



DRAFT Information Collection Request for the National Primary Drinking Water Regulations: Proposed Aircraft Drinking Water Rule

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Appendix A: Detailed Burden and Cost Tables

ACRONYM LIST

ADWR	Aircraft Drinking Water Rule
AOC	Administrative Order on Consent
BLS	Bureau of Labor Statistics
CFR	Code of Federal Regulations
EPA	U.S. Environmental Protection Agency
FDA	U.S. Food and Drug Administration
FAA	U.S. Federal Aviation Administration
GS	General Schedule
ICR	Information Collection Request
MCL	Maximum Contaminant Level
NAIC	North American Industry Classification
NPDWR	National Primary Drinking Water Regulation
O&M	Operations and Maintenance
OECA	Office of Enforcement and Compliance Assurance
OMB	Office of Management and Budget
PWS	Public Water System
SDWA	Safe Drinking Water Act
SIC	Standard Industrial Classification
SOC	Standard Occupational Classification
TNCWS	Transient Noncommunity Water System
USC	U.S. Code

Information Collection Request for the Aircraft Drinking Water Rule

Draft – March 5, 2008

1. Identification of the Information Collection

1(a) Title of the Information Collection

Aircraft Drinking Water (Proposed Rule)

1(b) Short Characterization/Abstract

The Aircraft Drinking Water Rule (ADWR) requires information collection regarding the quality of water onboard aircraft public water systems (PWSs), the effectiveness of disinfection and flushing procedures, and the implementation of corrective actions or the need to implement corrective actions. The proposed ADWR applies to all aircraft PWSs that fall under U.S. Environmental Protection Agency (EPA or Agency) jurisdiction and board only finished water. Aircraft PWSs are considered transient non-community water systems (TNCWSs); such systems serve 25 or more people per day at least 6 months of the year. Several distinct types of data are being collected under the ADWR, including coliform sampling and routine disinfection and flushing frequency, inventory information, sampling data, and self-inspection certification.

The EPA Office of Ground Water and Drinking Water is promulgating the ADWR to tailor existing health-based drinking water standards to the unique characteristics of aircraft. Section 1411 of the Safe Drinking Water Act (SDWA) considers carriers involved in interstate conveyance as PWSs. As with other PWSs, water used for human consumption onboard an aircraft must meet the requirements of the SDWA. Human consumption includes handwashing, teeth brushing, drinking, food preparation, and water used to brew coffee and tea. Water onboard an aircraft may be accessible to consumers through taps, either in the lavatory or galley setting, or through food service provided by aircraft crew.

The proposed ADWR assumes that only finished water is boarded onto aircraft. Finished water is defined in 40 CFR 141.2 as water that is introduced into the distribution system of a PWS and is intended for distribution and consumption without further treatment, except as treatment necessary to maintain water quality in the distribution system. Prior to boarding the water, compliance with U.S. Food and Drug Administration (FDA) and U.S. Federal Aviation Administration (FAA) requirements¹ is expected to ensure that water from the supplier meets National Primary Drinking Water Regulation (NPDWR) standards and that the equipment used in transferring this water to the aircraft is maintained and operated so as to preserve that level of water quality.

However, because aircraft board water from airport watering points via temporary connections, the potential exists for contamination to be introduced in the act of transferring the water from

¹ Compliance with FAA and FDA regulations is required of both aircraft water systems and water suppliers. Any FAA and FDA requirements are in addition to those imposed by the ADWR.

the watering point, water cabinet, truck, or cart via a hose(s) to the aircraft water system. Contamination can occur through inadequately protected cross connections or may develop on board within the aircraft water system itself. Although aircraft are already regulated PWSs, the Agency has determined that a rule that is more specifically adapted to aircraft water systems would be more conducive to compliance and enforcement. The requirements of the proposed ADWR are described in more detail below.

As part of ADWR implementation, the air carriers will need to read and understand the rule requirements. They will also train appropriate personnel to implement the regulation.

Under the proposed rule, air carriers must update their aircraft water system operations and maintenance (O&M) plan to include specific requirements for coliform monitoring, issuance of public notification when appropriate, qualified operators, and specific requirements for disinfection and flushing procedures. The O&M plan must be incorporated into the air carrier's FAA-approved or accepted O&M program for aircraft. The rule will not require submission of the O&M plan to EPA, but copies must be available for review upon request.

The proposed rule will require monitoring for total coliform bacteria at frequencies ranging from monthly to annually, depending on disinfection and flushing schedules. The rule will require disinfection and flushing of the aircraft water system in accordance with manufacturers' guidelines (where manufacturers do not specify a frequency, the rule will require quarterly disinfection and flushing). Air carriers must develop a coliform sampling plan and report sampling frequencies, along with disinfection and flushing frequencies, to EPA. The monitoring frequencies are described in Exhibit 1.

Exhibit 1. Coliform Monitoring Requirements of the Proposed ADWR

Disinfection and Flushing Frequency	Monitoring Frequency for Total Coliform Bacteria
At least quarterly	At least annually
Once every 4 months (three times per year) to once every 12 months	At least quarterly
Less than once per year	At least monthly

Two routine coliform samples are collected at a frequency dependent on the disinfection and flushing schedule. If one routine sample is total coliform-positive, the aircraft can choose to either perform repeat sampling (collecting 4 samples), or corrective action to include disinfection and flushing and follow-up monitoring.

All total coliform-positive samples must have their culture medium analyzed for the presence of fecal coliforms or *Escherichia coli* (*E. coli*). If within any monitoring period any one sample is fecal coliform/*E. coli*-positive or any two samples are total coliform-positive, then public access to water must be restricted and public notice must be posted and/or announced until the water

system is disinfected and flushed and all follow-up samples are total coliform-negative. The rule will require electronic submission of all coliform results to EPA.

Aircraft must also perform a comprehensive self-inspection of each aircraft's water system components no less than every 5 years. Certification of this self-inspection must be submitted to EPA, along with an indication that all deficiencies have been addressed, within 90 days of the inspection. For any deficiencies not addressed within 90 days of identification of the deficiency, the report of the self-inspection must include a description of the deficiency, an explanation of why it has not yet been addressed, and a schedule for addressing it as expeditiously as possible.

EPA will use the data submitted under the proposed rule to track the aircraft that are subject to the rule, to determine compliance with regulatory requirements, and to ensure public health is protected.

Under the SDWA, for traditional and stationary PWSs, primary enforcement authority for the NPDWRs may be delegated to states and Indian tribes. However, due to the interstate nature of aircraft travel, EPA must be responsible for implementation, including enforcement, of the ADWR. Therefore, the proposed ADWR requires EPA to oversee compliance. EPA will need to train its employees, develop systems to maintain monitoring and other data submitted by the air carriers, and review the submitted data. EPA may also conduct compliance audits of air carriers as needed. Compliance audit activities may include coliform sampling, review of aircraft water system records, and/or observation of procedures.

This Information Collection Request (ICR) covers the period of the first 3 years after rule promulgation, although EPA has estimated and described the burden and costs that will be incurred in the 12 years following promulgation. Only startup implementation burden and costs will be incurred during the first year of the 3-year ICR period. During the second and third years, burden will be incurred for all other activities required under this rule. The average burden per air carrier respondent for the 3-year ICR period is estimated to be 1,606 hours, and the average cost per respondent is \$185,904. The total respondent burden for the ICR period is 101,155 hours, and the total cost is \$11,711,956.

2. Need for and Use of the Collection

2(a) Need/Authority for the Collection

EPA needs the information collected under the proposed ADWR to demonstrate that air carriers are complying with regulations established under the SDWA, thereby meeting their obligations to protect public health. Specifically, Section 1412(b)(1)(A) of the SDWA authorizes EPA to promulgate NPDWRs for certain contaminants:

b) Standards

1) Identification of contaminants for listing.—

(A) General authority.— *The Administrator shall, in accordance with the procedures established by this subsection, publish a maximum contaminant level goal and promulgate a national primary drinking water regulation for a contaminant . . . if the Administrator determines that—*

- (i) the contaminant may have an adverse effect on the health of persons;*
- (ii) the contaminant is known to occur or there is a substantial likelihood that the contaminant will occur in public water systems with a frequency and at levels of public health concern; and*
- (iii) in the sole judgment of the Administrator, regulation of such contaminant presents a meaningful opportunity for health risk reduction for persons served by public water systems.*

Section 1411 of the SDWA states that aircraft that meet the definition of a PWS must comply with the NPDWRs:

Subject to sections 1415 and 1416, national primary drinking water regulations under this part shall apply to each public water system in each State; except that such regulations shall not apply to a public water system

- 1) which consists only of distribution and storage facilities (and does not have any collection and treatment facilities);*
- 2) which obtains all of its water from, but is not owned or operated by a public water system to which such regulations apply;*
- 3) which does not sell water to any person; and*
- 4) which is not a carrier which conveys passengers in interstate commerce.*

The proposed ADWR is intended to facilitate aircraft compliance with the existing NPDWRs. EPA will use information collected under this rule to ensure and track compliance.

2(b) Practical Utility/Users of the Data

EPA will use the information collected to populate a database of the regulated aircraft and their associated compliance data. EPA will use the data to ensure that air carriers are complying with the proposed ADWR and to determine the effectiveness of the regulations for protecting public health.

3. Nonduplication, Consultation, and Other Collection Criteria

3(a) Nonduplication

Air carriers are currently required to collect similar information under existing NPDWRs. However, the ADWR modifies and replaces the existing requirements for aircraft such that no duplication will occur.

The NPDWRs applicable to TNCWSs address contaminants that pose an acute health risk (a health risk associated with short term exposure). TNCWSs using finished water as source water are subject to the Total Coliform Rule; the Surface Water Treatment Rule's requirement for monitoring disinfectant residual in the distribution system; and public notification requirements for violations of NPDWRs.

EPA determined that, in general, U.S. air carriers have not been complying with existing NPDWRs; therefore, EPA's Office of Enforcement and Compliance Assurance (OECA) issued administrative orders on consent (AOCs) to require the air carriers to monitor for total coliform and disinfectant residual and to disinfect and flush aircraft water systems as interim public health measures while EPA develops the ADWR. The AOCs require 2 years of monitoring, with large fleets sampling each aircraft once a year and small fleets sampling each aircraft quarterly. EPA may extend or issue new AOCs as an interim measure up to the effective date of the final ADWR. Therefore, no duplication will occur.

3(b) Public Notice Required Prior to ICR Submission to OMB

EPA intends to notify the public regarding the preparation of this ICR in the Federal Register at the time the ADWR is proposed. EPA will solicit comments on specific aspects of the proposed information collection, as described below:

- 1) Whether the proposed collection of information is necessary for the proper performance of the functions of the Agency, including whether the information will have practical utility;
- 2) Whether the Agency's burden estimate is accurate including the validity of the methodology and assumptions used;
- 3) How to enhance the quality, utility, and clarity of the information to be collected; and
- 4) How to minimize the burden on respondents, including use of appropriate automated electronic, mechanical, or other technological collection techniques or other forms of information technology.

In compliance with the Paperwork Reduction Act (44 USC 3501 *et seq.*), EPA will submit the ICR for the proposed ADWR to the Office of Management and Budget (OMB) for review and approval.

3(c) Consultations

EPA consulted with stakeholders during rule development using a facilitated, collaborative process. Stakeholders included representatives from air carriers, airline associations, flight attendant associations, public interest groups, and others. EPA held a public meeting on the subject on June 1, 2005. Stakeholder consultations were implemented during several one-on-one meetings with Agency personnel and during 2-day collaborative workshops held in January 2006 and March 2007. Stakeholders represented at these consultations included:

ACI-NA
Aerosafe Products, Inc.
Airbus North America
Airline Pilots Association
AirTran Airways
Air Transport Association
Alaskan Airlines
American Airlines
American Association of Airport Executives
American Water Works Association
Amtrak
Airports Council International
Association of Flight Attendants
Association of State Drinking Water Administrators
ATA Airlines
Atlantic Southeast Airlines
Bio-Cide International
Celeste Corporation
Continental Airlines
Delta Airlines
EMD Chemicals
ENSR
Goodrich Corporation
Hawaiian Airlines
Health Canada
IDEXX Laboratories, Inc.
International Airline Passengers Association
International Air Transport Association
International Water-Guard Industries, Inc.
Jet Blue Airways
Joseph Cotruvo and Associates
Mesa Airlines
Midwest Airlines
Minnesota Department of Health
Monogram Systems
National Air Carrier Association

National Air Transportation Association
Natural Resources Defense Council
Northwest Airlines
Omni Air International
Pace Airlines
PSA Airlines
Purac
Republic Airways Holdings
Regional Airlines Association
Semler Industries
Southwest Airlines
Spirit Airlines
Sun County Airlines
Underwriters Laboratories
United Airlines
U.S. Air Force Environmental Quality
US Airways
U.S. Food and Drug Administration
U.S. Federal Aviation Administration

3(d) Effects of Less Frequent Collection

The proposed ADWR will require some information to be collected as often as monthly (this frequency, for total coliform monitoring, is the same as that in the existing Total Coliform Rule); however, the rule provides air carriers with flexibility on this matter. Monthly routine monitoring requirements will apply to air carriers that disinfect and flush the aircraft PWS less than once per year. Air carriers that disinfect and flush quarterly will be required to monitor only once a year. EPA believes that where best management practices such as disinfection are applied less frequently (e.g., annually), frequent monitoring is needed to ensure that water provided to aircraft passengers and crew meets standards. EPA believes that less frequent collection of monitoring data would prevent EPA from determining in a timely manner whether a risk to public health exists.

Under the proposed ADWR, electronic reporting of monitoring results will be required within 10 days after the end of the monitoring period during which the sample was collected. These reporting frequencies are consistent with existing reporting frequencies under the NPDWRs (40 CFR 141.31).

The proposed rule will also require reporting of changes in aircraft inventory within 10 days after the end of the month in which the change occurred. Less frequent collection of inventory data would prevent EPA from overseeing the implementation of the rule for new aircraft added to an air carrier's fleet. EPA expects such changes in inventory to occur only occasionally.

3(e) General Guidelines

This ICR has been completed in accordance with the April 2005 version of the *ICR Handbook: EPA's Guide to Writing Information Collection Requests Under the Paperwork Reduction Act of 1995*. The ICR Handbook was prepared by EPA's Office of Environmental Information, Collection Strategies Division. The ICR Handbook provides the most current instructions for ICR preparation to ensure compliance with the 1995 Paperwork Reduction Act Amendments and OMB's implementing guidelines.

EPA has taken an approach to rule development that minimizes burden to the respondents. However, the proposed ADWR will not follow some of the OMB guidelines for information collection activities in an effort to be consistent with existing regulations. Particularly, the ADWR may require reporting more often than quarterly and recordkeeping for periods longer than 3 years, two requirements that differ from OMB guidelines. Existing NPDWRs require records of bacteriological analyses to be kept for 5 years and records of sanitary surveys to be kept for 10 years. The proposed ADWR recordkeeping requirements for coliform results and disinfection and flushing will be consistent with these requirements, as will the recordkeeping requirements for self-inspections.

As described above, the proposed ADWR will require electronic reporting of monitoring results within 10 days after the end of the monitoring period during which the sample was collected, consistent with existing reporting requirements under 40 CFR 141.31. Thus, if an air carrier monitors total coliform monthly, it will also need to report sample results monthly. Approximately 10 percent of air carriers are expected to monitor monthly. Others will monitor and therefore report quarterly or less frequently.

3(f) Confidentiality

EPA has already implemented practices to protect confidential information submitted by the air carriers as part of the AOCs issued to many of the air carriers. While EPA expects to continue following these practices, all information collected by EPA is subject to the Freedom of Information Act.

3(g) Sensitive Questions

EPA is not collecting any sensitive questions concerning sexual behavior or attitudes, religious beliefs, or other matters as part of the ADWR.

4. Respondents and the Information Requested

4(a) Respondents/SIC Codes

The ADWR will apply to all commercial air carriers based in the United States that provide water for use by their passengers and meet the definition of a PWS. EPA determined that this rule will apply to 63 commercial air carriers.

SIC codes 4512 and 4522 apply to scheduled and unscheduled air transportation industries, respectively. These SIC codes have been replaced by NAIC codes 481111 and 481211.

EPA will be responsible for collecting the information from the air carriers.

4(b) Information Requested

4(b)(i) Data Items, Including Recordkeeping Requirements

Air carriers will be required to submit the following items to EPA:

- Information on total coliform sampling frequency and disinfection and flushing frequency.
- Water system inventory and any subsequent changes.
- Monitoring results for total coliform bacteria samples taken as part of routine, repeat, and post-disinfection follow-up sampling.
- Analytical results for fecal coliform/*E.coli*, required when total coliform results are positive.
- Notification that the O&M manual has been updated.
- Evidence of self-inspection of water system components completed every 5 years, including an indication that deficiencies have been corrected and if not corrected, a description of the deficiency, an explanation of why it has not been corrected, and a schedule for correction.
- Notification of all events requiring public notice and corrective action.
- Failure to comply with the monitoring and disinfection and flushing procedures.

Air carriers will also be required to maintain records for the activities above. An updated O&M plan for the aircraft PWS must be included in the aircraft O&M program required by FAA and must be made available for review upon request. Air carriers must also develop a coliform sampling plan as part of their O&M plan, which must be available for review upon request.

4(b)(ii) Respondent Activities

Air carriers will need to undertake the following activities in order to meet reporting requirements under the proposed ADWR:

Startup

- Read and become familiar with the rule.
- Train staff on rule requirements.

As Needed

- Develop and maintain a sampling plan, and submit monitoring and disinfection and flushing frequency information (one-time requirement).

- Develop and maintain an O&M plan, including training for operators, to be incorporated into the FAA-approved or accepted aircraft operations and maintenance program (one-time requirement).
- Report initial aircraft fleet inventory within 6 months after rule promulgation and subsequent changes in aircraft water system inventory within 10 days after the end of the month in which they occurred.
- Take routine coliform samples, including preparing for shipping and sending off for analysis.
- Take repeat coliform samples, including preparing for shipping and sending off for analysis.
- Take post-disinfection follow-up coliform samples following corrective action, including preparing for shipping and sending off for analysis.
- Submit routine sampling results to EPA.
- Submit repeat sampling results to EPA.
- Submit post-disinfection sampling results to EPA.
- Record routine sampling activities in maintenance log. Although this is not an ADWR requirement, EPA assumes that air carriers record all activities performed by the maintenance crew.
- Record post-disinfection sampling activities in maintenance log. Although this is not an ADWR requirement, EPA assumes that air carriers record all activities performed by the maintenance crew.
- Record routine disinfection and flushing activities in maintenance log. Although this is not an ADWR requirement, EPA assumes that air carriers record all activities performed by the maintenance crew.
- Record corrective action disinfection and flushing activities in maintenance log. Although not an ADWR requirement, EPA assumes that air carriers record all activities performed by the maintenance crew.
- Conduct a comprehensive self-inspection of aircraft water system components at least every 5 years (burden for this is not included in this ICR, however).
- Submit evidence of self-inspection to EPA, including report of deficiencies corrected and unresolved deficiencies and their correction schedule.

5. The Information Collected—Agency Activities, Collection, Methodology, and Information Management

5(a) Agency Activities

The Agency will be responsible for collecting the information generated as air carriers comply with the rule. EPA activities include the following:

- Read and become familiar with the rule.
- Train EPA staff.
- Develop program.
- Provide technical assistance to air carriers.

- Develop mechanisms for storing submitted data, including confidential information.
- Review sampling frequency and disinfection and flushing frequency information.
- Review routine, repeat, and post-disinfection monitoring results.
- Review aircraft water system inventory changes.
- Review certifications and reports of air carrier comprehensive self-inspections.
- Conduct onsite compliance audits, as needed.

5(b) Collection Methodology and Management

EPA is collecting the information as part of its implementation of the ADWR. No surveys or questionnaires will be required. EPA will require air carriers to electronically submit their data to reduce reporting burden. EPA will modify an existing database to store inventory and monitoring data.

EPA reserves the right to conduct compliance audits to check data quality, sampling techniques, disinfection and flushing procedures, records management systems, or other areas of concern. These compliance audits may involve checking reported results against records kept onsite by the air carriers. The public may also review the data; all information EPA collects is subject to the Freedom of Information Act with the exception of confidential business information.

5(c) Small Entity Flexibility

EPA has developed the ADWR to provide flexibility to all air carriers including small entities or small businesses. For example, air carriers can choose the combination of monitoring and disinfection and flushing to accommodate existing routine aircraft maintenance schedules. The proposed rule allows aircraft with a single positive total coliform sample 72 hours to implement disinfection and flushing as corrective action or 24 hours to collect repeat samples.

A “Small Business” is any business that is independently owned and operated and not dominant in its field, as defined by the Small Business Administration under Section 3 of the Small Business Act. This definition applies to several air carriers subject to the proposed ADWR.

EPA has chosen to apply the same requirements to air carriers of all sizes.

5(d) Collection Schedule

EPA will require air carriers to submit some information in the first 6 months after promulgation. This includes information on the inventory of aircraft, planned frequency of monitoring and flushing/disinfection, as well as a statement to the effect that the air carrier’s O&M plan has been updated. EPA will begin collecting all other information required under the proposed rule 1 year after the promulgation of the ADWR. Monitoring and maintenance information will be required to be submitted on a monthly, quarterly, or annual basis, depending on the compliance strategy undertaken.

6. Estimating the Burden and Cost of the Collection

6(a) Estimating Respondent Burden

The respondent burden estimates in this ICR were taken from the economic analysis for the proposed ADWR. For this ICR, air carriers are the only respondents. Burden for EPA is addressed in section 6(c). Although this ICR covers only the first 3 years after promulgation of the proposed ADWR, for informational purposes EPA has described the burden and cost incurred during subsequent years.

EPA assumes that air carrier burden will be incurred by air carrier workers falling into the following standard occupational classification (SOCs) categories developed by the Bureau of Labor Statistics, as shown in Exhibit 2:

Exhibit 2. Transportation Labor Categories

SOC Code	Occupation
Managerial	
SOC 11-3071	Transportation, Storage, and Distribution Managers
Clerical	
SOC 43-6014	Secretaries, Except Legal, Medical, and Executive
Technical	
SOC 39-6031	Flight Attendants
SOC 53-7061	Cleaners of Vehicles and Equipment
SOC 53-6051	Transportation Inspectors
SOC 51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers
SOC 53-6099	Transportation Workers

Source: Bureau of Labor Statistics (BLS) Occupational Employment Survey, May 2005, Air Transportation 481000, <http://www.bls.gov/data/>
Flight Attendants - Occupational Employment and Wages, May 2005

For this ICR, EPA assumes the applicable labor categories are transportation, storage, and distribution managers; transportation inspectors; and inspectors, tester, sorters, samplers, and weighers.

Estimates for burden incurred in association with monitoring will be described on a per-sample or per-sample set basis (where a sample set consists of two to four samples). Other burden, such as that associated with implementation and development of sampling plans, will be estimated on a per-air carrier or per-aircraft basis. These burdens are described below and are shown in Appendix A.

EPA assumes that 63 air carriers will be subject to the rule, based on the number of air carriers that have aircraft that qualify as PWSs. The universe of aircraft that meet the definition is shown below in Exhibit 3, along with the number of aircraft with a given number of sampling points (usually galleys and lavatories). Based on these data, EPA estimates that 7,327 aircraft will be subject to the proposed ADWR.

Exhibit 3. Aircraft Sampling Points

Number of Available Sampling Points	Number of Aircraft	Total Number of Available Sampling Points
A	B	C=B*A
1	381	381
2	2,080	4,160
3	756	2,268
4	421	1,684
5	956	4,780
6	871	5,226
7	298	2,086
8	809	6,472
≥ 9	755	9,354
Total	7,327	36,411

Note: The total number of sampling points for the ≥ 9 sampling points category was calculated by multiplying the number of aircraft in that category by the average number of sampling points per aircraft in that size category.

Source: Exhibit 4.1 of the Economic Analysis for the proposed ADWR

Implementation Burden

Under the proposed ADWR, air carriers are assumed to incur burden for startup activities as follows during the first year after rule promulgation (see Exhibit A.1 in Appendix A):

- Read and become familiar with the rule. EPA estimates that it will take transportation inspectors 2 hours to complete this task. EPA assumed that transportation inspectors, as the highest-paid technical staff in the BLS technical labor category for air carriers, would have some managerial or oversight responsibilities.
- Train other supervisory personnel on the rule requirements. EPA estimates that this will take transportation inspectors 8 hours.

Post-Implementation Burden

Following implementation, air carriers will incur burden on a one-time basis, or on an annual or other periodic basis, to comply with the following requirements:

- Submit the initial inventory within 6 months after promulgation and any subsequent changes within 10 days after the end of the month in which they occur. EPA assumes this will take 1 hour per air carrier per year. EPA assumes that inspection staff

(inspectors, samplers, sorters, testers, and weighers) will perform this task. Although initial inventory information must be submitted within 6 months of rule promulgation, for modeling purposes, EPA assumes this inventory will be reported beginning the same time coliform monitoring begins, 1 year after promulgation.

- Develop a sampling plan similar to the plans required for other public water systems as specified in 40 CFR 141.21 within 6 months after rule promulgation. EPA assumes that each air carrier will develop one plan that will incorporate monitoring for each type of aircraft the air carrier owns. Air carriers will not be required to submit the plan; however, they must submit information from the plan on the frequency of monitoring and disinfection and flushing. EPA estimates that it will take transportation inspectors 10 hours to complete these tasks (see Exhibit A.4).
- Update the aircraft water system O&M plan within 6 months of rule promulgation, including training for operators, to be incorporated into the FAA-approved or accepted aircraft operations and maintenance program. As with the sampling plan, this plan will include O&M information for each type of aircraft. Although air carriers will not be required to submit the plan, they must notify EPA when the plan is complete. EPA estimates that air carrier transportation inspectors will need 80 hours to update this plan (see Exhibit A.6).
- Take routine total coliform samples, including preparing for shipping to laboratory for analysis (see Exhibit A.8), beginning 1 year after promulgation. For each monitoring event, air carriers must take two samples, one in the aircraft galley and one in the aircraft lavatory. If an aircraft has only one tap, two samples must be collected from the same tap. Air carriers will have a choice of monitoring frequencies (monthly, quarterly, and annually); the frequency is tied to the routine disinfection and flushing frequency. The more often an aircraft is disinfected and flushed, the less often monitoring is required. For this analysis, EPA assumes that air carriers will choose to monitor 45 percent of their aircraft annually, 45 percent quarterly, and 10 percent monthly. EPA estimates that inspection staff (inspectors, samplers, sorters, testers, and weighers) will take samples, and that it will take 0.5 hours to collect each sample. Each sample that is positive for total coliform must also be analyzed for fecal coliform or *E.coli* bacteria, but EPA assumes no additional labor is required for this step.
- Take repeat samples, including preparing for shipping to laboratory for analysis (see Exhibit A.8), as needed, beginning 1 year after promulgation. When only one of two routine samples is total coliform-positive, air carriers may choose to conduct corrective action immediately, or they may choose to take repeat samples. Air carriers choosing to take repeat samples must take four samples from four taps (the tap where the positive sample occurred, one lavatory, one galley tap, and one other tap). If fewer than four taps are available, air carriers must collect samples from all available taps for a total of 400 mL. If the repeat samples are negative, no corrective action is required. If any repeat sample is positive for total coliform, the air carrier must conduct corrective action. Sampling is assumed to take 0.5 hour per sample, with inspection staff (inspectors, samplers, sorters, testers, and weighers) conducting sampling. EPA assumes that 3.1 percent of routine coliform samples will be positive and that in half of those cases, air carriers will choose to take repeat samples.

- Take post-disinfection samples following corrective action, including preparing for shipping to laboratory for analysis (see Exhibit A.8), as required, beginning 1 year after promulgation. For any aircraft that undergoes corrective action, two post-disinfection follow-up samples (at one galley and one tap) must be taken for total coliform to ensure that the disinfection was effective. Air carriers must conduct corrective action consisting of disinfection and flushing if they detect total coliform in two samples or more on the same aircraft during routine monitoring, or if they detect fecal coliform or *E.coli* in any sample. As described above, air carriers that detect total coliform only, at only one tap, may choose to conduct corrective action immediately or may wait to see if repeat samples are positive. If any repeat sample is positive, the air carrier must conduct corrective action. EPA assumes that half of all aircraft with positive routine total coliform samples will conduct corrective action immediately. The other half will take repeat samples. Half of all aircraft taking repeat samples are assumed to detect coliform in those samples and to then conduct corrective action. Every aircraft that conducts corrective action is assumed to then collect post-disinfection samples. Samples will be collected by inspection staff (inspectors, samplers, sorters, testers, and weighers).
- Submit routine, repeat, post-disinfection, and any *E.coli* sampling results to EPA, beginning 1 year after promulgation. EPA assumes this will take inspection staff (inspectors, samplers, sorters, testers, and weighers) 0.25 hours per sample set per year (a sample set consists of two samples for routine and post-disinfection sampling and four samples for repeat sampling) (see Exhibit A.8).
- Record each sample set in the maintenance log, beginning 1 year after promulgation. The proposed ADWR will not require such recordkeeping; however, under FAA requirements air carriers must record any action their maintenance staff undertake. Therefore, the burden and cost of this recordkeeping activity is included in the ADWR. EPA assumes this recordkeeping will take inspection staff (inspectors, samplers, sorters, testers, and weighers) 0.25 hours per sample set per year (see Exhibit A.8).
- Record routine disinfection and flushing in the maintenance log, beginning 1 year after promulgation. The proposed ADWR will not require such recordkeeping; however, under FAA requirements air carriers must record any action their maintenance staff undertake. Therefore, the burden and cost of this recordkeeping activity is included in the ADWR. EPA assumes this recordkeeping will take inspections staff (inspectors, samplers, sorters, testers, and weighers) 0.25 hours per aircraft per year (see Exhibit A.10).
- Record corrective action in the maintenance log (see Exhibit A.11), as needed, beginning 1 year after promulgation. The proposed ADWR will not require such recordkeeping; however, under FAA requirements air carriers must record any action their maintenance staff undertake. Therefore, the burden and cost of this recordkeeping activity is included in the ADWR. EPA assumes this recordkeeping will take inspection staff (inspectors, samplers, sorters, testers, and weighers) 0.25 hours per aircraft per year (for those aircraft that perform corrective action only).
- Conduct a self-inspection of aircraft water system components at least once every 5 years (see Exhibit A.13), beginning 1 year after rule promulgation. Components to be inspected include but are not limited to the storage tank, distribution system, treatment facilities (if applicable), fixtures, valves, and backflow prevention devices. EPA assumes

this inspection will be conducted as part of the existing maintenance checks, and that therefore, this is not a new requirement. EPA assumes no new burden for this requirement.

- Submit evidence of self-inspection to EPA within 90 days of the inspection. This includes a report that deficiencies were corrected, along with identification and explanation of uncorrected deficiencies and a schedule to address them. EPA assumes transportation inspectors for each air carrier will require a total of 24 hours to complete the paperwork for all their aircraft during the 5-year audit cycle (see Exhibit A.13).

The total burden incurred by the air carriers during the 3-year period covered by this ICR is estimated to be 101,155 hours. This burden is associated with all the activities described above.

6(b) Estimating Respondent Costs

6(b)(i) Estimating Labor Costs

EPA used national-level estimates from two resources: 1) the *Bureau of Labor Statistics (BLS) Occupational Employment Survey (Air Transportation, May 2005)* and, 2) *Occupational Employment Wages for Flight Attendants (May 2005)*. The labor rates are shown below in Exhibit 4.

Exhibit 4. Labor Rates by Standard Occupational Classification (SOC) Code (\$2005)

SOC Code	Occupation	Mean Hourly Wage
Managerial		
SOC 11-3071	Transportation, Storage, and Distribution Managers	\$41.18
Clerical		
SOC 43-6014	Secretaries, Except Legal, Medical, and Executive	\$14.43
Technical		
SOC 39-6031	Flight Attendants	\$25.84
SOC 53-7061	Cleaners of Vehicles and Equipment	\$14.24
SOC 53-6051	Transportation Inspectors	\$31.50
SOC 51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	\$24.91
SOC 53-6099	Transportation Workers	\$17.69

Source: Bureau of Labor Statistics (BLS) Occupational Employment Survey (May 2005), Air Transportation 481000, www.bls.gov/data/, and Occupational Employment Wages for Flight Attendants (May 2005), www.bls.gov/oes/.

These rates were multiplied by 1.04, based on the change in BLS's Employment Cost Index from the second quarter of 2005 to the fourth quarter of 2006, to bring the rates to 2006 levels.² EPA then multiplied these adjusted rates by a load factor of 1.5 to account for benefits paid to air carrier workers.³ The final labor rates EPA used to determine labor costs for the proposed ADWR are shown below in Exhibit 5.

Exhibit 5. Loaded Labor Rates Used in the ICR for the Proposed ADWR - \$2006

SOC Code	Occupation	Mean Hourly Wage
Managerial		
SOC 11-3071	Transportation, Storage, and Distribution Managers	\$62.65
Clerical		
SOC 43-6014	Secretaries, Except Legal, Medical, and Executive	\$21.95
Technical		
SOC 39-6031	Flight Attendants	\$39.31
SOC 53-7061	Cleaners of Vehicles and Equipment	\$21.66
SOC 53-6051	Transportation Inspectors	\$47.92
SOC 51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	\$37.90
SOC 53-6099	Transportation Workers	\$26.91

6(b)(ii) Estimating Capital and Operations and Maintenance Costs

In addition to the labor costs incurred as air carriers comply with the proposed ADWR, air carriers will incur O&M costs associated with coliform monitoring. Monitoring costs include the costs of laboratory analysis, shipping, and certain equipment used to store and ship the samples. Air carriers will also incur capital costs to purchase equipment to store samples. These O&M and capital costs are described below.

Laboratory analysis for coliform (including *E.coli*) is assumed to cost \$20.62 per sample on average, based on a survey of several laboratories around the United States in late 2006. The proposed rule assumes that all air carriers will send their samples to a certified laboratory for analysis. Shipping is estimated to cost \$100 per sample set (2 samples for routine and corrective action follow-up or 4 samples for repeat sampling), based on the cost of courier service from airports to laboratories in major cities, and assumes an airport distance of 20-30 miles from the

² BLS Employment Cost Index, Total Compensation, Private Industry, Not Seasonally Adjusted, Index Number, Transportation and Material Moving. <http://www.bls.gov/ncs/ect/home.htm>

³ BLS Employer Costs for Employee Compensation Report, Table 9, September 2006. <http://www.bls.gov/ncs/ect/home.htm>

lab. EPA also assumes the courier will return to the air carrier the cooler used to transport the sample.

EPA assumes that air carriers will purchase 3 coolers at \$21 each, 9 gel packs at \$4 each, and 2 thermometers at \$32 each, for a total of \$163, to ensure that coliform samples are kept at the proper temperature, and EPA assumes that these will require annual replacement.

EPA assumes that air carriers will also need to make a periodic purchase of 3 small refrigerators, at a cost of \$159 each, to store samples until they are ready for shipping. These refrigerators are the only capital costs air carriers are expected to incur under the proposed ADWR. Air carriers are expected to purchase refrigerators when they begin monitoring and to replace the refrigerators after 8 years.

The tables in Appendix A show how labor, O&M, and capital costs are calculated for all the activities air carriers will conduct under the proposed ADWR.

During the 3-year period covered by the ICR, air carriers are expected to incur labor, O&M, and capital costs in association with implementation and post-implementation activities. The total cost for air carriers during the ICR period is \$11,711,956. See section 6(e) for more detail.

6(c) Estimating Agency Burden and Cost

EPA's 10 regional offices will incur burden for the following activities while overseeing the initial implementation of the proposed ADWR (during the first year after promulgation):

Implementation Burden

- Read and become familiar with the rule. EPA estimates that it will take each Region 8 hours to complete this task (see Exhibit A.2).
- Program development. EPA estimates that it will take each Region 40 hours to complete this task.
- Develop mechanisms for storing submitted data, including confidential information. Each Region is assumed to spend 115 hours on this task, although this will likely be completed by EPA Headquarters.
- Provide technical assistance and training to air carriers. EPA estimates that each Region will spend 80 hours completing this task.
- Train regional staff. EPA assumes that each Region will spend 40 hours on this task.

Post-Implementation Burden

EPA assumes that, in addition to startup implementation, the Agency will also have annual implementation burden associated with continuing technical assistance and staff training, beginning 1 year after rule promulgation. No burden is associated with lab certification under the ADWR because it is unlikely EPA will need to oversee lab certification programs in addition to those for the Total Coliform Rule. EPA will have oversight over the monitoring program

conducted by the air carriers. EPA will also incur some one-time burden for reviewing submissions associated with sampling and disinfection and flushing frequencies during the first year after promulgation. The estimated burden for each activity is described below.

- Provide ongoing technical assistance to air carriers. EPA assumes it will spend 500 hours per year on this task (see Exhibit A.3).
- Conduct staff training. EPA estimates that it will need 16 hours per year to complete this task (see Exhibit A.3).
- Review sampling plan information—monitoring frequency and disinfection and flushing frequency—submitted by air carriers for all their aircraft. EPA estimates that it will need 4.5 hours to review the information for each air carrier (one-time burden) (see Exhibit A.5).
- Review air carrier notification that O&M plans have been updated, beginning 6 months after rule promulgation (one-time burden) (see Exhibit A.7).
- Review routine, repeat, and post-disinfection monitoring results. EPA assumes it will need 0.5 hours to review results for each total coliform-positive sample (see Exhibit A.9).
- Review aircraft water system inventory. EPA assumes that this will take 0.5 hours per air carrier (see Exhibit A.9) per year, beginning 6 months after rule promulgation. For modeling purposes, however, the burden for this activity was included with the burden for reviewing sampling results and is assumed to begin 1 year after promulgation.
- Conduct onsite compliance audits, including sampling, review of records, and observation of procedures. EPA estimates that this will take 16 hours per air carrier and that one-fifth of all airlines will be audited each year (see Exhibit A.14).

During the 3-year period covered by this ICR, the Regions are estimated to incur a total burden of 15,498 hours. See section 6(e) for more detail.

Agency Costs

The costs EPA will incur under the proposed ADWR include the cost of labor associated with implementation. EPA will not incur any O&M or capital costs under this rule. EPA assumes that EPA regional staff at a GS 12-Step 5 grade level will have oversight of rule implementation. The rate for this grade level is \$30.57.⁴ EPA multiplied this rate by 1.6, as specified in the ICR Handbook, for a loaded rate of \$48.91.

Appendix A presents the calculations for labor costs for activities EPA Regions will conduct under the proposed ADWR.

The total cost to the Agency during the 3-year implementation period covered by this ICR is \$756,519. Section 6(e) provides more detail.

6(d) Estimating the Respondent Universe and Total Burden and Costs

⁴ Office of Personnel Management. Salary Table 2007-GS. http://www.opm.gov/oca/07tables/html/gs_h.asp

EPA estimates that 63 air carriers will be respondents under the proposed ADWR. All 63 air carriers will incur costs associated with becoming familiar with the rule; requirements to submit sampling frequencies; to conduct comprehensive self-inspections of the aircraft water systems; to sample for total coliform at least once per year; to periodically disinfect their systems and to keep records of disinfection activities. The specific assumptions regarding how often air carriers will monitor and disinfect are discussed under section 6(b). The total burden incurred by air carriers during the 3-year period covered by this ICR is 101,155 hours. The cost associated with this burden is \$11,711,956. Burden and cost for EPA are described in section 6(e). The total burden for both air carriers and EPA Regions during the 3-year period covered by this ICR is 116,654 hours. The cost associated with this labor is \$12,468,475. See section 6(e) for more detail.

The burden and costs of complying with the rule over the 12 years following rule promulgation for both air carriers and EPA is shown in Appendix A, in Exhibits A.15 and A.16.

6(e) Bottom Line Burden Hours and Cost Tables

6(e)(i) Respondent Tally

Exhibit 6 shows the bottom line burden hours and costs for the 63 air carriers under the proposed ADWR. As described in section 6(d) above, the total burden for air carriers for the 3-year ICR period is 101,155 hours. During this period air carriers will undertake 380,136 responses. The respondent costs for the same period are \$11,711,956. The labor cost is \$3,902,768. The O&M cost (for sample analysis and shipping) is \$7,779,137. The capital cost is \$30,051. The average annual respondent burden is 33,718 hours, and the average cost per year is \$3,903,985.

Exhibit 6. Summary of Agency and Air Carrier Burden and Costs Associated with Compliance with the ADWR

	Total	Annual Average	Year 1	Year 2	Year 3
Total (Air Carriers and Agency)					
Burden (in hours)	116,654	38,885	9,445	53,604	53,604
Respondents	73	73	73	73	73
Responses	383,638	127,879	428	191,605	191,605
Costs (\$)	\$ 12,468,475	\$ 4,156,158	\$ 455,746	\$ 6,021,390	\$ 5,991,339
Labor (\$)	\$ 4,659,287	\$ 1,553,096	\$ 455,746	\$ 2,101,770	\$ 2,101,770
O&M (\$)	\$ 7,779,137	\$ 2,593,046	\$ -	\$ 3,889,569	\$ 3,889,569
Capital (\$)	\$ 30,051	\$ 10,017	\$ -	\$ 30,051	\$ -
Burden per Response	0.3				
Cost per Response	\$ 33				
Burden per Respondent	1,598	533	129	734	734
Cost per Respondent	\$ 170,801	\$ 56,934	\$ 6,243	\$ 82,485	\$ 82,073
Air Carriers					
Burden (in hours)	101,155	33,718	6,300	47,428	47,428
Respondents	63	63	63	63	63
Responses	380,136	126,712	252	189,942	189,942
Costs (\$)	\$ 11,711,956	\$ 3,903,985	\$ 301,918	\$ 5,720,044	\$ 5,689,993
Labor (\$)	\$ 3,902,768	\$ 1,300,923	\$ 301,918	\$ 1,800,425	\$ 1,800,425
O&M (\$)	\$ 7,779,137	\$ 2,593,046	\$ -	\$ 3,889,569	\$ 3,889,569
Capital (\$)	\$ 30,051	\$ 10,017	\$ -	\$ 30,051	\$ -
Burden per Response	0.3				
Cost per Response	\$ 31				
Burden per Respondent	1,606	535	100	753	753
Cost per Respondent	\$ 185,904	\$ 61,968	\$ 4,792	\$ 90,794	\$ 90,317
Agency					
Burden (in hours)	15,498	5,166	3,145	6,177	6,177
Respondents	10	10	10	10	10
Responses	3,502	1,167	176	1,663	1,663
Costs (\$)	\$ 756,519	\$ 252,173	\$ 153,828	\$ 301,345	\$ 301,345
Labor (\$)	\$ 756,519	\$ 252,173	\$ 153,828	\$ 301,345	\$ 301,345
O&M (\$)	\$ -	\$ -	\$ -	\$ -	\$ -
Capital (\$)	\$ -	\$ -	\$ -	\$ -	\$ -
Burden per Response	4				
Cost per Response	\$ 216				
Burden per Respondent	1,550	517	315	618	618
Cost per Respondent	\$ 75,652	\$ 25,217	\$ 15,383	\$ 30,135	\$ 30,135

Exhibits A.15 and A.16 show the burden and costs for both air carriers and EPA over the 12-year period following promulgation.

6(e)(ii) *Agency Tally*

Under the proposed ADWR, 10 EPA Regions will be responsible for implementing the rule. These Regions will have responsibility for every Agency activity described under section 6(c). Exhibit 6 also shows the bottom line burden hours and costs for the EPA regional offices during the ICR period. EPA Regions will conduct 3,502 responses. The total burden for EPA Regions for the ICR period is 15,498 hours. The Agency costs for the period are \$756,519; these costs include labor only. There are no Agency O&M or capital costs associated with the rule during the ICR period. The average annual Agency burden is 5,166 hours, and the average annual Agency cost is \$252,173.

6(e)(iii) *Variations in the Annual Bottom Line*

EPA expects that there will be significant differences in burden for both air carriers and EPA Regions from year to year during the ICR period. During the first year, startup implementation burden will be incurred, along with burden associated with development, submission, and review of sampling plan and O&M plan information. In the second year, monitoring, disinfection and flushing, self-inspections, and compliance audits will begin. The differences in burden from year to year are shown in Exhibit 6.

6(f) Reasons for Change in Burden

Not applicable. The proposed ADWR is a new rule.

6(g) Burden Statement

Exhibit 6 presents the average annual respondent burden for each air carrier. During the ICR period, the average burden associated with startup, sampling and O&M plan development, coliform monitoring, disinfection and flushing, and self-inspections is 535 hours per year for each air carrier.

Burden means the total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose or provide information to or for a Federal agency. This includes the time needed to review instructions; develop, acquire, install, and utilize technology and systems for the purposes of collecting, validating, and verifying information, processing and maintaining information, and disclosing and providing information; adjust the existing ways to comply with any previously applicable instructions and requirements; train personnel to be able to respond to a collection of information; search data sources; complete and review the collection of information; and transmit or otherwise disclose the information.

An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. The OMB control numbers for EPA's regulations are listed in 40 CFR Part 9 and 48 CFR Chapter 15.

To comment on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including the use of automated collection techniques, EPA has established a public docket for this ICR under Docket ID Number EPA-HQ-OW-2005-0025 which is available for public viewing at the Water Docket, EPA/DC, EPA West, Room 3334, 1301 Constitution Avenue, NW, Washington, DC. The EPA Docket Center Public Reading Room is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Reading Room is (202) 566-1744, and the telephone number for the Water Docket is (202) 566-2426. An electronic version of the public docket is available in www.regulations.gov. Use www.regulations.gov to submit or view public comments, access the index listing of the contents of the public docket, and to access those documents in the public docket that are available electronically. Also, you can send comments to the Office of Information and Regulatory Affairs, Office of Management and Budget, 725 17th Street, NW, Washington, DC 20503, Attention: Desk Officer for EPA. Please include the EPA Docket ID Number EPA-HQ-OW-2005-0025 and OMB Control Number 2040-NEW in any correspondence.