

## **LALONDE AMS RADIOCARBON SAMPLE PREPARATION LABORATORY** **GUIDELINES FOR WATER SAMPLING FOR DO<sup>14</sup>C/DI<sup>14</sup>C ANALYSIS**

It is up to the researcher to decide if they would like to analyze the dissolved inorganic carbon (DIC), dissolved organic carbon (DOC), or both. Sample volume will vary depending on the amount of carbon in your sample. Ideally, each sample should yield minimum 1mgC (2mgC is ideal); please sample accordingly.

### **CONCENTRATION DETERMINATION (PPM C)**

If the DIC/DOC concentration is unknown, a separate aliquot (40ml amber EPA vial) is required for quantitative determination prior to extraction of CO<sub>2</sub> (additional fee).

This is *in addition to the sample bottle*. You will require:

#### **1) Vials for quantitative analysis**

TraceClean EPA vial – 40 ml, amber borosilicate, 0.125” with silicone-teflon septa:

Fisher Scientific: # 05-719-102 -or- I-Chem: #S246-0040 (72 per case)

#### **2) Additional Septa**

For DIC samples, please add a second septum as the silicone-teflon septa provided with the EPA vials are permeable. The additional septum is to be added underneath the septum that comes with the vial.

Ensure the rubber or butyl side is facing the water in the vial:

Chromatographic Specialties Inc, PTFE-rubber, 22mm, #C8850522C (package of 100)

### **WATER SAMPLING (FOR <sup>14</sup>C)**

We advise our clients sample in pre-cleaned (10% HCl), pre-baked (500 °C for 3 hours) round bottom borosilicate glass bottles, (ideally amber bottles for DOC, or clear bottles covered in Al foil), capped with a black open top screw cap with butyl septa (ordering information below). If storage time is anticipated to be short before shipping and analysis, you may sample with dense laboratory plastic bottles (HDPE) bottles (i.e. Nalgene). Waters must be gently filtered using a pre-baked (500 °C for 3 hours) 0.45 µm glass fiber filter. No stabilizer is required once the samples are filtered. Fill the bottle with as little head space as possible. Keep samples cool and away from light. You will need to order bottles (1) and closures (2):

#### **1) Bottle ordering information (33-430 closure size):**

*Clear* 1L - Kimble chase #61100-1000; Wheaton #W219420 (recommended if concentration is unknown)

500ml - Kimble chase #61100-500; Wheaton #219419

250ml - Kimble chase #61100-250; Wheaton #219417

125ml - Kimble case #61100-125; Wheaton #219415

*Amber* 1L - Thermo scientific #149-1000; VWR #89095-164 (*recommended for DOC*)

#### **2) Closures (must be ordered separately):**

Wheaton - Black Phenolic Screw cap, open top with grey butyl septa, 33-430 cap size, #240680

(<http://wheaton.com/33-430-cap-phen-blk-opn-butyl-septa.html>)

**\*PLEASE ORDER EARLY IN CASE OF BACKORDER\***