

May 21, 2002

To: Water Resources Discipline

From: Peter F. Rogerson, Senior Chemist
Office of Water Quality

For: LeRoy Schroder, Chief
Branch of Quality Systems

Subject: Approval of a Water Quality Analytical Method for the Determination of Organophosphate Pesticides in Sediment by the National Water Quality Laboratory

The Office of Water Quality (OWQ) has approved a new Water Quality Analytical Method developed by the National Water Quality Laboratory (NWQL) for the determination of organophosphate pesticides and degradates in bed material, suspended sediment, and soil samples. This new method uses Soxhlet extraction and gel permeation chromatography for sample preparation, with analysis by dual-column capillary gas chromatography with flame photometric detection of 25 pesticides and degradates. The new method number is O-5404-02 and the NWQL Schedule number will be 1404 when it is available. The 25 method compounds are listed in the attached Spreadsheet, along with their Parameter and Method Codes.

Estimated method detection limits range from about 0.8 to about 2 ug/Kg for the 25 analytes. Most of the compounds were determined with good precision and accuracy, but 1 compound demonstrated poor recovery and high variance. That compound is reported with the "E" data qualifier, and is so indicated in the attached Spreadsheet.

This method approval process follows the technical procedure specified in OWQ Tech Memo 98.05, except that this method is described in a Water Resources Investigations Report instead of an Open File Report. The method performance is described in:

Methods of Analysis by the U.S. Geological Survey National Water Quality Laboratory – Determination of Organophosphate Pesticides in Bottom Sediment by Gas Chromatography with Flame Photometric Detection, by Virendra K. Jha and Duane S. Wydoski. U.S. Geological Survey Water Resources Investigations Report 02-XXXX (number to be assigned upon Director's approval).

When approved by the Director, the report will be made available through the NWQL web site at: <http://wwwnwql.cr.usgs.gov/USGS/pubs.html> .

Information about this new method will be available through the NWQL web site <http://wwwnwql.cr.usgs.gov/USGS> on July 1, 2002. Please click on LIMS Catalog and request Schedule 5404.

If you have questions about the new analytical method, or would like a copy of the report, when it is available, please contact Mark Burkhardt (mrburk@usgs.gov, (303) 236-3250) or Duane Wydoski (dwydoski@usgs.gov, (303) 236-3240) at the NWQL.

If you have questions about the method approval process, please contact Pete Rogerson (rogerson@usgs.gov, (303) 236-1836).