

STANDARD OPERATING PROCEDURES LABORATORY

PROCEDURE TITLE: Determine concentration of TFM in water using the spectrophotometric method

SCOPE: Describes basic spectrophotometric method to determine concentrations of TFM in water

PROCEDURE:

- A. Equipment:
1. Spectrophotometer (Genesys 6)
 2. Glass or disposable cuvettes
- B. Reagents:
1. TFM stock solution or concentrate
 2. Deionized water or filtered lake water
 3. Saturated borate buffer (>38 g/L deionized water)
- C. Prepare TFM Standards:
1. Prepare ~1000 mg/L TFM stock solution using SOP No. LAB423.0
 2. Using the TFM stock solution prepare at least 3 working TFM standards using either filtered lake water or borate buffered HPLC grade water as the diluent. (0.4 mL borate buffer/100 mL deionized water). The concentrations of the TFM standards should bracket the TFM samples to be analyzed.

Calculation of working TFM standards:

$$mg/L\ TFM = \frac{(mL\ stock\ soln.)(mg/L\ stock\ soln.)}{100\ mL}$$

- D. Method
- :
1. Set absorbance at 395nm
 2. Preprogram spectrophotometer referring to instructions in operator's manual depending on which spectrophotometer being used
 3. Zero spectrophotometer by using blank
 4. Measure absorbance of each standard at 395 nm

5. Spectrophotometer will determine calibration curve

6. Determine concentration of unknowns by measuring absorbance

Approved by: _____ **Date:** _____
Laboratory Supervisor

Reviewed by: _____ **Date:** _____
Quality Assurance Representative