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Mary Lardie Gaylord flame-sealing organic carbon samples in combustion tubes on the vacuum-line system.



Transferring pre-treated wood on filter to a petri dish for drying.



Josh Burton sets up to sparge a suite of acidified seawater samples.

The Sample Preparation Laboratory

The Sample Preparation Lab (SPL) is staffed by 4-5 full-time technicians who process all natural carbon samples submitted to the facility and produce graphite (solid carbon) samples for AMS analysis, including standards and blanks. Members of the SPL maintain and upgrade apparatus as well as the automation software that controls all processes.

Procedures and Laboratory Capabilities of the SPL

Isolation of organic materials

- Preparative capillary gas-liquid chromatography (PCGC)
- High-performance liquid chromatography
- Acid-base-acid removal of carbonate and humic acids

Conversion of samples to CO₂

- Acidification of carbonate minerals
- Organic carbon, combustion
 - Elemental analyzer (> 1% C)
 - Sealed-tube combustion
- Dissolved inorganic carbon in natural waters
- Acidification and purging

Conversion of CO₂ to graphite and analysis of ¹³C in CO₂

- Automated systems
 - Samples 2 - 100 μmol C
- Manual systems, 1 - 100 μmol C

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