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Mail Stop 412

MEMORANDUM

June 10, 2004

To: Water Resources Discipline

From: Timothy L. Miller
Chief, Office of Water Quality, Reston, VA

Subject: Approval of a Water-Quality Analytical Method for the Determination of Methylmercury in Solids and Suspended Solids by the Wisconsin District Mercury Laboratory

The Office of Water Quality (OWQ) has approved a new Water-Quality Analytical Methods developed by the Wisconsin District Mercury Laboratory (WDML) for the determination of methylmercury in solids and suspended solids. Methylmercury is extracted from solids using methylene chloride before being back-extracted into water and ethylated. The ethylated mercury is purged, trapped, thermally desorbed, and quantified using cold vapor-atomic fluorescence spectrometry (CV-AFS). Methylmercury that is associated with suspended solids collected on glass-fiber filters is extracted using a distillation procedure before being converted into methyl mercury chloride and quantified using CV-AFS.

The method detection limit for methylmercury in solids is 0.08 ng/g. The method detection limit for methylmercury in suspended solids range from 0.01 to 0.2 ng/L based on the sample volume filtered.

The subject methods approval process follows the technical procedure outlined in OWQ Technical Memorandum 04.01 (revised 98.05). Performance data for the methods are provided in:

Methods for the preparation and analysis of solids and suspended solids for methylmercury, by J.F. DeWild, S.D Olund, M.L. Olson, and M.T. Tate. U.S. Geological Survey Water Resources Investigations Report 04-XXXX (number to be assigned upon Discipline approval).

Information about this new method is available through the WDML web site
http://infotrek.er.usgs.gov/servlet/page?_pageid=363,371&_dad=portal30&_schema=PORTAL30.

Review of this method was completed by John Garbarino, Research Chemist, Methods Research and Development Program, National Water Quality Laboratory, Denver, CO

If you have questions about these new analytical methods, or would like a copy of the report when it is available, please contact John DeWild (jfdewild@usgs.gov, 608-821-3846) or Shane Olund (sdolund@usgs.gov, 608-821-3819) at WDML.