WATER COLUMN TIME SERIES PROTOCOL
POC and PON (PARTICULATE ORGANIC CARBON AND NITROGEN) FILTRATION PROCEDURE
Moorea Coral Reef LTER

GET TOGETHER:

- pre-combusted 47 mm GF/F glass fiber filters (combusted at 450°C for 1 hour) (in drawer)
- 5, 47 mm in-line polycarbonate filter holders with connecting vacuum tubing and an in-line valve on each side of the filter holder. (in upper cupboard)
- 2 pair Forceps (in red tool box in lab)
- Large funnel that fits into the mouth of the 4-liter carboys. (in upper cupboard)
- vacuum pump
- 20 liter glass vacuum bottle connected to a 4 liter filtration flask as a trap
- Labeled foil squares, folded in half
- Water samples in 4, 10, and 20 liter carboys
- 5 clothes pins

SAMPLE FILTERING:

Blank Preparation:

- Place a blank pre-combusted filter (47 mm GF/F) in a foil square. Label the foil using the date and "BLANK". Do a blank for every packet of filters.

Sample Preparation:

- Place filter in filter holder with tweezers; do not use fingers.
- Screw filter together with the bleeder valve facing upward toward sample bottle and the gasket on top of filter (on the bleeder valve side of the filter).
- Hang up to 5, 4-liter bottles so that the spigot slopes downward.
- Clothes pin the 2 labeled foil squares for the two replicates for that bottle number to the counter top below the appropriate hanging bottle
- Connect a filter to each 4-liter sample bottle filled to the brim with sample. (To fill the bottle with new sample, **vigorously shake the appropriate 10-liter or 20-liter carboy** and fill the 4-liter bottle **to the top** using a funnel).
- Turn vacuum pump on; vacuum should be 7 inches Hg. Loosen the cap on the 4-liter carboys to allow air to enter. Open the valves to each filter. Tip each filter holder and twist the bleeder valve to allow the filter holder to fill with water. Use pliers if necessary. Be careful not to lose water through the bleeder valve.
- Pump only until filter dries, do not maintain vacuum on dry filters. Turn off the connection to the pump for any particular filter holder using the in-line valve between the pump and the filter holder. Be sure to empty the filter flask occasionally. DON'T GET SEA WATER IN THE PUMP!!
- Using forceps carefully fold each filter in half and place it inside an appropriately labeled foil square. Crimp the corners of the foil so as to allow air to enter but still protect the filter.
- Dry the samples overnight at 80°C. Then freeze and bring back to Santa Barbara on ice for analysis.

LOG EVERYTHING:

Record ALL information on log sheets. Make a note on the log sheet if any problems were encountered during filtration; i.e. a torn filter, leaking funnel - ANYTHING. Fill out entire log sheet – it may take a little time now, but it's worth it in the long run! Check your labeling.

CLEAN EVERYTHING:

Rinse all sample bottles and filter holders 3X with bottled water. NEVER USE UNFILTERED STATION WATER

PRE-SUBMISSION PREPARATION:

- At UCSB redry filters, still in their foil, at $70^{o}C$ in a drying oven until completely dry.
- When dry, submit to the MSI analytical lab for analysis.