

**geotech.org**  
 World Headquarters  
 4945 South Routh Street  
 Littleton, CO 80127

**geotech.org**

**Geochemical Sampling Instructions**

The nice thing about surface exploration geochemistry is that you can use it at pennies on the exploration dollar. Your exploration costs do not “go through the roof.” You probably have your leases prioritized, which gives you a good place to start this summer’s program. Work on the high priorities first, and then work backwards to lower priorities. If leases are close in proximity, run continuous sample grids over both. The more data points the better the interpretation. Also the more samples obtained on the first pass the better the interpretation. Repeat samples when going back for detail. Work around potential drilling locations defined by your seismic and well logs. Producing wells should be included whenever possible for analogs and signature confirmation. This will help determine if wells are in communication with each other, or single well reservoirs.

Use a GPS. This will make plotting the data much easier and the maps can be set to a real scale. Please use UTM’s if possible. If you use latitude / longitude, set the GPS to decimal minutes. Make sure you send the UTM zone and datum for mapping purposes.

On road surveys, please sample from the same side of the road. Take samples beyond fence lines. Stay out of drainage ditches and culverts. Sample the high ground when possible. In cultivated areas get below the plow or disc depth.

Where you have grass or plants, scoop out a hole using the trowel and then take your sample. Try to keep you samples relatively shallow. There is no need to go deeper than 4 or 5 inches in normal sampling situations. The same preparation is used for all the different analyses. They are all dried and sieved. Analysis will determine digestion and extraction (stuff you do not have to worry about). Send the samples to me UPS, FedEx, etc. Make the boxes small and not extremely heavy for easy handling. You should easily get about 50 to 80 samples in a 12 in x 12 in x 12 in box.

Use a sharpie or other permanent marker for labeling. Label the bags in several places so that if a number rubs off during shipping identifying the sample is still possible. You do not have to use fancy labels unless you want to. (Labels tend to come off during transport).

Attached is a series of pictures that may help. The idea is to get a representative soil sample at the sample location. At sample location A, scrape away loose unconsolidated soil. Sample the consolidated subsoil. You will not need very much. Move over to B, scrape away the unconsolidated topsoil and then take a small amount of consolidated material. Move over to C, scrape way the unconsolidated topsoil and then take a small amount of consolidated material. About a third of a bag total is required to yield enough sieved fraction to run the analyses.


Form 71905

*Using today’s technology to detect the past.*



Figure 1. The Tools of the Trade. A simple garden trowel and a labeled ziploc sandwich bag.

geotech.org



Procedure for acquiring a representative soil sample.

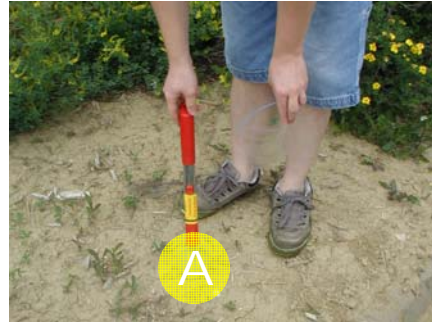


Figure 2. At the sample location, scrape away the loose topsoil and take a small amount of dirt.



Figure 3. Place the dirt in a labeled ziploc bag.

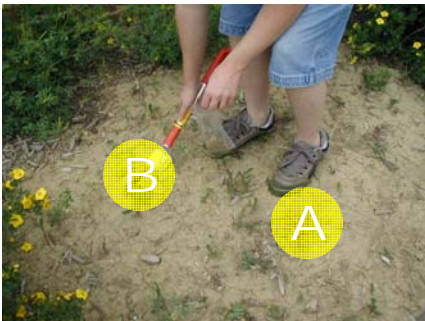


Figure 4. Scoot over a foot, scrape away the loose topsoil, and take another scoop of dirt.

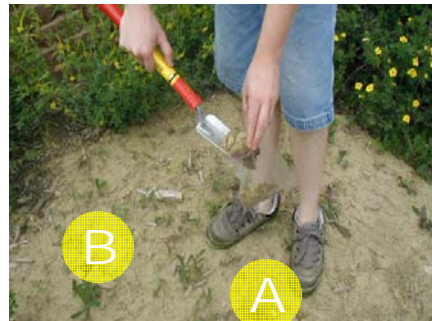


Figure 5. Place the dirt in the same ziploc bag as the first scoop.

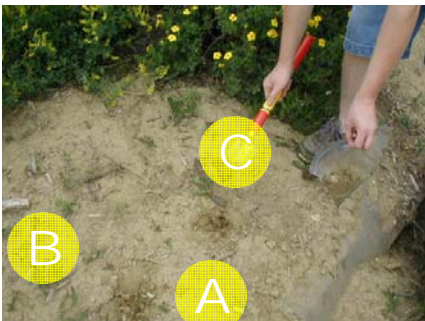


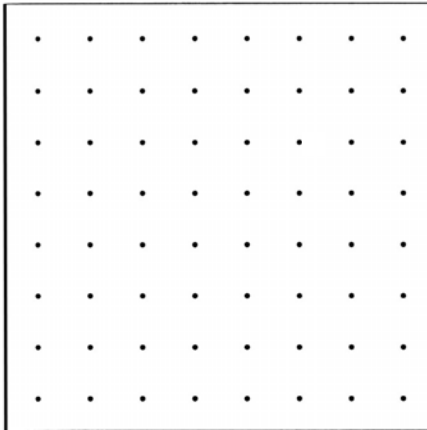
Figure 6. Move a short distance to another spot, scrape away the loose topsoil, and take a third scoop of dirt.



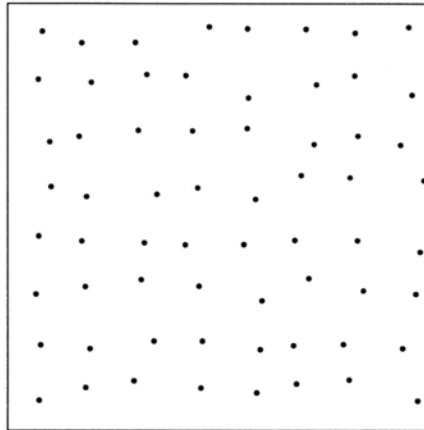
Figure 7. Place the dirt in the same ziploc bag as the previous two scoops and seal it. The sample is complete.

## Possible Grid Patterns

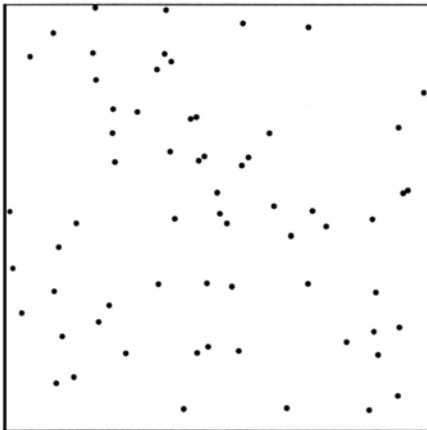
Regular



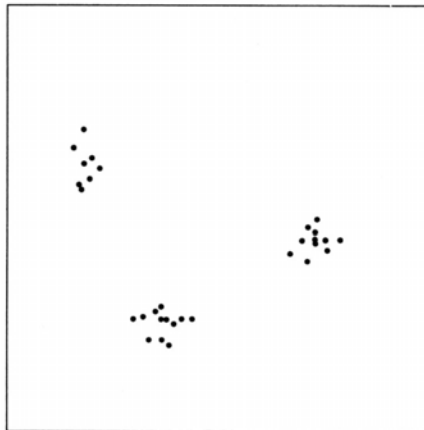
Uniform



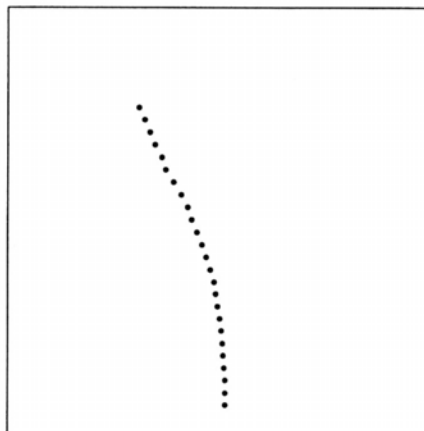
Random



Clustered



Traverse



geotech.org



**Regular:** planned rectangular or triangular grid.

**Uniform:** planned by randomisation within grid squares.

**Random:** unplanned and forced by terrain or obstacles.

**Clustered:** unplanned and forced by patchy distribution of sample location exposures.

**Traverse:** planned and forced by terrain or access constraints.

Form 71705  
From Swan and Sandilands, 1995