# **UCMR:** Screening Survey for *Aeromonas* at Selected Public Water Systems

**Introduction**
In the first quarter of 2003 (January - March), selected public water systems (PWSs) must begin monitoring for the List 2 microbiological contaminant, *Aeromonas*, as part of the Screening Survey component of the Unregulated Contaminant Monitoring Regulation (UCMR 1999). This fact sheet is designed to provide general information on the requirements of the Screening Survey for *Aeromonas*.

Under the 1996 Amendments to the Safe Drinking Water Act (SDWA), the U. S. Environmental Protection Agency (EPA) was required to revise the existing unregulated contaminant monitoring program by publishing a new list of unregulated contaminants and establishing criteria for a monitoring program. In response to the 1996 SDWA Amendments, EPA established the UCMR (1999) as a three tiered monitoring program, including: Assessment Monitoring (for List 1 contaminants); Screening Surveys (for List 2 contaminants); and Pre-Screen Testing (for List 3 contaminants). A subset of systems required to conduct the Assessment Monitoring are also required to participate in a Screening Survey. The Screening Survey is conducted in two phases: the List 2 chemical contaminants and List 2 microbial contaminants. *Aeromonas* is the only microorganism on List 2 and will be monitored in 2003. For small systems (serving 10,000 persons or less), EPA will pay costs associated with sending water samples to the appropriate laboratory, analyzing water samples, and reporting results. Large systems are responsible for arranging and paying for monitoring, shipping, testing, and reporting of results.

The purpose of unregulated contaminant monitoring is to collect data on contaminants to support the EPA Administrator's decisions regarding whether or not to regulate contaminants. The Agency promulgated the UCMR on September 17, 1999 (64 FR 50556) with a supplemented to the Rule on March 2, 2000 (65 FR 11372). The UCMR List 2 Rule, finalized and published in the *Federal Register* on January 11, 2001, detailed the monitoring specifications for the Screening Survey component of the UCMR (1999) (including for *Aeromonas*) and approved analytical methods for the List 2 chemical contaminants. An analytical method for *Aeromonas*, was approved and published in the *Federal Register* on October 29, 2002 (67 FR 65888).

**What Systems Must Monitor for *Aeromonas*? (See §141.40(a)(1))**
The Screening Survey for *Aeromonas* will be conducted by 120 large and 180 small systems randomly selected from a pool of systems that are required to conduct Assessment Monitoring. Systems selected to participate in the Screening Survey for *Aeromonas*, have been notified by their state drinking water agency or EPA. The list of systems selected to participate in the Screening Survey is posted on the Internet at http://www.epa.gov/safewater/standard/ucmr/systems.html.

**When and How Often Must Monitoring Occur? (See §141.40(a)(7))**
Monitoring for *Aeromonas* can begin in January 2003 for all selected large and small systems. *Aeromonas* samples will be taken every three months, with additional samples taken each month during the warmest months of the year (July, August, September). Therefore, monitoring will take place six times during the year with one of three possible monitoring schemes: 1) January, April, July, August, September, and October; 2) February, May, July, August, September, and November; or 3) March, June, July, August, September, and December.

If for any reason a sample becomes invalidated, resampling should take place as soon as possible within the regulatory defined sampling periods.

**Where Must Samples be Collected? (See §141.40(a)(7))**
Samples for *Aeromonas* must be taken at three locations in the distribution system that represent the following: a midpoint location (MD) in the distribution system with typical disinfectant residual levels, a location representing the maximum residence time (MR) in the distribution system, and a location in the distribution system with the lowest disinfectant residual (LD). To the extent possible, systems may sample for *Aeromonas* in the same locations identified for regulated contaminants that meet these criteria for *Aeromonas* sampling points. This may include some sampling points used for monitoring coliform indicator bacteria (as specified under the Total Coliform Rule – §141.21), or total trihalomethanes (TTHM) (as specified under the Stage 1 Disinfectants and Disinfection Byproducts Rule – §141.132). Further information on sampling locations can be found in §141.40(a)(3) Table 1, List 2 footnote g.

Many states have agreed to collect the UCMR samples for selected small systems. If the state has not agreed to do this, the selected small system must collect the samples with EPA-supplied equipment, and send them to an EPA-specified laboratory. The state or EPA will inform selected small systems of who will be responsible for collecting the samples.

**Is Monitoring For Other Water Quality Parameters Required? (See §141.40(a)(4)(i)(B))**
Yes. Water quality parameters must be analyzed and reported when monitoring for *Aeromonas* as part of the Screening Survey. These parameters include water pH, turbidity, temperature, and free and total disinfectant residual.

**How Are the Samples to be Analyzed? (See §§141.40(a)(7) and Appendix A)**
*Aeromonas* samples must be analyzed by laboratories that are approved by EPA to perform analysis using EPA Method 1605. In order to receive approval, laboratories must: 1) be certified to perform coliform indicator bacteria compliance analysis using membrane filtration, and 2) have successfully passed an EPA proficiency testing (PT) study for EPA Method 1605. EPA will conduct PT studies prior to the start of *Aeromonas* monitoring in January 2003. All laboratory analyses must adhere to the UCMR's quality control (QC) specifications in §141.40 Appendix A and as defined in Method 1605. Specific QC requirements and other considerations have been summarized in the following section. (For additional details regarding QC specifications, see *Method 1605: Aeromonas in Finished Water by Membrane Filtration Using Ampicillin-Dextrin Agar with Vancomycin (ADA-V)* [EPA-821-R-01-034] available on the Internet at http://www.epa.gov/nerlcwww/1605ot01.pdf.) EPA has posted a list of laboratories approved to perform *Aeromonas* analyses on the Internet at http://www.epa.gov/safewater/standard/ucmr/aprvlabs.html.

Because EPA will pay for the analysis of *Aeromonas* samples taken at small systems, EPA has arranged for specific approved laboratories to conduct the testing. Small systems need not make any arrangements for sample analysis.

**Important QC requirements and general information for approved *Aeromonas* laboratories**

1. Laboratories are not expected to conduct a detection limit calculation for *Aeromonas* as identified in Appendix A (2) of the UCMR, because this requirement is only applicable to the UCMR chemical contaminant methods.

2. Laboratories are not expected to conduct a calibration or calibration verification for *Aeromonas* as identified in Appendix A (3) of the UCMR, because this requirement is only applicable to the UCMR chemical contaminant methods.

3. Laboratories must adhere to all the quality control (QC) requirements in EPA Method 1605 Section 9.0, which includes passing an initial demonstration of capability (IDC) (EPA Method 1605, Section 9.4) and processing dilution/rinse water blanks (EPA Method 1605, Section 9.5) and negative culture controls (EPA Method 1605, Section 9.6)

4. On an on-going basis, laboratories must pass the on-going demonstration of capability (ODC) requirements specified in EPA Method 1605 Section 9.8. These include one set of positive control/positive control duplicate (PC/PCD) samples with every 20 field and matrix spike samples, or one set per week, whichever occurs more frequently.

5. The laboratory must analyze matrix spike and matrix spike duplicates (MS/MSD) samples when samples are first received from a PWS (EPA Method 1605, Section 9.7) and subsequently 5 percent of all samples received. Appendix A (6) of the UCMR includes specific directions about

MS/MSD. This requirement can be met by collecting an additional sample volume from one of the three sampling locations (either MD, MR, or LD) and not only filtering this sample unspiked as usual, but also filtering it as a prepared MS/MSD pair. Also under Appendix A (6) of the UCMR, concentrations for prepared MS/MSD samples are specified to alternate between concentrations at ± 20 percent of the minimum reporting level and ± 20 percent of a mid level calibration standard. This requirement is specific to chemical contaminant methods. For *Aeromonas* , laboratories should choose anticipated MS/MSD fortifications to range from 20 to 60 colony forming units (CFU) per filter.

6. Most water quality parameter data must be measured when field samples are collected at the designated monitoring location. These required field measurements include water temperature, pH, and free and total disinfectant residual (typically as chlorine). Turbidity is the last water quality parameter, which can be measured either in the field, at the water system's wet laboratory, or as applicable, at the contract *Aeromonas* laboratory. If the turbidity sample is sent to the *Aeromonas* laboratory, it must be measured within 48 hours of sample collection. If the *Aeromonas* laboratory will make the turbidity measurement, be certain that the laboratory provides an appropriate sampling bottle in the *Aeromonas* sampling kit they send to the system. All of these water quality parameter data must be reported with the *Aeromonas* results to EPA.

7. *Aeromonas* samples MUST be preserved by the use of EDTA and/or sodium thiosulfate (EPA Method 1605, Section 8.2) and be transported to the laboratory under refrigeration (EPA Method 1605, Section 8.3). Samples must be processed by the laboratory within 30 hours of collection at the PWS. Water systems should wait until afternoon to collect their samples and the samples must be received at an approved *Aeromonas* laboratory by the next morning, e.g., overnight express. These samples must be initially filtered the day they are received at the laboratory.

8. Presumptive colonies must be confirmed (EPA Method 1605, Section 10.11). Only presumptive colonies which have been fully confirmed (i.e., have passed all three confirmation steps) are to be reported as positive detections.

9. The laboratory should be careful to report concentrations as CFU/100 mL, recognizing that a total of 500 mL of sample is filtered.

**How Will the Monitoring Data be Reported to EPA?**
Prior to the start of the Screening Survey for *Aeromonas* in January 2003, EPA will provide instructions to each selected large system on how to report monitoring data. Each large PWS will receive an e-mail with six Microsoft Excel™ spreadsheets attached. These spreadsheets will correspond to each month in which the PWS is to collect *Aeromonas* samples. In addition, near the beginning of each month for which it is to sample, the PWS will receive a follow-up e-mail that contains the appropriate spreadsheet and a reminder of their monitoring requirement.

While there is flexibility in who completes the various portions of the spreadsheet, EPA recommends the following approach: The PWS will collect its *Aeromonas* samples and enter the relevant water quality parameters into the spreadsheet. The samples and spreadsheet will be sent to an approved *Aeromonas* laboratory. The laboratory will analyze the samples and complete the relevant portion of the spreadsheet. It will then send the spreadsheet back to the PWS. The PWS will approve the data, recording within the spreadsheet the PWS approval date. The PWS will then send the spreadsheet to EPA as an e-mail attachment.

EPA will provide an overview of the reporting system with instructions for filling in the spreadsheet to large PWSs and approved laboratories. Any large system that does not have access to e-mail will receive its reporting sheets via U.S. mail. These PWSs will return the completed sheets to EPA via U.S. mail. Small systems required to monitor for *Aeromonas* will receive their results in an EPA prepared report sent directly to them.

**Are There Requirements for Notifying the Public? (See §141.153(d) and §141.207)**
Yes. Under the Consumer Confidence Report (CCR) Rule (40 CFR 141.153(d)), published on August 19, 1998 (63 FR 44511), PWSs must report the monitoring results whenever unregulated contaminants are detected. The Public Notification (PN) Rule (65 FR 25982) also applies to unregulated contaminants.

The main component of the CCR will be a table displaying the levels of detected contaminants, including unregulated contaminants, in finished water. For each detected unregulated contaminant for which monitoring is required, the table must display the average of any monitoring results from the year and the range of detections. A system may briefly explain in the CCR why it is monitoring for unregulated contaminants. The explanation may read as follows:

> *Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted.*

Further details on these reporting requirements can be found in the documents: *Preparing Your Drinking Water Consumer Confidence Report* (EPA 816-R-99-002) and *Public Notification Handbook* (EPA 816-R-00-010). Both are available on the Internet at http://www.epa.gov/safewater/ccr1.html and http://www.epa.gov/safewater/pn.html, or by calling the Safe Drinking Water Hotline at (800) 426-4791.

**Where Can I Get More Information?**
More information on the *Aeromonas* Screening Survey is available from the following sources:

- *Federal Register* notices of January 11, 2001 (66 FR 2273) and Final Rule October 29, 2002 (67 FR 65888).
- The EPA Office of Ground Water and Drinking Water UCMR Web Site (http://www.epa.gov/safewater/ucmr.html).
- *Method 1605: Aeromonas in Finished Water by Membrane Filtration using Ampicillin-Dextrin Agar with Vancomycin (ADA-V)* (EPA-821-R-01-034, October 2001).
- The Safe Drinking Water Hotline 1-800-426-4791.

Table 1, at right, lists UCMR contacts in the EPA regional offices and the Agency's Technical Support Center in Cincinnati, Ohio.

**Table 1: EPA UCMR Contacts**

| EPA | Contact | Telephone |
|---|---|---|
| Region 1 | Chris Ryan | 617 918-1567 |
| Region 2 | Robert Poon | 212 637-3821 |
| Region 3 | Michelle Hoover | 215 814-5258 |
| Region 4 | Janine Morris | 404 562-9480 |
| Region 5 | Janet Kuefler | 312 886-0123 |
| Region 6 | Andrew J. Waite | 214 665-7332 |
| Region 7 | Stan Calow | 913 551-7410 |
| Region 8 | Rod Glebe | 303 312-6627 |
| Region 9 | Jill Korte | 415 972-3562 |
| Region 10 | Gene Taylor | 206 553-1389 |
| Technical Support Center | Dan Hautman | 513 569-7948 |

Office of Ground Water and Drinking Water
(4601)
EPA-815-F-02-007
www.epa.gov/safewater
October 2002