

Submitting Samples to Woods Hole NOSAMS

- 1) Select identifiable pieces to be cleaned and dated. If charcoal from soil, it is important to select single pieces if at all possible, or multiple pieces if you are sure they are part of a larger piece. If from lake sediment, the material should be an identifiable terrestrial macrofossil (ideally a short-lived plant part, such as a conifer seed or needle). Note: when sieving for macrofossils, isolate potentially identifiable macrofossils as rapidly as possible. If possible, weigh each sample (a sample mass is needed for the sample submission form).
- 2) Clean samples with warm HCl/KOH/HCl procedure. *Use gloves, work in the fume hood, and do not leave the caps off of any tubes for too long. This will help prevent dust/other modern carbon from contaminating your samples, and also keep you safe! Always use ddH₂O/ultrapure water when mixing chemicals and if you are doing any water-only rinses.*
 - a. Place each sample in new 15 mL plastic centrifuge tube (with screw-on orange caps, without a paper or foil liner).
 - b. Add enough 10% HCl to cover the sample and heat at 80°C for 5 minutes in the heating block.
 - c. Using glass pipettes with rubber bulb (Pasteur pipette), pipette off liquid, being careful to not remove large pieces of sample. Do NOT use the same pipette for multiple samples. (Use Styrofoam centrifuge tube trays to hold pipettes in between rinse steps.)
 - d. Add at least 5 mL of 10% KOH and heat at 80°C for 20 minutes
 - e. Using same glass pipettes with rubber bulb used in step (c) (but do not mix pipettes between samples!), pipette off liquid, being careful to not remove large pieces of sample (but do remove detritus that was adhered to the sample).
 - f. Repeat (d) and (e) as many times as necessary until liquid is very light brown or nearly clear in color.
 - g. Add enough 10% HCl to cover the sample and heat at 80°C for 5 minutes.
 - h. Rinse with ddH₂O (no heating needed).
 - i. Pipette off all liquid.
 - j. Place all samples in drying oven at 60°C overnight/until they are dry. Keep track of which cap belongs to which sample, and loosely cover sample tubes and caps (e.g., with foil) to keep any dust etc., from contaminating your samples.
 - k. Discard pipettes in glass disposal.
- 3) If desired, photograph your samples using any of the lab microscopes and cameras. (If you are removing them from the sample tubes, be careful to clean any tools you use between samples to avoid cross-contamination.), Place photos of samples on the Paleo server, in your project folder under 'Site Data'; name the photo file with sample code.

- 4) Once you are done with all of your sample processing/photography/etc., seal the caps on the tubes using electrical tape.
- 5) On the NOSAMS website (<http://www.who.edu/nosams/home>), you can check the recent turnaround time (<http://www.who.edu/nosams/turnaround>), fees (<http://www.who.edu/nosams/fees>), information about sample handling ([http://www.who.edu/nosams/Submitting Guidelines](http://www.who.edu/nosams/Submitting_Guidelines)), and how AMS dating works (<http://www.who.edu/nosams/radiocarbon-data-calculations> and <http://www.who.edu/nosams/what-is-carbon-dating>). Once you are ready to submit your samples, go to <http://www.who.edu/nosams/Portal> to access the sample submission portal and find the address that samples should be shipped to.