends of the proposed disposal field

Where do I dig the Test Hole(s)?

You should dig your test hole(s) near the proposed location of your disposal field, but not in it.

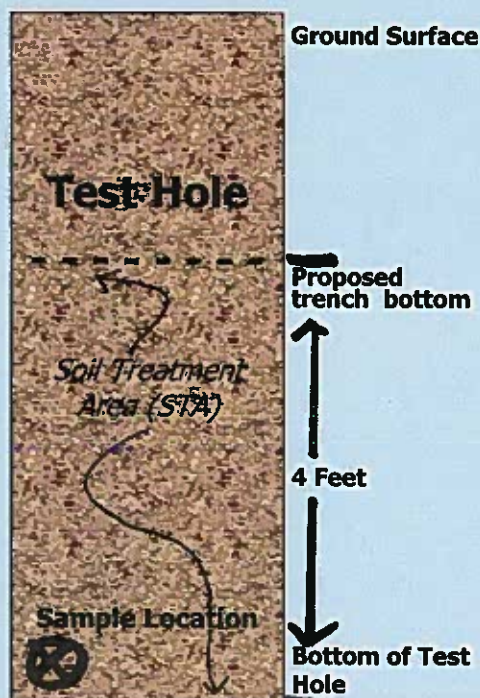
What am I looking for in the Test Hole? You are primarily looking for three things:

- What type of soil do I have? Is there any clay?
- What is the depth to seasonal high-water level?
- What is the depth to bedrock or other limiting layers?

(See Back Page for guidance on how to de-

Minimum Depth of Test Hole

Your test hole must be 4 feet deeper than the proposed depth of the bottom of your trench



REMEMBER TRENCH SAFETY

- Never enter an unprotected trench or test hole. Take your soil samples from the excavation spoils deposited by backhoe
- Trenches 5 ft or deeper require a protective system
- Inspect trenches at the start of each shift or after a rainstorm
- Keep heavy equipment and excavation spoils at least 2 ft away from trench edge
- Provide stairways, ladders, ramps or other means of access in all trenches 4 ft or deeper

How do I determine the Type of Soil? Be aware that the ability to determine such qualities like "soil texture" comes with experience. Your main focus should be to study the soil directly below where the drainfield will be, this area is now commonly referred to as the Soil Treatment Area (STA). It is within the STA where most of the treatment happens and this is where you should select your soil sample for soil analysis. You should select a sample from the horizon which appears to be the most restrictive in allowing water to infiltrate through the soil. For a detailed procedure on how to determine the soil type ask your NMED inspector for the handout on "**Soil Texture by Feel.**" New Mexico basically has 5 types of soil but they generally fall into three categories: coarse sand, clay and anything in-between (mixtures of loams, sands, silts and clays).



Soil Textures in New Mexico

There are 5 soil types defined in the NMED Liquid Waste Regulations, but these can be simplified into three categories

- 1. Type 1A– Coarse Sand**
- 2. Includes all of the following: Type Ib (Medium Sand, Loamy Sand); Type II (Sand Loam, Fine Sand, Loam), Type III (Silt, Silt Loam, Clay Loam, Silty Clay Loam, Sand Clay Loam); and**
- 3. Includes all of the following: Type IV - Sandy Clay, Silty Clay and Clay**

Basically, when you are sampling your soil, you are asking yourself whether this is a clay, a coarse sand or somewhere in-between?

with water. Once the coating is removed, it will not recoat the particle and the soil particles will remain gray even when the SHWT drops during a portion of the year. If you see an increase in red soil colors above the gray colors, this may indicate the height to which the water table rises. Think of the red colors that exist above the gray colors as a bathtub ring. The depth to your SHWT will be measured from the ground surface to the shallowest depth in your soil profile which shows gray soil coloring or red soil coloring above it. If your soil is gray, measure to the top of the gray; if your soil is gray with red above it, measure to the top of the red horizon.

How do I determine the depth to the Seasonal High Water Table (SHWT)?

For many sites, the seasonal high water table will be below the depth of your test holes. You can use local well logs from your property or adjacent properties to estimate this depth. For those properties that have shallow groundwater you will need to examine the soil horizon in your test hole and. The most common way to determine SHWT is to look for the occurrence of gray colored soil. The gray color occurs when coatings of rust (iron oxides) on soil particles are "washed off" when the soil is saturated

How do I determine the depth to Limiting Layers of Bedrock, Caliche or Tight Clay?

The depth to these site conditions will limit the ability of your system to move the liquid through and away from your system. If you hit bedrock or caliche, you will want to consider moving your drainfield to a different location on your property. Remember, that you will need a minimum of 4 feet of suitable soil beneath your disposal field in order to treat the wastewater. Remember, If you do not observe any of these layers in your test holes it does not mean that will not hit them when you dig your disposal field.



Dull gray general soil background, or matrix color, and bright red-orange iron concentrations, or mottles, indicate a fluctuating water table.
Corps of Engineers

Test Hole Log

Name of Applicant: _____ Site Address: _____

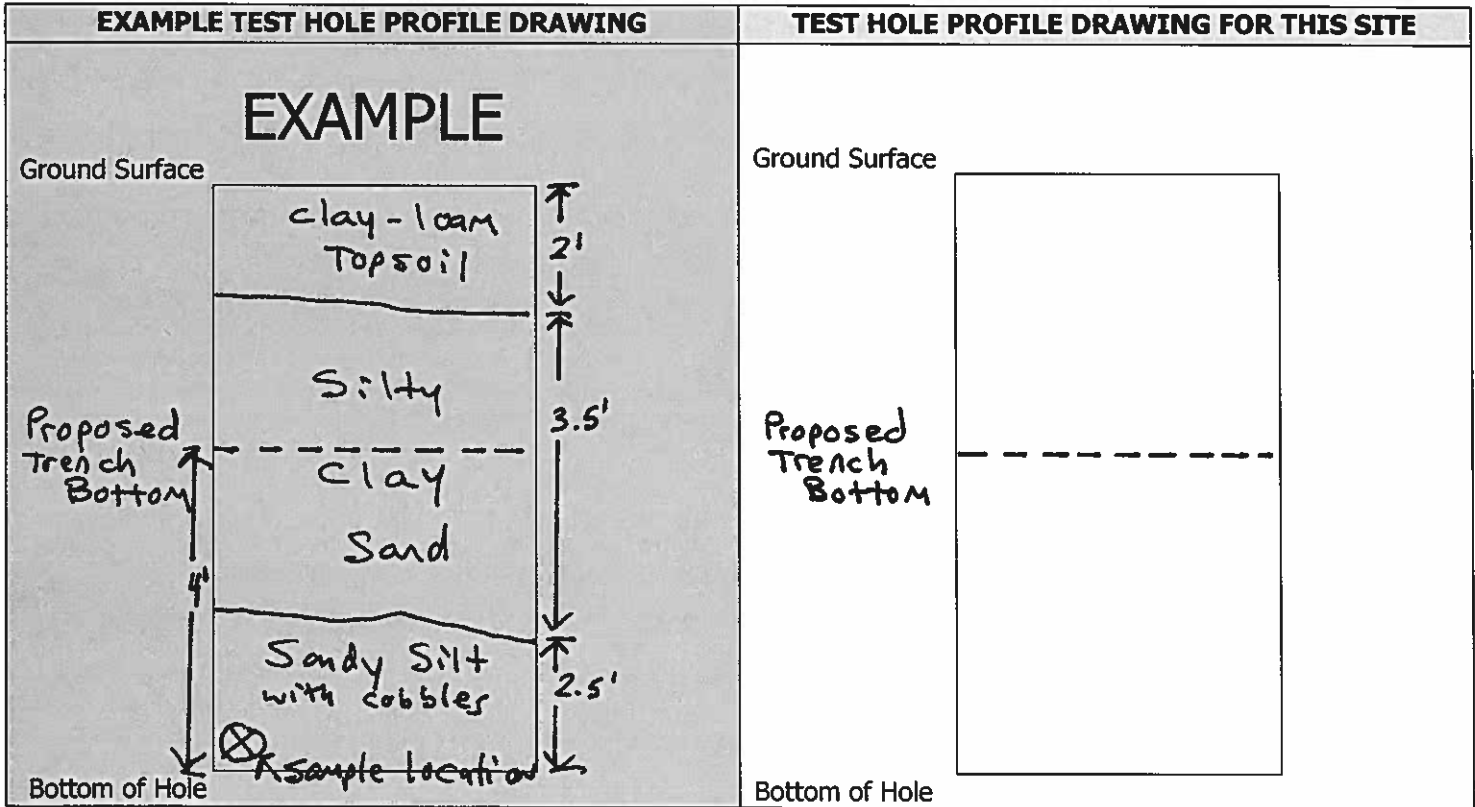
- The digging of test holes and the completion of this Log are required as part of your submission for a liquid waste permit (except as noted below)
 - Your NMED inspector will determine whether or not they want to visually inspect your test hole
- NOTE: Your NMED inspector may also decide that a test hole and Test Hole Log is not needed in areas where soil types are well characterized and depth to seasonal high groundwater is well documented. Documentation may be required.*

Please answer these questions:

1	Was the depth of your test hole at least 4 feet deeper than the proposed trench bottom depth?	<input type="checkbox"/> YES <input type="checkbox"/> NO
2	Was the test hole located in an area adjacent to the proposed disposal field?	<input type="checkbox"/> YES <input type="checkbox"/> NO
3	Did you Perform a Soil Analysis using "Soil Texture by Feel" handout?	<input type="checkbox"/> YES <input type="checkbox"/> NO
4	Was your sample taken from the area located 4 feet below the proposed trench bottom?	<input type="checkbox"/> YES <input type="checkbox"/> NO
5	Was your sample taken from the most restrictive soil horizon?	<input type="checkbox"/> YES <input type="checkbox"/> NO
6	Were there any signs of seasonal high water level or any seepage evident in your test hole?	<input type="checkbox"/> YES <input type="checkbox"/> NO
7	Were there any signs of bedrock, boulders or any limiting layers in your test hole?	<input type="checkbox"/> YES <input type="checkbox"/> NO

**Remember
Trench
Safety
Never Enter
Unprotected
Test Hole**

- Please make sure that the Test Hole Profile Drawing for your site includes all of the following:**
- Depth of proposed trench bottom (measured from ground surface)
 - Label the soil type you found in each horizon (ie. silty-sand-loam) and depths of each layer
 - If Applicable, Depth to Seasonal High Water Level
 - If Applicable, Depth to Bedrock or large boulders or other limiting layer
 - Identify approximate location on diagram where most-restrictive-layer sample was taken, mark with an ⊗



By signing Below, I understand that the department may cancel a permit if they determine that material information in the application is false, incomplete or inaccurate and the correct information would have resulted in the department denying the permit.

Name of Contractor/Installer Printed

Signature of Contractor/Installer

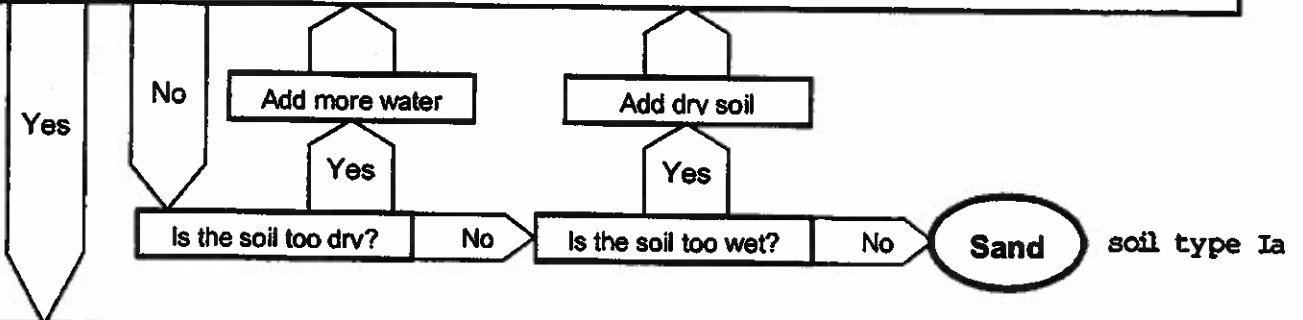
Date

Soil Texture by Feel

Test conducted by _____

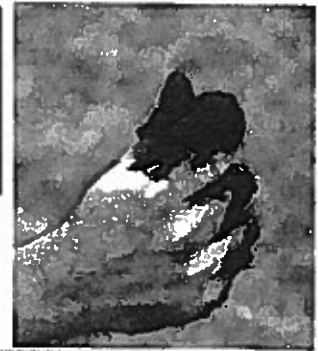
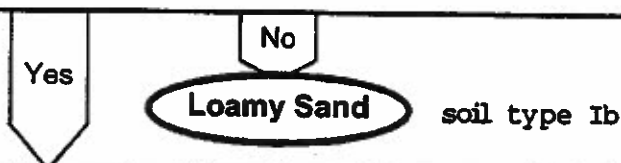
Start: Place soil in palm of hand. Add water drop-wise and knead the soil into a smooth and plastic consistency, like moist putty.

Does the soil remain in a ball when squeezed?



Place ball of soil between thumb and forefinger, gently pushing the soil between with the thumb, squeezing it upward into a ribbon. Form a ribbon of uniform thickness and width. Allow ribbon to emerge and extend over the forefinger, breaking from its own weight.

Does the soil form a ribbon?



What kind of ribbon does it form?

