PEARL

Paleoecological Environmental Assessment and Research Laboratory

Department of Biology Queen's University

Prepared by Brian Ginn

Mini-Glew Corer - Operating Instructions

Step 1: Corer Preparation

Ensure top of core tube (flat end, not tapered) and inside of housing have been lubricated with Vaseline (typically only needs to be done once per coring day).

Make sure elastic is properly positioned.

Weight may be added to core tube (above band clamp) if needed.

Attach core tube to corer and tighten band clamp on tube housing using nut driver. Core tube should not move within housing.

Raise plunger of corer to "loaded" position.

Step 2: Testing Corer and Lowering

Test to see if corer is properly sealed by lowering into water, triggering the corer, and lifting to see if the tube is filled and holds water. (If not, re-check seals and Vaseline, ensure band clamp is tightened). Release water and re-set corer to "loaded" position.

Slowly lower corer into water. Extend arm and lower slowly until corer penetrates into sediment (max. speed = ~ 0.5m/sec).

Send messenger down line to trigger corer.

After plunger on corer is triggered, raise slowly to surface.

Do not allow top of core tube to break surface of water!

Step 3: Retrieval of Corer

While core tube is submerged, insert extruding rod into bottom of tube to form a lower seal.

Step 4: Retrieval of Corer II

Holding extruder into bottom of core tube, lift corer slowly out of water.

Be careful not to disturb sediment-water interface.

Check for clarity of water directly above sediment and presence of chironomids tubes or green algal mats(signs of a good sediment core).

Step 5: Separating Core Tube from Corer

Set bottom of extruding rod onto a stable surface (this may be used to support the corer during the following procedure).

Firmly holding onto the corer, use the nut driver to loosen the band clamp on the tube housing.

Rotate corer slightly to ensure band clamp is loosened sufficiently.

Step 6: Separating Core Tube from Corer II
Holding onto the core tube with one hand, use the other hand to slowly remove the corer from the top of the tube. Some back and forth rotation of the corer may be necessary.

Again, be careful not to disturb the sediment-water interface.

Step 7: Removal of Excess Water

Support the bottom of the core tube between your knees.

Use the siphon tube to begin removing water above the sediment. Ensure bottom if siphon does not disturb top layer of sediment.

If quick removal of water is necessary while siphoning, push the core tube firmly but slowly against the extruding rod. This will raise the sediment toward the top of the core tube.

When sediment approaches top of the core tube, remove last bit of water using only the siphon.

Step 8: Sediment Collection

If a small bit of water remains, it may be removed using the turkey baster.

Holding turkey baster on a slight angle from horizontal, remove top layer of sediment.

Rotate core tube slightly to ensure a collection of all the top sediment layers. Collect about 10ml (1/4 oz. of watery sediment).

Open a Whirl-Pak bag and hold close to top of core tube.

Step 9: Sediment Collection II

Empty the sediment collected in the turkey baster into a Whirl-Pak bag.

Label bag (if not already done) and ensure label on bag is correct.

Close top of bag, push out excess air, spin a few times around top twist tie.

Tie off bag.

Step 10: Rinsing Equipment

Place collected sample in a cooler.

Discard rest of sediment into water, rinse out core tube and extruding rod.

Prepare for next sample station.

Plunger

Elastic

Tube Housing

Messenger

Band Clamp

Core Tube