Appendix I. Soil Identification Procedures

Note: These tests were conducted at each site to determine the soil texture (soil type).

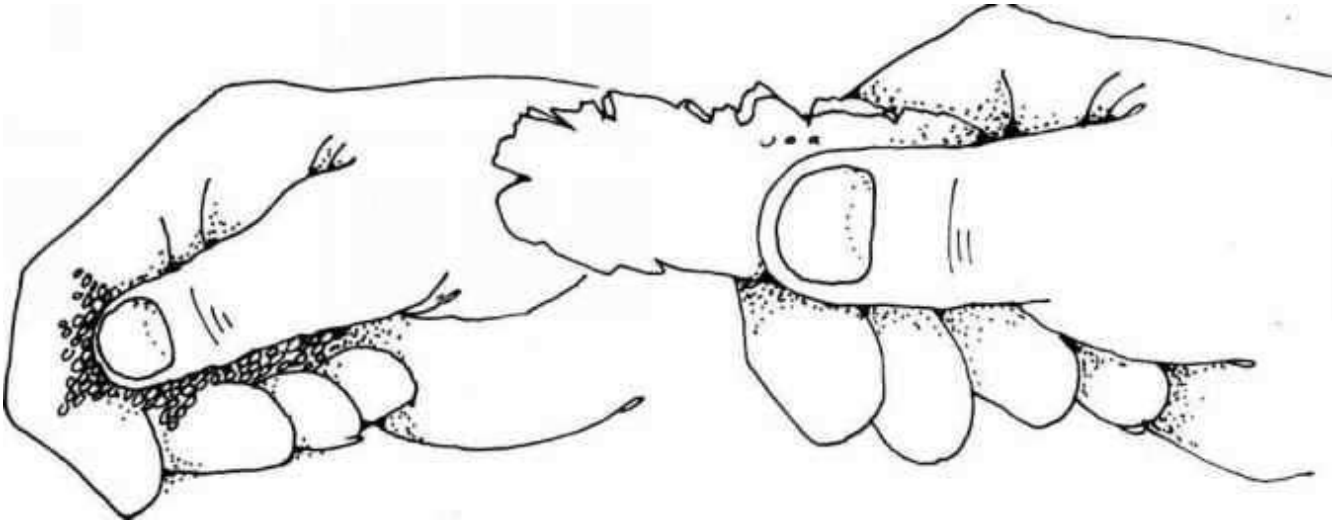
Test 1: Soil Ribbon Test
Pick up several handfuls of soil adjacent to the mulch basins and mix them together on the ground in a pile until it seems homogeneous. Pick out a typical pile of soil, 2" tall and wide, about the size of a walnut.

Remove all the roots and pebbles from the soil. You may need to add more soil to have a pile the size of a walnut.

Add water to the soil until it is like toothpaste, not a slurry. If you add too much water, add more soil. Mix the paste around on your palm and notice if the soil is mostly sandy, or has a fine gritty feel (which means it has silt) or very smooth (which means it is clay rich). Keep mixing and kneading the soil for a minute or two until it is uniform and any lumps of clay have been thoroughly wetted. You may need to add a little more water to it.

Now, make a ball out of the soil. **If it will not make a ball the soil is sand.**

If the soil will make a ball, try to form a ribbon. To make a ribbon, place the ball of soil in your hand between your thumb and forefinger, gently squeeze the soil, and push it upwards into a ribbon (see image). Let the ribbon break from its weight. Don't try and mold the soil into a ribbon by rolling it in your palms. **If it will make a ball but not a ribbon, it is a loamy sand.**



If you can **form a ribbon** but it breaks into pieces that are **less than an inch** (2.5 cm) long, you have some kind of loam. I**f you can feel many sand grains, it is a sandy loam, if not, it is loam**.

If you can **form a ribbon** that is **more than an inch long**, perhaps even two inches, you have a **clay loam. If it is sandy feeling it is a sandy clay loam.**

If the soil will **form ribbons more than two inches (5 cm) long it is clay**. It will probably be shiny when wet. If you can feel many sand particles it is sandy clay.

Summary Characteristics of Soil Sample---------- Soil Texture

Soil does not stay in a ball. Loose and gritty feeling when moistened.----------**sand**

Soil forms a ball, but will not form a ribbon.----------**loamy sand**

Soil ribbon forms but breaks at less than a inch long AND you
feel many sandy grains---------- **sandy loam**
don't feel sandy grains----------**loam**

Soil ribbon is between 1 and 2 inches ---------- **clay loam**
feels sandy----------**sandy clay loam**

Soil ribbon forms longer than 2 inches AND is
shiny---------- **cla**y
has many sand particles----------**sandy clay**

By now the soil may be drying out. You may need to add a little water.

Test 2: Soil "Worm" Test

Now, roll the soil into a "worm." If you can made a long thin "worm", resembling a wire, you have clay or sandy clay, if you can feel the sand grains. If you can not make a worm, the soil is sand. If you can make a thick worm, the soil is loamy.

Test 3: Soil "Cube" Test

Now, shape the worm into a cube and put it in a dry place inside to dry out. Next day, try to break the cube. If the dry cube just falls apart, it is sand or silt depending on the sandy or gritty feel. If the dry cube is very strong and perhaps impossible to break by hand, it is clay.

References:

Adapted from Alameda County Waste Management Authority and Source Reduction and Recycling Boards (StopWaste.org), 2010, and Thein, S.J., 1979; The Nature and Properties of Soils 14th Edition. Brady, Nyle and Weil, Ray; and Soils and Soil Fertility 6th Edition. Troeh, Frederick and Thompson, Lois. Blackwell Publishing