DIC-13 ISOTOPE PROCEDURE

EQUIPMENT:

100mL glass serum bottles
20mm blue stopper
20mm aluminum seal
Crimpers
Balance
Vacuum pump and manifold
Needles – 18g x 1.5”
Pipette and pipette tips

REAGENTS:

4N H_2SO_4

A: To evacuate the bottle:

1. Pipette 30µL of 4N H_2SO_4 into a 100mL bottle.
2. Place stopper in bottle (you’ll need to wet the stopper to get it in) and crimp and aluminum seal over the top.
3. Make sure the hose is connected from the vacuum pump to the manifold and that the valve is open.
4. Put needles onto the luer locks of the manifold and turn on the pump. Make sure that it is drawing a vacuum in the manifold (should be about -24” Hg).
5. Put a bottle onto the manifold by carefully sticking a needle through the stopper. Although there are enough valves for 4 bottles, it is best to evacuate only one bottle at a time.
6. Open the valve and let the bottle evacuate for 1 minute.
7. Remove bottle from manifold while the valve is still open.
8. Label each bottle with the next available ID number on the datasheet. Label with tape wrapped completely around the bottle and write the ID on the top of the aluminum seal.
9. Weigh each bottle and record the mass in grams on the data sheet.

B: Collecting the sample

1. Kneel down in the boat and hold a bottle underwater at a depth of about 0.5 meters (the water should be past your elbow).

2. Hold the bottle sideways and with the other hand, carefully stick a needle through the stopper.

3. When the needle is all the way through the stopper, the bottle will fill most of the way with water (this takes about 30 seconds). DO NOT pull the bottle out of the water before it is done filling.

4. When the bottle is done filling, pull the needle out of the bottle, then take the bottle out of the lake. DO NOT take the bottle out of the water with the needle still in the stopper.

5. Repeat steps 1-4 until each bottle is done. Fill 2 bottles for each depth. Be sure to write the date, depth, and location on the label of each bottle.

6. Back at the lab, weigh the filled bottles and record the mass on the datasheet.

C: Sample storage

1. Store samples in a box in the refrigerator.

2. Keep box closed to prevent exposure to light.