



Implementation of the ADWR relies on the individual air carriers to report information to EPA. As with any other regulatory program, the ADWR requires that certain records be maintained and be made available to EPA upon request.

Reporting Requirements

- Air carrier's inventory
- Coliform Monitoring and Sampling Plan
- O&M plan and activities
- Corrective actions
- Public notification
- Self-inspections and deficiencies
- Compliance audits

2

Reporting Format

- Electronically via EPA's ADWR Reporting and Compliance System (ARCS)
 - Database performs logic checks on data entered
 - Reduces reporting errors
 - Consists of downloadable spreadsheet (batch loading) and Web User Interface (web UI)
 - Automatic data upload via spreadsheet or input via web UI
 - Air carrier's primary contact [PRI]
 - Issued user ID and password
 - Approves additional requests for user access
 - Determines user access rights
 - Draft ARCS User Guide available

3

EPA is using an internet based electronic data collection and management system (ADWR Reporting and Compliance System (ARCS)). The data system will perform logic checks on data entered and will calculate final results for accountability and regulatory oversight. This system is intended to reduce reporting errors and limit the time involved in investigating, checking, and correcting errors at all levels.

ARCS consists of a spreadsheet for batch loading data and a web user interface. The spreadsheet allows for automatic data uploads so that the data is available in real time in the database and can be viewed and changed via the web user interface (UI). Air carriers' authorized primary contact(s) will be issued a username and password to access ARCS. The Primary will then approve user ID and password requests for *additional* users and determine access rights.

The ADWR Reporting and Compliance System has a companion DRAFT User Guide which provides information pertinent to users of the system. The DRAFT user guide currently includes: the descriptions of the data elements, a description of the spreadsheet (format and process for downloading and uploading), how to access the system via the web user interface, and other key information. The user guide is considered a DRAFT until phase II of ARCS (which is the reporting and compliance determination phase) is developed and relevant information is added to it.

Aircraft Inventory Reporting Requirements

- Existing aircraft
 - By April 19, 2011
- New aircraft
 - No later than 10 days following the calendar month in which the change occurred
- Changes to existing inventory
 - No later than 10 days following the calendar month in which the change occurred

4

Reporting Inventory

All existing aircraft inventory must be reported no later than April 19, 2011. After initial reporting, any *new* aircraft being added to a carrier's inventory or other changes to an existing inventory must be reported to EPA no later than 10 days following the calendar month in which the change or addition occurred.

Aircraft Inventory Reporting Requirements, cont.

- Information to report to EPA, at a minimum,
 - Unique aircraft identifier
 - Active or inactive status
 - Type and location of supplemental treatment
 - Whether the aircraft water system can be shut off or the flow of water prevented through the taps
- NOTE
 - See ARCS user guide for additional reporting data elements

5

The unique aircraft identifiers

This will be the combination of the aircraft's make (or/manufacturer), the aircraft's model number (such as 747, 787, etc.), and the aircraft serial number. When this information is submitted to ARCS, ARCS will generate an aircraft PWS number for each aircraft. This will be the official number that EPA will use to identify and track compliance of each aircraft.

Reporting the status of the aircraft as active or inactive

This was discussed in the O&M plan presentation, and refers to whether the aircraft is providing water for human consumption to its passengers. Refer to Section 3.2 of the guidance manual for more information on determining active and inactive status.

Reporting the type and location of any supplemental treatment equipment installed on the aircraft water system

Supplemental treatment equipment includes treatment applied to the finished water to maintain water quality or to change aesthetic water quality conditions. Examples include disinfection systems, carbon filters or particulate removal filters on water lines, or any other apparatus that changes the chemical, biological, or physical condition of the water. Although it is possible for increased temperature to cause changes to the chemical, biological, and physical condition of water, for the purposes of aircraft inventory, hot water heating units on coffee makers and/or hot water lines are not considered to be water treatment equipment.

Reporting whether the aircraft water system can be physically disconnected or shut off, or the flow of water prevented through the taps

This information is important because the ability to shut off the supply of water to all faucets and other plumbing fixtures that provide water to passengers or crew affects the requirements for public notification and the timeframe for implementation of corrective disinfection and flushing.

Coliform Sampling Plan Reporting Requirements

Reporting Item	Reporting Timeline
Coliform Sampling Plan & Sampling Frequencies (existing aircraft)	April 19, 2011
Coliform Sampling Plan (new aircraft)	Within the first calendar quarter of initial operation of the aircraft
Changes to required sampling frequency	No later than 10 days following the calendar month in which the change occurred

6

Each aircraft must have an associated coliform monitoring and sampling plan, as well as a set frequency for the sampling.

For *existing* aircraft, both sampling frequencies and coliform sampling plan completion must be reported to EPA by April 19, 2011. For any *new* aircraft placed into operation *after* the initial inventory is submitted, sampling frequencies and plan completion must be reported within the first calendar quarter of initial operation of the aircraft.

Copies of coliform sampling plans must be retained by the air carrier, but they are not required to be submitted to EPA. However, EPA can request a copy of the plan at any time, and may also view the plan during compliance audits.

Changes in coliform sampling frequencies must be reported to EPA no later than 10 days following the calendar month in which the change occurred. These changes must also be incorporated in the coliform sampling plan, although as stated earlier, the plan itself does not need to be submitted. Any changes to coliform sampling frequencies and coliform sampling plans would also require changes to disinfection and flushing frequencies and to the aircraft water system O&M plans.

Coliform Sampling Plan Reporting Requirements, cont.

All coliform sample results (routine, repeats and follow-up)	No later than 10 calendar days following the monitoring period in which the sampling occurred.
Any sample TC(+) &/or EC(+) (routine, repeat, and follow-up)	Within 10 calendar days of receiving sample results

For reporting sampling results, all coliform sampling results (whether they are routine, repeat, or follow-up) must be reported no later than 10 *calendar* days after the end of the monitoring period in which the samples were collected. The monitoring period is based on the monitoring frequency identified in the coliform sampling plan, and could vary for different aircraft in an air carrier fleet. Thus, the monitoring period could be monthly, every three months, every six months, or once a year.

If sample results are TC+ or EC +, the event must be reported to EPA within 10 days of being informed of *sample* results by the laboratory. If public notification occurred, the air carrier must also report whether the notification was provided to crew only, or to passengers and crew.

This is also true for any other event triggering repeat sampling, or when follow-up samples are collected after disinfection and flushing.

Coliform Sampling Plan Reporting Requirements, cont.

- Return to routine monitoring
 - Within 10 calendar days of the return to routine monitoring...
 - Report cessation of public notification or restricted public access requirements

8

Air carriers must also notify EPA when they cease to provide public notification or resume providing unrestricted access to the aircraft water system and return to routine monitoring.

D&F and Sampling Options for Reporting and Compliance Determination
NOTE: Standard reporting deadline is the 10th of the month following the period (D&F or sampling)

Routine Frequency	Quarterly D&F	Every 4 months D&F	Semi-annual D&F	Annual or less D&F
Reporting Deadline	P1 by April 10; P2 by July 10; P3 by Oct. 10; P4 by Jan. 10	P1 by May 10; P2 by Sept. 10; P3 by Jan. 10	P1 by July 10; P2 by Jan. 10	P1 by Jan. 10 YR2, or, Jan. 10 YR3 (D&F "less" than annual)

	Annual sampling	Semi-annual sampling	Quarterly sampling	Monthly sampling
Reporting Deadline	P1 by Jan. 10 YR2	P1 by July 10; P2 by Jan. 10	P1 by April 10; P2 by July 10; P3 by Oct. 10; P4 by Jan. 10	P1 by Feb 10; P2 by Mar 10; P3 by April 10; P4 by May 10; P5 by June 10; P6 by July 10 (etc)

ADWR Sampling Reporting Requirement:
 For TC- results: "All sampling results no later than 10 calendar days following the monitoring period in which the sampling occurred"
 For TC+ results: "...non-routine sampling, within 10 days of the event (e.g., notification of the positive sample result by laboratory)"

ADWR D&F Reporting Requirement:
 "Routine D&F events must be reported no later than 10 calendar days following the D&F period in which the D&F occurred"

EPA intends for air carriers to schedule routine D&F and routine monitoring at regular intervals throughout the calendar year. Routine D&F should be scheduled so that the amount of time between each D&F event is approximately equal." (Source: Preamble p. 53597 and RtC)

These are some of the options available for scheduling routine coliform sampling and routine disinfection and flushing, and the respective reporting deadlines.

Coliform Sampling Plan Reporting Requirements, cont.

- Failure to comply with monitoring requirements
 - Within 10 calendar days of discovery of failure
 - Report that notification was provided to passengers or crew or both
 - Report that corrective actions were implemented

10

Additionally, any failure to comply with the monitoring requirements of this regulation must also be reported to EPA within 10 calendar days of discovery of the failure.

Failure to comply with monitoring requirements includes, but is not limited to:

- Failure to collect routine samples according to the schedule in the coliform sampling plan,
- Failure to collect repeat samples or follow-up samples within the time required, and
- Failure to use a state-certified or EPA-certified laboratory, or EPA-approved analytical methods.

O&M Plan and Activities Reporting Requirements

Existing aircraft

- By April 19, 2011
- Report completion date of O&M plan
- Report frequency of routine D&F

New aircraft

- Within the first calendar quarter of initial operation
 - Report completion date of O&M plan
 - Report frequency of routine D&F

11

For existing aircraft, both routine disinfection and flushing frequency and O&M plan completion must be reported to EPA by April 19, 2011. For new aircraft placed into operation after the initial inventory is submitted, frequency of routine disinfection and flushing and O&M plan completion must be reported within the first calendar quarter of initial operation of the aircraft.

O&M Plan and Activities Reporting Requirements, cont.

- Changes to D&F frequency
 - No later than 10 days following the calendar month in which the change occurred

- Routine D&F
 - Within 10 calendar days following the D&F period in which the D&F occurred
 - Report the completion of the D&F event

12

Any changes in routine disinfection and flushing frequencies must be reported to EPA no later than 10 days following the calendar month in which the change occurred. These changes must also be incorporated in the O&M plans, although the plan itself need not be submitted. Changes to the routine disinfection and flushing frequencies require changes to the routine coliform sampling frequencies and coliform sampling plans.

Air carriers must report the completion of a routine disinfection and flushing event within 10 calendar days following the period in which it occurred. The disinfection and flushing (D&F) period is based on the frequency identified in the O&M plan and may vary for different aircraft in an air carrier fleet. Thus, the D&F period could be every three months, every four months, every six months, or once per year or less.

O&M Plan and Activities Reporting Requirements, cont.

- Any corrective action is implemented
 - Within 10 calendar days of restriction
 - Report reason (e.g., positive results, failure, etc.)
 - Report what type of corrective action was taken (e.g., repeat samples, RPA, etc.)
 - Report whether notification was provided to passengers or crew or both
- Shutting off an aircraft water system
 - Within 10 calendar days of notification
 - Report that the water system has been shut off

13

Any time corrective action is implemented (e.g., restriction of public access or disinfection and flushing), air carriers must notify EPA within 10 calendar days of the event and report the reason for the corrective action, the type of corrective action implemented, and whether notification was provided to the passengers, crew, or both.

Additionally, if the aircraft water system has been shut-off, the air carrier must report it to EPA within 10 calendar days.

O&M Plan and Activities Reporting Requirements, cont.

- Failure to comply with D&F requirements
 - Within 10 calendar days of failure
 - Report whether notification was provided to passengers or crew or both
 - Report corrective action taken

14

Failure to comply with the disinfection and flushing requirements of this regulation must also be reported to EPA, again, within 10 calendar days of discovery of the failure. Failure to comply with disinfection and flushing requirements includes failure to perform routine disinfection and flushing according to the schedule in the O&M plan, and failure to conduct corrective disinfection and flushing.

If this failure occurred, the carrier must also report whether notification was provided to passengers or crew, and report corrective action taken.

Public Notification Reporting Requirements

- Within 10 calendar days of notification
 - Report that notification was provided
- Maintain copy of public notification
 - Copy does not need to be provided to EPA

15

All events requiring notification to passengers and crew must also be reported to EPA within 10 days of the event triggering the notification . This reporting must include an indication of whether the required notification was provided to passengers or crew or both [40 CFR 141.806(b)(4)]. This does not require that a copy of a notification be provided to EPA; however, a copy must be made available to EPA as part of a compliance audit.

Self-Inspection: Completion and Addressed Deficiencies Reporting Req.

- Report completion of self-inspection
 - Within 90 days of completion
- Report that deficiencies identified during self-inspection have been addressed
 - Within 90 days of identification

16

Air carriers must provide evidence of a self-inspection to EPA within 90 days of completion of the self-inspection (self-inspections of aircraft water systems are required every 5 years).

When the rule specifies reporting “evidence” of a self inspection, it means that completion of the inspection must be reported in ARCS.

ARCS will ask whether there were deficiencies identified during the audit. If the answer is yes, click “yes,” and ARCS will ask whether the deficiencies have been addressed.

Self-Inspection: Deficiencies Not Addressed Within 90 Days Report. Req.

- If deficiency not addressed:
 - Within 90 days of identification
 - Report a description of each unaddressed deficiency
 - Provide an explanation as to why it has not been addressed
 - Provide a schedule for addressing each deficiency as quickly as possible

17

Additionally, if any deficiencies have not been addressed within 90 days of identification of the deficiency, the air carrier must report a description of each unaddressed deficiency, an explanation as to why it has not been addressed, and a schedule for addressing each deficiency as quickly as possible [40 CFR 141.806(c)].

Self-Inspection: Deficiencies Not Addressed Within 90 Days, cont.

- Air carrier will incur a violation of the ADWR
 - If more than 90 days has passed and deficiency not addressed
 - The aircraft is used in passenger service
- May have longer than 90 days to address
 - If deficiency identified during extended or heavy maintenance activity
 - Must be addressed before returning to service

18

If more than 90 days have elapsed since a deficiency was identified and it has not been addressed, the air carrier will incur a violation of the ADWR if the aircraft is used in passenger service, even if public access to the water is restricted [40 CFR 141.808(c) and 141.810(e)]. If the aircraft is not returned to service, such as during extended or heavy maintenance, more than 90 days are allowed for addressing the deficiency without incurring a violation.

EPA Compliance Audit

- EPA may conduct compliance audits as part of providing regulatory oversight
- May include (but not limited to)
 - Bacteriological sampling
 - Reviews and audits of records
 - Observation of operational and maintenance procedures

19

EPA may conduct compliance audits as necessary as part of the regulatory oversight process to ensure that air carriers are properly implementing the requirements of the ADWR.

Compliance audits may include, but are not limited to:

1. Bacteriological sampling of aircraft water systems
2. Reviews and audits of records as they pertain to water system operations and maintenance such as log entries, D&F procedures, and sampling results
3. Additionally, EPA may observe *procedures* involving the handling of finished water, watering point selection, boarding of water, operation, D&F, and general maintenance and self-inspections of aircraft water systems.

Compliance Audit: Identified Deficiencies Reporting Requirements

- 90 days to address deficiency
- If not addressed within 90 days:
 - Air carrier must report a description of each unaddressed deficiency
 - An explanation as to why it has not been addressed
 - A schedule for addressing each deficiency as quickly as possible

20

In the same manner as the self inspection deficiency reporting, if a deficiency is identified during a compliance audit, the carrier must report to EPA within 90 days of completion of the audit that the deficiency has been addressed.

If any deficiencies have not been addressed within 90 days of identification of the deficiency, the air carrier must report a description of each unaddressed deficiency, an explanation as to why it has not been addressed, and a schedule for addressing each deficiency as quickly as possible [40 CFR 141.806(c)].

Compliance Audit: Identified Deficiencies Reporting Req., cont.

- Air carrier will incur a violation of the ADWR
 - If more than 90 days has passed and deficiency not addressed
 - The aircraft is used in passenger service
- May have longer than 90 days to address
 - If deficiency identified during extended or heavy maintenance activity
 - Must be addressed before returning to service

21

If more than 90 days have elapsed since a deficiency was identified and it has not been addressed, the air carrier will incur a violation of the ADWR *if* the aircraft is used in passenger service, even if public access to the water is restricted [40 CFR 141.808(c) and 141.810(e)]. If the aircraft is not returned to service, such as during extended or heavy maintenance, more than 90 days are allowed for addressing the deficiency without incurring a violation.

Recordkeeping

- Record can be kept electronically and /or by hard copy
- Must keep records at least 10 years:
 - Self-inspections
- Must keep records at least 5 years:
 - Bacteriological analyses
 - D&F data
- Must keep records at least 3 years:
 - Public Notification
- Must keep current O&M and sampling plans

22

Recordkeeping

Air carrier records can be stored electronically or by hard-copy.

To meet the recordkeeping requirements, air carriers must keep self inspection records for 10 years, sample analyses and D&F data for 5 years, and must keep any public notifications for 3 years.

Supplemental Treatment

23

Supplemental Treatment

- Not required by the ADWR; however, if installed on an aircraft, then...
 - it must be acceptable to FAA and FDA;
 - it must be installed, operated, and maintained in accordance with the manufacturer's plans and specifications; and
 - it must produce water that meets the standards prescribed in ADWR

24

The rule **does not** require supplemental treatment. The ADWR prescribes the minimum requirements necessary to provide safe drinking water to passengers and crew onboard aircraft, including the requirement to board finished water. However, supplemental treatment, depending on the type of treatment and type of contaminant encountered, may provide an additional barrier of protection.

Any supplemental treatment units installed onboard existing or new aircraft must be acceptable to FAA and FDA. It must be installed, operated, and maintained in accordance with the manufacturer's plans and specifications and any FAA requirements.

It is important to understand that having supplemental treatment **does not** reduce or replace any of the requirements of the ADWR.

Thank you!

25