

SCDHEC Office of Environmental Laboratory Certification Certification Updates – March 2016

Safe Drinking Water Act - Revised Total Coliform Rule

This rule takes effect April 2016. The 18th and 19th Editions of Standard Methods will no longer be approved for Total Coliform/*E.coli* methods. Also this rule will require that all total coliform positive samples be tested for *E.coli* and not fecal coliform. Laboratories currently using membrane filtration methods for the analysis of their distribution samples will be required to test positive total coliform samples for *E.coli* using EC plus MUG.

If currently certified for Total Coliform using the membrane filtration method, a complete application package will be required to become certified for testing positive total coliform samples for *E.coli*.

Microbiological Quality Control Tests

If a UV light is required by the method, a light meter must be used on an annual basis to verify the output (>70% of initial strength) of the UV light bulb. As an alternative, the bulb can be replaced annually. Documentation must be maintained for the verification of the output or replacement of the bulb.

Laboratory reagent water quality tests must be performed if the laboratory is using the laboratory reagent water for preparing media and/or performing sample dilutions. See Standard Methods 9020B-22nd Edition for the required tests.

The medium QC checks for each lot of commercially prepared medium must be performed initially prior to use and quarterly (every 90 days).

If glassware is used for any microbiological analysis, one piece of representative glassware must be spot-checked for pH after being cleansed with laboratory grade detergent. A pH indicator solution is dripped down the side of the glassware and the color change observed. The recommended indicator solution is 0.04% bromthymol blue. The laboratory's SOP must include the procedure used to perform this pH check along with how it is documented.

Use of Volumetric Pipettes and Automatic Pipettors

Volumetric pipets or automatic pipettors must be used for the preparation of standards for any analyses. If using automatic pipettors, the accuracy at each of the volumes dispensed must be verified on an annual basis. Documentation must be maintained for these checks.

Cryptosporidium Certification

Five laboratories now hold South Carolina certification for Cryptosporidium testing in drinking water. For a list of these certified laboratories contact LabCertHelp@dhec.sc.gov.

Certification for Cryptosporidium/Giardia is also offered under the Clean Water Act for the testing of ambient water using EPA Method 1623(2005). For certification requirements see [How to Apply](#) on our website.

Orthophosphate

For NPDES (Clean Water Act) analyses, samples collected for orthophosphate analyses must be filtered within 15 minutes of collection. The chain-of-custody or other record must document the date and time of the filtration of the orthophosphate sample.

Standard Methods 22nd Edition Errata – Effective Date December 16, 2013

Errors in the 22nd Edition of Standard Methods are documented with corrections in the Errata published at www.standardmethods.org.

SC DHEC UST Program – Certification required for EPA Methods 524.2 and 504.1

The SC DHEC Underground Storage Tank (UST) is updating the UST QAPP (Quality Assurance Project Plan) to require the use of EPA Method 524.2 (Volatiles) and EPA Method 504.1 (Ethylene Dibromide) for the analysis of private and public drinking water wells. Laboratories will be required to have this certification to report regulatory results for these contaminants. To apply for certification, refer to the website for the required documentation when submitting an application package for certification. In the past, certification was offered for only the regulated contaminants of interest by EPA Method 524.2. We now offer certification for all of the volatile contaminants listed in EPA Method 524.2 with the exception of 1,2-Dibromoethane (EDB) and 1,2-Dibromo-3-chloropropane (DBCP).

Acrolein and Acrylonitrile – EPA Method 624 Certification

The May 18, 2012, Federal Register 40 CFR Part 136 promulgated EPA Method 624 for the analysis of Acrolein and Acrylonitrile. Footnote 4 to Table IC of 40 CFR Part 136 specifies that the laboratory must have documentation to substantiate the ability to detect and quantify these analytes at the regulatory levels. The use of sample introduction techniques other than purge and trap may be required. QC acceptance criteria from EPA Method 603 must be used when analyzing for these two compounds in the absence of acceptance criteria from EPA Method 624.

Prior to May 18, 2012, EPA Method 624 was only approved for the screening of acrolein and acrylonitrile. The laboratory must be aware that these two compounds have different preservation and holding time requirements from other compounds analyzed by EPA Method 624. Therefore a separate sample must be collected and preserved to pH 4 to 5 for the analysis of acrolein and acrylonitrile. Refer to 40 CFR Part 136, Table II for other options pertaining to the sample collection and preservation.

An application package is required to apply for certification for these two compounds using EPA Method 624. The initial demonstration of capability (IDOC) must be performed using the EPA

Method 603 required concentrations and acceptance criteria for acrolein and acrylonitrile from Table 3 of EPA Method 603.

Herbicide Certification for NPDES Analyses (EPA Method 615 and Standard Methods 6640B)

EPA Method 615 was promulgated on May 18, 2012 for NPDES analyses following under 40 CFR Part 136. The NPDES PQL Table has been updated to reflect the use of this method. The NPDES PQLs for the herbicides have also been revised. Laboratories must be certified for the required method and analytes of interest to be able to report NPDES compliance analyses for the herbicides. To apply for certification submit a complete application package for the analytes of interest. Out-of-state laboratories applying for certification must have this method reflected on their wastewater certification from their certifying authority.

Standard Methods 6640B Micro Liquid-Liquid Extraction Gas Chromatographic method is also promulgated for use and can meet PQLs for 2,4-D, and 2,4,5-TP (Silvex). Laboratories must submit a complete application for the analytes of interest using this method to have it added to their certification. Out-of-state laboratories applying for certification must have this method reflected on their wastewater certification from their certifying authority.

Certification Offered for Reduced Volume Extraction (RVE)/Large Volume Injection (LVI) for Organic Methods

For organic extractions, the use of a reduced volume of sample and extraction solvent is now allowed as long as the required reporting limit or PQL can be obtained. To obtain certification, laboratories must submit a complete application for the analytes of interest using RVE/LVI for the applicable method.

The use of a reduced solvent extraction (micro-extraction) saves time in sample preparation but also reduces the use of extraction solvents. Combine this with a large volume injection on the instrument and analytes can be performed that meet the regulatory required reporting limits.

EPA Methods 624 and 625 Selected Ion Monitoring (SIM)

GC/MS Selected Ion Monitoring (SIM) mode can be used for analytes that cannot be effectively analyzed in full-scan mode to reach the required sensitivity for EPA Methods 624 and 625 (PAHs). At a minimum one quantitation and two qualifying ions must be monitored for each analyte. The ratio of the two qualifying ions to the quantitation ion must be evaluated and should agree with the ratio observed in an authentic standard within $\pm 20\%$. The signal-to-noise ratio of the least sensitive ion should at least be 3:1. Retention time in the sample should match within 0.05 minute of an authentic standard analyzed under identical conditions. The total scan time should be such that a minimum of eight scans are obtained per chromatographic peak. Certification for SIM is required by method and analyte to use it for reporting NPDES compliance analyses. Apply for certification by submitting a complete application package.

Organic Analyses Guidance Document (December 2015)

The Organic Analyses Guidance Document has been updated and can be found under [Guidance Documents](#) on the website.

SW-846 – Update V

On August 13, 2015, the EPA provided notice of availability of “Final Update V” to the Third Edition of the manual, “Test Methods for Evaluating Solid Waste, Physical/Chemical Methods”, EPA publication SW-846. Final Update V contains 8 new and 15 revised analytical methods. EPA also finalized revisions to Chapters One through Five of SW-846 and an Office of Resource Conservation and Recovery (ORCR) policy statement in the SW-846 methods compendium.

The Office is in the process of reviewing the changes and will be revising the application in the near future to incorporate the new methods. Notification will be sent to the laboratories concerning the changes that need to be incorporated in their laboratory procedures. The changes addressed in Chapters One through Five can be incorporated immediately by all laboratories. If you have any questions concerning the revised chapters and methods please contact labcerthelp@dhec.sc.gov.

Questions concerning any of these updates can be sent to labcerthelp@dhec.sc.gov or contact us at (803)896-0970.