*Collaboration on*: El Verde GHG Array soil depth profile – microbiology analyses

*With*: J. Pett-Ridge, LLNL

December 8, 2015

*Included here:*

* Details about the soil sampling done on three soil pits within the GHG array in December 2015
* This is primarily a record of the sampling logistics

*What else is Christine supposed to deliver? a.k.a. forthcoming things:*

* There are details in the below that I need to check on; these are highlighted
* I’ll send the labeling key for the samples once I have my field notebook in front of me

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**Protocol (logistics):**

*Objective*: collect a 10 cm core of soil for microbiology analysis centered at 15, 30, 45, 60, 75, and 90 cm depths for an El Verde catena ridge, slope and valley locations

- Field sampling was done at El Verde research station in the Silver Lab greenhouse gas array on Monday, Dec. 7, 2015.  Field participants were C. S. O’Connell, R. Salladay, and B. T. Wickets.

- For each sample, we took a large auger (diameter X cm) and augered to 5 cm prior to the desired collection depth (e.g., for collection of microbiology soil sample at 15 cm depth, we augered to 10 cm depth); we’ll refer to this wider auger hole as the “pit."

- This auger was cleaned of visible soil with water between each soil pit series, but not between each depth for a given pit.

- Generally, pit margins were clean and there was not much crumbling of pit wall soil into the pit bottom.

- A smaller soil corer (diameter Y cm) was cleaned using rubbing alcohol (70% ethanol) and kimwipes.

- This soil corer was carefully inserted into the pre-augurer pit and used to extract a 10 cm core from the bottom of the pit.  This core then represents the 10 cm of soil +/- 5 cm around the recorded depth ID (i.e., from the previous example, an auger hole was made to 10 cm, the corer was used to collect soil from 10-20 cm, centered on the desired 15 cm depth).  Ideally, we hoped to collect at least 50 g of soil per sample.

- Generally, the soil corer did not touch the soil pit wall as it was being lowered to the pit bottom; there was enough clearance to keep the soil corer from interacting with soil from other depths.  Unfortunately, there was not enough clearance to allow for two side-by-side core samples from each pit; we hope that the amount of soil collected for each sample is adequate.

- The collected soil was carefully transferred by hand into either a falcon tube or a newly unpackaged ziploc bag.  The transferrer wore nitrile gloves and changed to a fresh glove between each sample.

- The falcon tubes/ziplocs of soil were capped/sealed and transferred in the field to a small cooler filled with dry ice.  Visual inspection indicated that samples were frozen within several minutes.

- Labeling details can be found on the associated spreadsheet sent by C. S. O’Connell (still being collated).

- After field collection, samples were transferred from the field cooler into a specialized dry ice styrofoam box for shipping (Company info A, details B).  We layered the dry ice and samples to maximize the likelihood that samples will remain frozen until arriving at LLNL.

- Samples were shipped to LLNL on 2015/12/8 (shipping info XYZ).