STANDARD OPERATING PROCEDURES
LABORATORY

PROCEDURE TITLE: Preparing TFM and Niclosamide Solutions

SCOPE: To describe procedures for preparing various TFM and Niclosamide stock solutions and standards.

A. 99% pure TFM stock solution ≈ 1000 mg/L

1. Record initial and final weight of the container, and weight of sample removed, on the appropriate form in the Chemical Register and User Log.
2. Tare a 100 mL volumetric flask.
3. Accurately weigh out 0.100 g of 99% TFM.
4. Record weight (X) to the nearest 0.1 mg.
5. Add approximately 3 mL Dimethylformamide (DMF) to dissolve TFM and dilute up to 100 mL using deionized or HPLC grade water.
6. Calculate concentration of TFM stock solution:

$$mg/L\ stock\ TFM \;=\; \frac{(X\ mg\ TFM)(.99)}{100\ mL}\left(\frac{1000\ mL}{1\ L}\right)$$

B. TFM working standards

1. Prepare working standards by diluting 99% pure TFM stock solution with test water to desired concentrations which bracket the expected concentration in the samples.
2. Use equation to determine X mL of stock solution required to prepare each concentration:

$$XmL\ stock\ TFM \;=\; \frac{desired\ \ Conc.TFM(mg/L)*desired\ \ Vol.Std.(mL)}{conc.\ stock\ TFM(mg/L)}$$

C. Standards for TFM quality assurance testing

1. Prepare three TFM standards of about 700 mg/L, 1100 mg/L, and 1500 mg/L.
   a. Tare 100 mL volumetric flask on the analytical balance.
   b. Log 99% pure TFM weight data (initial container weight, sample weight, and final container weight) on the appropriate form in the Chemical Register and User Log.
   c. In a tared 100 mL volumetric flask, weigh out about 0.07g, 0.11g, or 0.15g of 99% pure TFM, dissolve in approximately 3mL dimethylformamide (DMF) and dilute to 100.0 mL with HPLC grade water.
   d. Record weights to the nearest 0.1 mg and calculate standard concentrations from the recorded weights.

$$mg/L\ TFM\ = \frac{(g\ TFM)(1000\ mg)(1000\ mL)}{(100\ mL)(g)(L)}$$

D. Niclosamide stock solution (100 mg/L)

1. Log container initial, sample, and container final weight data into the chemical log book, on the appropriate form.
2. In a 100 mL volumetric flask accurately weigh out 0.010 g of >99% niclosamide.
3. Record weight (X) to the nearest 0.1 mg.
4. Dissolve the niclosamide with DMF and dilute up to 100 mL using DMF.
5. Calculate concentration of niclosamide stock solution:

$$mg/L\ stock\ niclosamide\ = \frac{(X\ mg\ niclosamide)(.994)}{100\ mL\ DMF}\left(\frac{1000\ mL}{1\ L}\right)$$

E. Niclosamide field standard (100 mg/L) for Sea Lamprey Control Agents

1. In the 99% Niclosamide Log, be sure to log in the weight data (container initial, sample, and container final weight).
2. In a 50 mL beaker accurately weigh out 0.100 g of ≥99% niclosamide.
3. Record weight (X) to the nearest 0.1 mg.

4.Dissolve the niclosamide in DMF, transfer to a 1000 mL volumetric flask, rinsing well with a wash bottle filled with DMF, and dilute up to 1000 mL using DMF.
5.Mix by inverting . Use the ultrasonic bath if necessary, to aid Niclosamide going into solution.

Approved by: _____ Date: _____
Laboratory Supervisor

Reviewed by: _____ Date: _____
Quality Assurance Representative