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PART A

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1. IDENTIFICATION OF THE INFORMATION COLLECTION

1(a) TITLE OF THE INFORMATION COLLECTION

U.S. Environmental Protection Agency
Collection of 2000 Aquatic Animal Production Industry Data
EPA ICR 1988.01

1(b) SHORT CHARACTERIZATION/ABSTRACT

The United States Environmental Protection Agency (EPA or the Agency), through this Information Collection Request (ICR) package, requests that the Office of Management and Budget (OMB) review and approve the Collection of 2000 Aquatic Animal Production Industry Data. Through this collection, the Agency obtains data essential to the development of the Aquatic Animal Production Effluent Limitations Guidelines and Standards (proposed 40 CFR Part 451). Section 308 of the Clean Water Act (CWA) authorizes this data collection.

The Engineering and Analysis Division (EAD) of EPA's Office of Water will administer the Collection of 2000 Aquatic Animal Production Industry Data in two parts. First, EPA will administer a screener or short survey to all facilities on the mailing list, which consists of approximately 5,000 facilities. The screener, located in Attachment 1, is necessary to adequately characterize the aquatic animal production industry in the United States. Because publicly available information does not adequately characterize the aquatic animal production industry, additional information from the industry is needed to enable EPA to develop a statistically valid stratified random sample for the detailed survey. The screener gathers information on species, production methods, production levels, pollutant control practices, and contact information. Second, after receiving and analyzing the results from the screener, EPA will distribute a detailed survey to a stratified random sample of the industry population. EPA will administer the survey instrument located in Attachment 2, designed to collect technical and economic data, to 500 to 700 aquatic animal production facilities in the industry. Third, after analyzing the detailed data, EPA may need to request corporate economic information from no more than 100 firms and collect sampling data on process water and effluent from no more than 25 facilities. All burden calculations in this document are based on the upper limit of a total of 5,825 respondents.

EPA has determined that the data obtained through the Collection of 2000 Aquatic Animal Production Industry Data are necessary for EPA to develop effluent limitations guidelines for this industry. EPA will use these data to perform technical and economic analyses to support the Agency's development of regulatory options for the aquatic animal production industry that are both technically and economically achievable. Ultimately, EPA will consider economic achievability, implementation, cost-effectiveness, and projected environmental benefits associated with the proposed options when selecting appropriate regulatory options.

The aquatic animal production industry will devote time and resources to respond to the Collection of 2000 Aquatic Animal Production Industry Data. EPA estimates that this survey effort will

involve an upper limit of 5,825 respondents and place a maximum total burden of 24,840 hours on the aquatic animal production industry. The collection design represents a culmination of the Agency's efforts not only to gather sufficient data to perform the analyses required by the CWA, related statutes (e.g., the Regulatory Flexibility Act as amended by the Small Business Regulatory Enforcement Fairness Act [SBREFA]), and various Executive Orders, but also to cooperate with the aquatic animal production industry to administer clear and concise data collection instruments that place the lowest possible burden on all respondents.

2. NEED FOR AND USE OF THE COLLECTION

2(a) NEED/AUTHORITY FOR THE COLLECTION

The Federal Water Pollution Control Act Amendments of 1972 ("Clean Water Act" or CWA), 33 U.S.C. 1251, et seq. established a comprehensive program to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters" (section 101(a)). Under the authority of the Act, EPA is required to issue effluent limitations guidelines, pretreatment standards, and new source performance standards for industries that generate wastewater. Under section 304(m) of the CWA, added by the Water Quality Act of 1987 (P.L. 100-4, February 4, 1987), EPA publishes biennial effluent guidelines plans and establishes a schedule for the development of guidelines for new industries. The data collection will be administered under the authority of section 308 of the Clean Water Act, 33 U.S.C., section 1318.

EPA published its first biennial plan on January 2, 1990 (55 FR 80). The Natural Resources Defense Council (NRDC) and others filed suit against EPA for alleged inadequacies in the plan. See NRDC, et al. V. Reilly, Civ. No. 89-2980 (D.C. Cir.). The court-approved consent decree between EPA and NRDC (January 31, 1992) required the Agency to propose and take final action on seven effluent guidelines already under development, four effluent guidelines already identified, and eight additional effluent guidelines that had not yet been identified by EPA.

In accordance with Section 304 (m) of the CWA, EPA is developing the aquatic animal production effluent limitations guidelines and standards (40 CFR 451). The Agency developed recommended effluent limitations guidelines and standards covering the fish hatcheries and farms point source category in 1977, but these were not promulgated. Since 1977, the aquatic animal production industry has increased in number and capacity. EPA needs to examine potential environmental problems, such as nutrient pollution, that have emerged as issues of concern during the last 25 years. EPA may develop technology-based limits and/or best management practices for ammonia nitrogen and other nutrients that can degrade water quality. Along with concentrated animal feeding operations (CAFOs) and meat product facilities, aquatic animal production facilities have been identified as potential contributors to nutrient loadings in the Nation's surface waters. The surveys will provide valuable information on how facilities currently treat their wastewater so that EPA may more accurately estimate current baseline conditions. The 2000 aquatic animal production industry surveys are an essential portion of the detailed information gathering process necessary for EPA to determine whether regulations are appropriate.

EPA plans to mail surveys to approximately 5,700 facilities conducting aquatic animal production operations. Approximately 5,000 facilities will receive the screener survey, and 700 of these respondents will also receive the detailed survey at a later date. The screener survey requests data for the year 2000, the most recent year for which complete technical and economic data are available; the detailed survey requests technical data for 2000 and economic data for 2000, 1999, and 1998. Section 4(b)(ii)(a)(ii) explains the need for three consecutive years of economic data. EPA anticipates follow-up activities with a maximum of 125 of the detailed survey respondents for corporate financial data and/or sampling data as necessary, depending on the results of the detailed survey. The data collection will be administered under the authority of Section 308 of the Federal Water Pollution Control Act, 33 U.S.C., Section 1318.

2(b) PRACTICAL UTILITY/USERS OF THE DATA

Under the effluent guidelines program, EPA establishes technology-based limitations (based on best practicable control technology (BPT), best conventional control technology (BCT), and best available technology economically achievable (BAT)), and standards (pretreatment standards for existing sources (PSES), new source performance standards (NSPS), and pretreatment standards for new sources (PSNS)). BPT, BCT, BAT, and NSPS apply to direct dischargers (i.e., sites that discharge directly to navigable waters of the United States), while PSES and PSNS apply to indirect dischargers (i.e., sites that discharge to waters of the United States through publicly-owned treatment works (POTWs)).

To develop technology-based limitations and standards, EPA collects and analyzes information pertaining to wastewater characteristics (e.g., pollutants discharged, wastewater flows), wastewater treatment technologies (e.g., pollutant control practices, pollution prevention techniques, end-of-pipe treatment systems), associated costs of wastewater treatment, economic impacts of associated compliance costs, and the environmental benefits associated with the regulatory options considered. Specifically, EPA will use responses to the Collection of 2000 Aquatic Animal Production Data to assist in characterizing the pollutants discharged from aquatic animal production facilities and to develop regulatory options to control these pollutant discharges. The Agency will use the data collected to assist in establishing current baseline estimates of industry-wide production- normalized wastewater flow rates, pollutant concentrations, and pollutant loadings in order to estimate the engineering costs of compliance and analyze the economic impacts and environmental benefits associated with each regulatory option. EPA will propose and select appropriate regulatory options for the aquatic animal production industry based on the results of these analyses. Facilities affected by the regulations ultimately promulgated will have the choice of implementing any combination of technologies and practices that enable them to comply with the effluent limitation guidelines.

(i) Detailed Technical Analyses Supported by the Collection of 2000 Aquatic Animal Production Industry Data

EPA has identified the following types of aquatic animal production facilities to be included in the Collection of the 2000 Aquatic Animal Production Industry Data:

- private/commercial
- government
- academic/research

for species grown in the following production systems: ponds, flow through, recirculating, net pens and cages, floating aquaculture and bottom culture, and other aquaculture systems.

EPA engineers, economists, statisticians, environmental assessment analysts, and their contractors will perform detailed analyses of the data collected through the surveys. The technical information includes basic facility information, production system, species grown, water use data, wastewater characterization summaries, and detailed information on pollution control practices. Specific analyses using the technical data are described below.

(A) Subcategorization

In the effluent guidelines program, subcategorization of an industrial point source category may be based on: facility size, location, activity, and age; products and by-products generated; inputs used (e.g., feed and water); total energy requirements; water use practices; wastewater characteristics; or non-water quality impacts. EPA will study the technical data collected through the surveys to determine the appropriate subcategorization for the aquatic animal production industry.

EPA will survey facilities from the aquatic animal production industry to fully capture the range of operations, wastewater types, and in-place treatment technologies for the entire sector. Data from the respondents will help EPA determine whether subcategorization of the industry is necessary for establishing effluent limitations. EPA will develop estimates of pollutant loadings and estimates of compliance costs associated with proposed regulatory options for each subcategory. It is important that EPA fully understand these differences to construct subcategories that are meaningful and effluent limitation guidelines that incorporate the differences in production among the subcategories.

(B) Evaluation of Aquatic Animal Production Processes and Wastewaters

EPA will use the data collected through the surveys to analyze aquatic animal production practices, pollution prevention practices, and wastewater treatment systems or pollutant control practices. Specifically, EPA analyzes each production process, including the water use, production, and wastewater discharge rates; best management practices (which may differ according to species); and the characteristics of pollution control practices to determine the wastewaters that require treatment, the treatment technologies applicable to those wastewaters, the effectiveness of these systems, and the final discharge characteristics from aquatic animal production facilities.

(C) Technical Feasibility Analysis

EPA will select technically feasible technology options—including control technologies and best management practices—for all subcategories. The Agency assesses the technical feasibility of each technology option by determining both its availability within the industry, and the degree to which it effectively eliminates the generation of pollutants and/or removes specific pollutants.

(D) Assessment of Technology Costs

EPA will use data collected through the surveys to help estimate the direct costs of the pollution control technologies, and/or best management practices selected as the technology basis options for the aquatic animal production effluent guidelines. These data include wastewater flow rates, production rates, data related to treatment technologies already in place, and pollutant concentrations. EPA will use the data collected through the surveys to help assess the following direct costs: treatment equipment capital costs; expenses associated with the engineering design of the equipment; installation costs; annual operating costs (e.g., power, chemicals, maintenance), equipment operator salary expenses (e.g., salary, benefits, overhead charges); and waste disposal costs.

(E) Calculation of Effluent Limitations

EPA will develop preliminary effluent limitations guidelines and standards for each technology option it has developed. The Agency will base these preliminary limitations on a detailed statistical analysis of treated effluent data from facilities that implement the recommended control technologies and/or management practices and that have well-operated treatment systems. EPA will develop preliminary effluent limitations for maximum daily and average monthly discharge levels.

In addition, EPA will evaluate the volume of wastewater, as well as the mass of pollutant generated per pound of product (e.g., gallons of wastewater per pound of fish produced, or pounds of ammonia generated per pound of fish produced). This evaluation will be used to determine if certain product types generate different types of wastewater, and if subcategorization is appropriate. EPA will develop production-normalized flows and/or pollutant loadings on which to base the limitations calculations for each subcategory.

(F) Environmental Assessment

EPA will perform an Environmental Assessment to determine the potential impact of aquatic animal production discharges on aquatic life and human health, as well as on the proper operation of POTWs and other treatment works. This assessment will characterize the potential risk posed by the discharges and will assist the Agency in projecting the environmental and economic benefits of the regulation.

(G) Development of Regulatory Options and Selection of Final Option

After EPA assesses technology options, calculates preliminary effluent guidelines, and performs economic analyses, EPA will develop regulatory options. For each option, EPA will assess the amount of each pollutant removed, the potential costs to the industry, the economic impacts of these costs on producers, cost-effectiveness, and non-water quality impacts. Based on these assessments, EPA will select the best regulatory option for each type of guideline or standard for each subcategory of the aquatic animal production industry.

(ii) Detailed Economic Analyses Supported by the Collection of 2000 Aquatic Animal Production Industry Data

EPA economists, statisticians, and contractors will perform detailed analyses of the data collected through the Collection of 2000 Aquatic Animal Production Industry Data. The economic data collected in the detailed survey will include corporate structure; quantities produced; cost and income information such as total sales, gross income, total expenses, and individual expense items such as interest, depreciation, and taxes; and assets and liabilities. EPA will collect these data for two levels—aquatic animal production operations at the facility and all operations at the facility (i.e. total farm). EPA intends to gather data for multi-facility companies as necessary through a follow-up to the detailed survey effort. Specific analysis using the economic data are described below.

(A) Estimation of Impacts on Aquatic Animal Production Enterprises

One element of the economic analysis is an estimation of the proposed regulation's impacts on aquatic animal production activities at individual facilities. Aquatic animals might be the only enterprise at some facilities, while other facilities may have several agricultural enterprises. In the first situation, the enterprise and facility data are the same while in the second case, the enterprise data is a subset of the facility data. In the second case, the profitability of aquatic animal production might be different than that of the total facility when examined in isolation. A successful aquaculture enterprise might support an otherwise financially vulnerable facility, or an unprofitable aquaculture enterprise might be supported by other facility enterprises.

A goal of the analysis will be to identify aquatic animal enterprises that might be vulnerable to closure due to additional pollution control requirements. A standard financial decision model will predict closure if the net present value of future income (net income or cash flow) from continued operations is positive prior to the incurrence of additional pollution control costs and negative after the incurrence of such costs. The forecasted income for the enterprise is a major determinant of the net present value of continued operations. The income projections are calculated using the information collected in the survey, including the tax status of the facility. A cost pass-through analysis (e.g., the estimated percentage of costs that the producer will be able to pass to his or her customers through higher prices) will be incorporated into the estimates, if appropriate and sufficient data exist to model and estimate this effect. Direct losses in output, revenue, and employment are calculated directly from the closure analysis results and survey responses.

(B) Estimation of Impacts on Facilities

A second element of the economic analysis is a determination of the proposed regulation's impacts on individual facilities. With actual facility-level financial information, EPA's analysis can compare facility-specific costs of compliance to facility financial data. For each proposed regulatory option under consideration, EPA can estimate the likelihood of any facility closures and also estimate financial impacts that are less severe than closure. The results will be extrapolated to estimate the total costs and impacts of the proposed regulation.

A goal of the analysis will be to identify facilities that might be vulnerable to closure due to additional pollution control requirements. As with the enterprise analysis, the financial analysis will use a standard financial decision model to predict closure if the net present value of future income (net income or cash flow) from continued operations is positive prior to the incurrence of additional pollution control costs and negative after the incurrence of such costs. The forecasted income for the facility is a major determinant of the net present value of continued operations. The income projections are calculated using the information collected in the survey, including the tax status of the facility. A cost pass-through analysis (e.g., the estimated percentage of costs that the producer will be able to pass to his or her customers through higher prices) will be incorporated into the estimates, if appropriate and sufficient data exist to model and estimate this effect. As mentioned in the previous section, EPA will examine the facility analysis results to identify facilities that are vulnerable to closure even if the aquatic animal production enterprise itself does not appear vulnerable from the additional costs. Such a situation could occur if the aquaculture operations support an otherwise unprofitable facility. Direct losses in output, revenue, and employment from aquatic animal production can be calculated directly from the closure analysis results and survey responses. EPA also intends to evaluate potential losses from co-located crops at affected facilities.

(C) Estimation of Impacts on Companies

If the facility has no further corporate hierarchy, the company analysis will be based on the financial information requested in the detailed survey. EPA intends to gather data for multi-facility companies, as necessary, as a follow-up to this survey effort. EPA will estimate and aggregate the costs for all facilities with aquatic animal production operations owned by a given company. The combined cost to the company will be analyzed in the context of the company's financial status to evaluate the overall impact. The company-level impact analysis is necessary for several reasons:

- It identifies situations where it may make financial sense for a company to upgrade each facility that it owns, but it cannot incur the aggregate costs without financial distress.
- Financing decisions typically are made at the corporate level.
- The Small Business Administration (SBA) defines "small" on the basis of the number of employees or revenues at the company—not the facility—level.

EPA intends to evaluate a farm's financial performance using criteria that have been established by the U.S. Department of Agriculture (USDA), as well as other financial ratios that are commonly used by USDA and industry to assess farm financial performance. For example, in its analyses of the financial performance of U.S. farms, USDA uses a combination of a farm's net income and debt-to-asset ratio to classify the overall financial position of a farm based on annual earnings and solvency. Net farm income—which is obtained from income statement information (i.e., income and expenses)—provides a measure of long-term profitability. Debt-to-asset ratios—which are obtained from balance sheet information (i.e., assets and liabilities) provide a measure of a farm's financial risk. Together these two measures provide an indicator of the farm's long-term financial health and viability. USDA's financial classification of U.S. farms identifies an operation with negative income and a high debt-asset ratio as "vulnerable." An operation with positive income and a low debt-asset ratio is considered "favorable."

Wherever possible, EPA will collect supporting data needed to assess company-level impacts from secondary sources to reduce the burden on survey recipients. Secondary sources might provide data for multi-facility, publicly-reporting companies but are inadequate for companies with private ownership.

(D) Estimation of Secondary Impacts

EPA will assess the secondary impacts of projected facility closures on other segments of the economy. For example, employment losses and reductions in derived demand for input goods/services could potentially erode the economic condition of households and aquacultural firms in communities around aquatic animal production facilities that reduce production or close. Estimation of these community impacts depends upon employment and labor income data from the aquatic animal production survey effort, macroeconomic multipliers, and economic data from secondary sources.

3. NONDUPLICATION, CONSULTATION, AND OTHER COLLECTION CRITERIA

3(a) NONDUPLICATION

The Engineering and Analysis Division (EAD) of the Agency's Office of Water has made every reasonable attempt to ensure that the Collection of 2000 Aquatic Animal Production Industry Data does not request data and information currently available through less burdensome mechanisms. Specifically, EAD has explored Agency databases, directories, contacts, and sources to locate data and information significant to the regulatory development process. In addition, the Agency conducted a thorough collection and review of secondary sources, which include data, reports, and analyses published by government agencies (such as the Department of Agriculture's *Aquaculture Census* and state department of agriculture reports); reports and analyses published by the aquatic animal production industry and its associated organizations; and reports, analyses, and published enterprise budgets published by environmental organizations. These include a U.S. Fish and Wildlife Service listing of Federal hatcheries and fish and egg distribution report, reference book and internet searches for academic and research facilities, a Dun and Bradstreet database by industry (for mailing list information), EPA's Permit Compliance System and Discharge Monitoring Reports for pollutant loadings, and the Bureau of Indian Affairs web site for hatcheries on Tribal lands. Although the sources have provided valuable

industry information, and the Agency will combine this information with data gathered through the aquatic animal production industry surveys, none of these sources can provide EPA with the complete and up-to-date, industry-wide, site-specific technical and economic data crucial to the development of aquatic animal production effluent limitation guidelines. None of these publicly-available sources provide treatment or financial information at a facility or company level that can be used to analyze potential regulatory impacts.

3(b) PUBLIC NOTICE REQUIRED PRIOR TO ICR SUBMISSION TO OMB

(i) Publication of the *Federal Register* Notice

On September 14, 2000, EPA published a notice in the *Federal Register*, 65 FR 55522, announcing the Agency's proposed Aquatic Animal Production Industry Survey (Attachment 3). The notice included a description of the entities affected by the proposed survey effort, a brief explanation of the need for the survey, identification of the authority under which EPA will issue the survey, and an estimate of the burden to be incurred by survey respondents. Through the notice, the Agency requested comments and suggestions regarding the survey and the reduction of the data collection burden, and asked the public to submit all comments and suggestions within 60 days of the *Federal Register* notice publication.

(ii) Public Response to the *Federal Register* Notice

EPA received written comments from 45 individuals and organizations within 60 days of the *Federal Register* notice publication. Attachment 4 contains comment summaries organized by topic and EPA's response(s).

(iii) EPA Action Resulting from Public Comment

Table 3-1 summarizes the significant changes EPA made to the survey instrument in response to comments. The question numbers in the topic column of Table 3-1 refer to the September 14, 2000 version of the survey. EPA also added, revised, or clarified definitions in response to comments and these changes are presented in Table 3-2.

Table 3-1
Significant Changes to Survey Instrument

Topic	Explanation of Modification
General Changes to Survey	
Survey organization	Reorganized the survey to make it easier to follow. Created three parts to the survey: • Part A - Technical Information • Part B - Financial Information • Part C - Certification
	Changed the base year from 1999 to 2000.
	Reorganized Part A - Technical Information into sections and subsections that place similar questions from the original survey into groups of similar topics. Revised questions on source water and wastewater and placed them in subsections organized by production system (i.e., ponds, flow through systems, recirculating systems, net pens and cages, floating aquaculture and bottom culture, and other aquaculture). Skip patterns were added to minimize the burden to respondents.

	Worked with the JSA Aquaculture Effluents Task Force to modify each of the production system subsections. The outline for each subsection is:
	• brief introduction explaining the subsection
	• site diagram that asks for a sketch of the site that will help EPA to understand the layout of the facility and the pollution treatment controls that are in place
	• a description of the system including the water source and the number and type of units (e.g., ponds, tanks, etc.)
	• description of drainage from the production units
	• description of pollutant control practices
	  • management practices that are used before water leaves the production system
	  • pollutant control practices after it leaves the production system
	  • treatment of effluents from treatment systems (if applicable)
	  • solids treatment practices (if applicable)
	• description of the fate of wastewater discharges - whether wastewater leaves the property, NPDES permit information and location of the discharge
	• directions for the respondent to complete additional subsections for other types of production systems, if applicable
	• directions for the respondent to complete additional sections of the survey or to go directly to the certification section if no water leaves the property

	Revised Part B- Financial Information to make this part of the survey easier to complete, reflecting comments on the complexity of the original survey. Expanded the introductory explanatory text. Members of the JSA Economics Task Force reviewed the Financial Information part and EPA incorporated all of the suggestions about rewording and reorganizing the questions from this group. Skip patterns were added to minimize the burden to respondents.

Topic	**Explanation of Modification**
	Added section numbering to make the survey easier to follow and created skip patterns that will allow respondents to skip questions that are not applicable to their individual farm/facility.
Introduction	
Definitions	EPA added new definitions in response to many of the comments that asked for clarification and explanation of the terms used in the survey. Table 3-2 provides details for the definitions that were changed, added, or deleted.
Terminology	Changed Floating Mariculture to Floating Aquaculture at the suggestion of industry representatives to be consistent with common terminology in the aquaculture industry.
Certification	Moved the certification portion of the survey to the end. A second certification statement was added for those who receive the survey and are not aquatic animal producers.
Information Contact and Facility Information	
	Renamed to Section 1 - Information Contact. This section now includes three questions. • Added a new question to determine if respondents are aquatic animal producers. A no response directs the respondent to certify and return the blank survey to EPA. A yes response directs the respondent to continue: • Old question 1. • Old question 2.
Question 2	Added Saturday and Sunday as response options under part d
Question 3	Deleted the question and replaced with new question 1 and additional directives in the survey for those respondents who do not discharge off of their properties. Producers who do not discharge off their properties will be asked for information that enables EPA to determine the scope of their operations and which category of no discharge.
Ownership Information	
	Created new Section 2 - Ownership Information. This section includes three questions: ■ Old question 21. ■ Old question 23. ■ Old question 26
Question 21	No changes
Question 23	No changes.
Question 26	Changed the primary product category column to primary species. The respondent will not have to enter a code from an appendix, but will be asked to enter the primary species grown. EPA will link similar species responses. Added query about total company revenues for those companies that have multiple facilities.

Topic	Explanation of Modification
General Facility Information	
	Renamed to Section 3 - General Facility Information. This section now includes three questions: • Old question 4. • Old question 5. • Added a new question to determine the amount of land at the facility and the amount of land not in aquacultural or agricultural production. This information will be used to estimate the availability and cost of land for wastewater treatment.
Questions 4	Clarified the responses to the question.
Question 5	No change.
Question 6	Changed to table to reflect the actual code descriptions as the column headings instead of asking for SIC/NAICS codes. The respondent will not have to enter a code. The codes can be correctly coded in the survey analysis phase. Moved to Part B - Financial Information, question 71.
Process Water	
	Incorporated this section into the subsections of Section 5 - Wastewater Control Technology. In each of the subsections, the question was modified slightly to reflect the specific characteristics of each production system type.

Topic	Explanation of Modification
Wastewater Treatment	
	Changed this to Section 4 - Wastewater Control Technology. The section contains six subsections for each of the production system types: • Ponds • Flow through systems • Recirculating systems • Net pens and cages • Floating aquaculture and bottom culture • Other aquaculture systems Each subsection contains a series of questions that are tailored to the specific system type. The questions are generally grouped as: • Site diagram - sketch from respondent of facility layout • System description - water source (old question 7), list of number and types of similar production units • System drainage (when applicable) - descriptions of where water goes after leaving the production unit • For ponds, description of overflows from ponds • Pollutant control practices - what treatments are used in the system and after water leaves the production system • Water discharges (when applicable) - what is the fate of the water leaving the systems; NPDES permit number and discharge location information After completing all relevant subsections, the respondent is directed to continue on with the remainder of the survey. For those facilities that do not discharge offsite, the respondent is done with the survey and directed to Part C - Certification.
Question 7	Changed the responses to single check boxes for each response. Ask respondents to check all responses that apply. Changed definitions of water sources to be consistent with the sources that were used in the Census of Aquaculture survey. The following are the new question numbers: • **Ponds** - question 10 • **Flow through** - question 19 • **Recirculating Systems** - question 29 • **Net pens and Cages** - not applicable • **Floating Aquaculture and Bottom Culture** - not applicable • **Other Systems** - question 47 The question is in two parts, the first asks about the water source in general and the second asks whether the source is fresh or salt water.

Topic	**Explanation of Modification**
Question 8	Changed the question to a tabular format that is tailored to each system type. The following are the new question numbers: • **Ponds** - questions 12 and 13; the question was reworked into a table to ascertain the approximate discharges from the ponds and whether flushing is a regular management practice • **Flow through** - question 21; the question is a table that partitions discharges and flow rates • **Recirculating Systems** - question 31; the question is a table that establishes a water discharge balance for the recirculating system • **Net pens and Cages** - not applicable • **Floating Aquaculture and Bottom Culture** - not applicable • **Other Systems** - questions 49 and 50; tables to determine daily discharges and drainage frequencies and volumes
Question 9	This question was moved to the appropriate subsections for the different culture systems (ponds, flow through, etc.). The question responses were modified to be appropriate for the different culture systems. The following are the new question numbers: • **Ponds** - question 16 - reworded to include appropriate options for onsite and offsite discharges; question 17 - NPDES permits, the response was clarified; and question 18 - location of discharge, reworded question for clarity • **Flow through** - question 26 - reworded to include appropriate options for onsite and offsite discharges; question 27 - NPDES permits, the response was clarified; and question 28 - location of discharge, reworded question for clarity • **Recirculating Systems** - question 36 - reworded to include appropriate options for onsite and offsite discharges; question 37 - NPDES permits, the response was clarified; and question 38 - location of discharge, reworded question for clarity • **Net pens and Cages** - question 41 - NPDES permit information • **Floating Aquaculture and Bottom Culture** - question 45 - NPDES permit information • **Other Systems** - question 54 - reworded to include appropriate options for onsite and offsite discharges; question 55 - NPDES permits, the response was clarified; and question 56 - location of discharge, reworded question for clarity

Topic	Explanation of Modification
Question 10	Created two or three questions to determine management practices before water leaves a production system, practices and technologies after water leaves the production system, and (where applicable) intermediate treatments or technologies. Incorporated old question 11 in the responses. Responses were made appropriate for each culture system type. The following are the new question numbers: • **Ponds** - question 14 - pond management practices before water leaves the pond; question 15 - pollutant control practices after water leaves the pond • **Flow through** - question 22 - system management practices before water is discharged; question 23 - pollutant control practices after water leaves the production system; question 24 - pollutant control practices after water leaves a treatment system • **Recirculating Systems** - question 33 - list of in-system practices to treat water; question 34 - pollutant control practices after water leaves the system • **Net Pens and Cages** - question 42 - management practices to improve water quality in and around the systems • **Floating Aquaculture and Bottom Culture** -question 46 - management practices to improve water quality in and around systems • **Other Systems** - question 51- management practices to treat water before water leaves the system; question 52 - pollutant control practices after water leaves the system
Question 11	Incorporated replacement questions for each system type for management practices before water leaves the system, pollutant control practices after water leaves the system, and wastewater discharge questions.
Question 12	Responses were made appropriate for each culture system type. The following are the new question numbers: • **Ponds** - question 15;added several BMP responses that were recommended by comments and deleted unlikely responses • **Flow through** - question 25; added several responses per comments and deleted unlikely responses • **Recirculating Systems** - question 35 • **Net pens and Cages** - not applicable • **Floating Aquaculture and Bottom Culture** - not applicable • **Other Systems** - question 53
Question 13	Moved to Section 5 - Cost Information; new question 57; asks the respondent to describe in detail each of the pollutant control practices that are being used at the facility.
Question 14	Moved to Section 5 - Cost Information, new question 57; creates a table for each pollutant control practice that is identified by the respondent. The table is in two parts - capital costs and annual costs. This information is important for EPA to determine the costs associated with pollutant control practices that could be recommended as a part of the effluent limitations guidelines. An example is provided for clarity.

Topic	Explanation of Modification
Question 15	Moved to Section 5 - Cost Information, new question 54. Fixed units on Feed, depredation, and chemicals to be a mass, not rate. Changed depredation to predator control. Added definitions to full and part time labor. Deleted 6 items from the Repairs and Maintenance portion of the table; these items are redundant with items asked in the Financial Information part of the survey. Three items, accounting/legal, advertising/marketing, and misc. supplies no longer requested as individual items.
Question 16	Moved to Section 6 - Monitoring Information, new question 59. Simplified the table to ask for pollutants and frequency for the past three years (1998 - 2000). Added check box to determine of the facility monitored for pollutants prior to 1998.
Aquatic Animal Production Operations	
Question 17	Moved to Section 4 - Wastewater Control Technology. Respondents are asked to supply a site diagram and fill in a table to describe the facility. Each table is tailored to the particular system type. The following are the new question numbers: • **Ponds** - question 11 - description of pond(s), number, average surface area, average depth, and whether supplemental aeration is used • **Flow through** - question 20 - description of raceways, ponds or tanks, total number in a block, water is reuse, dimensions, and construction materials • **Recirculating Systems** - question 30 - description recirculating system, number of systems, average volume, average daily volume of make-up water • **Net pens and Cages** - question 39 - description of net pens or cages, number and construction materials, dimensions; question 40 - location information (latitude and longitude), description of location, water depth • **Floating Aquaculture and Bottom Culture** - question 43 - description of floating aquaculture or bottom culture, number and construction materials, dimensions; question 44 - location information, description of location, water depth • **Other Systems** - question 48 - description system, number of systems, average volume, average daily volume of make-up water
Question 18	Moved to new Section 7 - Product Losses, questions 61. Clarified wording to "If escapement data are available, how many fish... escaped from your facility in 2000?" Changed the check box for no escapement to "Check this box if there were no escapes or you did not monitor escapes at this facility in 2000..." Added definitions for native and non-native species in Definition section per comments. Added lifestage columns. Changed response to number of escaped.
Question 19	Moved to Section 7 - Product Losses, question 60. Changed wording to include the total loss of aquatic animals for all causes (including escapement). Changed response to number escaped. Added lifestage columns.
Question 20	Moved to Section 8 - Feed Information, question 62. Revised the table to include columns for feed type, annual amount used, peak month amount used, manufacturer and product number/ID and feed content. Changed response for feed content to % protein and % phosphorus only. Instructed respondents to list each type of feed used at the facility. Added second table for medicated feeds that includes feed type, annual amount used, peak month of use, manufacturer information, active ingredient, and feed content.

Topic	Explanation of Modification
ECONOMIC AND FINANCIAL INFORMATION	
Developed three sets of financial questions for private/commercial, government, and academic/research respondents.	
Ownership Information	
Question 21	Moved to Section 2 - Ownership Information, question 4.
Question 22	Deleted.
Question 23	Moved to Section 2 - Ownership Information, question 5.
Question 24	Deleted.
Question 25	Deleted.
Question 26	Moved to Section 2 - Ownership Information, question 6. Changed the primary product category column to primary species. The respondent will not have to enter a code from an appendix, but will be asked to enter the primary species grown. EPA will link similar species responses, based on name. Added query about total company revenues for those companies that have multiple facilities.
Employment	
Question 27	Deleted. Information requested in Section 5 - Cost Information (question 54).
Income Statements	
Question 28	Moved to Section B - Economic and Financial Information, question 1.
Questions 29-31 General	Formerly, 1999 - 1997 income statement information for aquatic animal enterprise, facility, and company. Changes include: • Requests cost and income information for total farm/facility for 2000 - 1998. The respondent does not have to complete question 67 if aquatic animals are the only agricultural products produced. Data for multi-facility companies will be collected during follow-up. • Income data simplified to address both cash and accrual accounting methods. Number of items to complete reduced. • Costs asked as total expenses and selected individual items. The respondent now enters data directly from their tax forms (such as Schedule F or Schedule C). While there are more cost items being requested, the respondent does not have to combine individual items into the general categories asked in the previous questionnaire. Also, most of the new cost items in this question are those that were previously being asked in the old question 15; they have just been moved. • Added option for respondents to voluntarily provide copies of their 2000 - 1998 tax filings(Schedule F or Schedule C) or income statements in lieu of completing the question.

Topic	**Explanation of Modification**
Questions 29c, 30c, and 31c	Section B, question 65 requests income from fee fishing operations for 2000 - 1998. A skip pattern was added that directs respondents to the next question if there is no income derived from fee fishing operations.
Questions 29e, 30e, and 31e	Section B, question 66 requests income from agricultural products other than aquatic animals for 2000 - 1998. A skip pattern was added that jumps respondents to the next question if there is no income derived from other agricultural products.
Question 32	Moved to Section B, questions 69 and 70. A skip pattern was added to help respondents who do not keep balance sheets for their facility (i.e., small entities). If the farm/facility prepares balance sheets the respondent is directed to answer question 69. If not, respondents are directed to skip to question 70, where the respondent lists the basic information that goes into compiling a balance sheet. This approach allows EPA to gather the basic information needed to construct financial ratios for use in the economic analysis without requiring respondents to prepare complete balance sheets. Accrual items are shaded to indicate which should not appear on a cash basis balance sheet.
Questions 33 and 34	Combined into Section B, question 68. Format changed from product category to species and life cycle code for clarity.
Question 35	Deleted. Including copies of financial statements is now optional.

Table 3-2
Changes and Additions to the Definitions

Term	Modification	Reason
	General Comment - Clarification of definitions	Suggested by National Marine Fishery Service to clarify definitions and make them less technical
Accrual Method of Accounting	Added	As a result of modifying survey
Aeration Lagoon	Added	Suggested by Florida Department of Agriculture and Consumer Services and US Fish and Wildlife Service
Algae	Deleted	Not referenced in survey
Aquaculture	Not Added	Suggested by US Fish and Wildlife Service; Defined in text of survey
Aquaculture Industry	Not Added	Not referenced in survey; Suggested by US Fish and Wildlife Service
Best Financial Estimates	Added	Suggested by NASAC
Best Management Practices	Not Added	Suggested by Richard Bragg, NASAC, Carole Engle, and US Fish and Wildlife Service; Defined in text of survey
Biological Control Agent	Not Added	Not referenced in survey; Suggested by Keo Farms
Broodstock	Deleted	Defined in text
Cash Method of Accounting	Added	As a result of modifying survey
Chlorination	Deleted	Term is understood by those who use chlorination as a treatment
Clarifier	Clarified	Suggested by US Fish and Wildlife Service and Florida Department of Agriculture and Consumer Services
Co-located crops	Added	Clarification
Company	Added	Suggested by the US Trout Farmers Association
Cost Method of Balance Sheet Valuation	Added	As a result of modifying survey

Term	**Modification**	**Reason**
Crustacean	Deleted	Defined in the text
Dechlorination	Not Added	Term understood by those who use dechlorination as a treatment
Discharge	Added	Suggested by NASAC
Effluent	Added	Suggested by US Fish and Wildlife Service
Facility	Clarified	Suggested by Keo Farms and US Trout Farmers Association
Fee-fishing Operation	Added	Clarification
Financial Statements	Added	Clarification
Fingerling	Clarified	Standardize the definition for the survey
Food-size fish	Clarified	Standardize the definition for the survey
Fry	Clarified	Standardize the definition for the survey
Groundwater	Deleted	Defined in the text
Income Statement	Clarified	Simplified definition for survey
Lagoons	Deleted	Not referenced in survey
Market Value Method of Balance Sheet Valuation	Added	As a result of modifying survey
NAICS	Deleted	Not referenced in survey
Native Species	Added	Suggested by US Trout Farmers Association and US Fish and Wildlife Service
Non-native Species	Added	Suggested by US Trout Farmers Association and US Fish and Wildlife Service
Nitrification	Deleted	Not referenced in survey; Clarification suggested by Freshwater Institute
Ornamental fish	Deleted	Defined in the text
Point Source	Added	Suggested by NASAC
Pollutant	Clarified	Suggested by NASAC
Process Water	Not Added	Not referenced in survey; Suggested by US Trout Farmers Association

Term	Modification	Reason
Process Wastewater	Not Added	Not referenced in survey; Suggested by US Trout Farmers Association
Publicly Held	Deleted	No longer referenced in survey
Receiving Water	Added	Suggested by Carole Engle
Residual Solids	Not Added	Not referenced in survey; Suggested by US Fish and Wildlife Service
Revenues	Not Added	No longer referenced in survey; suggested by Richard Bragg
Sedimentation Basins	Added	Suggested by Florida Department of Agriculture and Consumer Services and US Fish and Wildlife Service
SIC	Deleted	Not referenced in survey
Sludge Dewatering/dehydration	Added	Suggested by Keo Farms
Stockers	Clarified	Standardize the definition for the survey
Wastewater	Clarified	Suggested by US Trout Farmers Association, University of Arkansas, and NASAC
Wastewater Recycle	Not Added	Not referenced in survey; Suggested by California Aquaculture Association and US Fish and Wildlife Service
Wastewater Reuse	Added	Suggested by California Aquaculture Association and US Fish and Wildlife Service
Wastewater Treatment System	Added	Suggested by Carole Engle and NASAC
Water Use	Not Added	Not referenced in survey; Suggested by US Trout Farmers Association
Waterway	Not Added	Not referenced in survey; Suggested by Carole Engle
Wetland Treatment System	Added	Suggested by Florida Department of Agriculture and Consumer Services
Well water	Added	Suggested by Keo Farms and US Trout Farmers Association

3(c) CONSULTATIONS

Prior to publishing the *Federal Register* notice announcing the Agency's proposed Collection of 2000 Aquatic Animal Production Industry Data, EPA distributed draft copies of the survey to the Joint Subcommittee on Aquaculture (JSA), Aquaculture Effluents Task Force (AETF). The Agency requested that the JSA AETF conduct a review of the survey, and provide EPA with informal comments prior to the publication of the *Federal Register* notice. EPA then reviewed the comments provided and revised the preliminary draft survey given to the JSA AETF. EPA incorporated as many comments as possible to improve the preliminary draft survey. As a result of this initial review, EPA revised the survey and made it available for formal comment at the time the first *Federal* Register notice was published on September 14, 2000. After compiling and reviewing the formal comments submitted, EPA revised the detailed survey and also added a screener to address concerns raised before submitting the ICR package to OMB for review and approval. EPA also conducted additional outreach with AETF members during this time. Table 3-3 highlights some of the meetings and conference calls EPA has held with stakeholders to date.

Table 3-3
Stakeholder Meetings and Conference Calls

Date	**Meeting/Conference Call**
February 2000	Conference in New Orleans
March 2000	Meeting in Pennsylvania (State Dept. of Ag)
April 2000	JSA AETF Meeting
May 2000	Meeting in Wisconsin (NASAC)
June 2000	JSA AETF Meeting
June 2000	JSA Economic Technical Subgroup Conference Call
July 2000	Roanoke Conference
July 2000	Economic Technical Subgroup Conference Call
September 2000	Economic Technical Subgroup Meeting
September 2000	JSA AETF Industry Profile Meeting
November 2000	Roanoke Conference
January 2001	JSA AETF Meeting and Econ Technical Subgroup Meeting
February/March 2000	Multiple conference calls on survey with JSA AETF Technical Subgroup

3(d) EFFECTS OF LESS FREQUENT COLLECTION

EPA intends to distribute a screener or short survey to approximately 5,000 facilities that EPA has identified. After analysis of the screener responses, EPA will distribute a more detailed survey to a stratified random sample of approximately 500 to 700 facilities. The surveys are one-time mailing designed to gather the necessary data to develop effluent limitations guidelines and standards for the aquatic animal production industry.

3(e) GENERAL GUIDELINES

EPA will conduct the Collection of 2000 Aquatic Animal Production Industry Data in accordance with the Paperwork Reduction Act (5 CFR 1320.5(d)(2)), and will adhere to OMB general guidelines for information collections.

3(f) CONFIDENTIALITY

In accordance with 40 CFR, Part 2, Subpart B, section 2.203, the Collection of 2000 Aquatic Animal Production Industry Data instruments inform the respondents of their right to claim information as confidential. The surveys provide instructions for claiming confidentiality, and inform respondents of the terms and rules governing the protection of Confidential Business Information (CBI) under the Clean Water Act and 40 CFR2.203(B). A CBI box accompanies each survey question which requests potentially confidential information. Survey respondents are requested to check all CBI boxes which accompany responses they claim as confidential. To minimize respondent burden, EPA also placed a global check box at the beginning of the detailed survey. By checking this single box, the respondent indicates his/her intention to identify all responses as confidential.

EPA and its contractors will follow EAD's existing procedures to protect data labeled as CBI. These procedures include the following:

- Ensuring secure handling of completed surveys to preclude access by unauthorized personnel;
- Storage of completed surveys and databases in secured areas of offices, and restrict access to authorized EPA and contractor personnel only;
- Restricting any publications or dissemination of confidential study results or findings to aggregate statistics and coded listings. Individual respondents will not be identified in summary reports, and EPA contractors will not release respondents' names to unauthorized individuals.

Each EPA contractor that collects, processes, or stores CBI is responsible for the proper handling of those data. Each contractor shall safeguard information as described in section 2.211(d) of Subpart B

and is obligated to use or disclose information only as permitted by the contract under which the information is furnished.

3(g) SENSITIVE QUESTIONS

The Collection of 2000 Aquatic Animal Production Industry Data does not include sensitive questions regarding sexual behavior or attitudes, religious beliefs, or other personal matters.

4. THE RESPONDENTS AND THE INFORMATION REQUESTED

4(a) RESPONDENTS AND SIC/NAICS CODES

EPA will distribute the surveys to facilities with aquatic animal production operations. The following list of (Standard Industrial Classification) SIC codes are associated with activities affected by the data collection effort covered under this ICR:

- 0273 - animal aquaculture
- 0921 - fish hatcheries and preserves
- 8422 - aquariums

The North American Industry Classification System (NAICS) replaces SIC. The following NAICS codes cover activities covered under this ICR:

- 112511 - finfish farming and fish hatcheries
- 112512 - shellfish farming
- 112519 - other animal aquaculture
- 712130 - aquariums

4(b) INFORMATION REQUESTED

(i) Screener Survey

EPA has designed the survey instrument to include many burden-reducing features, such as questions that require only a “yes” or “no” answer and skip patterns. Question 1 asks the respondent whether he or she grows aquatic animals at the facility. If not, the respondent is instructed to skip to the end of the survey, sign the applicable certification, and return the survey to EPA. If so, the respondent is instructed to complete the survey. Question 2 requests verification or correction of the facility name and mailing address on the identification label.

Question 3 requests the name and address of the company that owns the facility. Because all aquatic animal producers that receive the questionnaire answer this question, the data will be used to group operations by company in order to aggregate costs and evaluate impacts on the company level.

Question 4 collects information to allow EPA to classify a facility as private/commercial, government, or academic/research. If the facility is private/commercial, the information in Question 4 allows EPA to classify its tax status.

Question 5 asks the respondent to identify the production levels at the facility. Question 6 asks the respondent to identify the production methods used at the facility. Question 7 asks whether water from aquatic animal production leaves the property. If yes, Question 8 asks whether the water goes to a publicly owned treatment works (POTW). This information will help determine whether a facility is a direct or indirect discharger. Question 9 asks the respondent to identify pollutant control practices used at the facility if water is released from the property. The interrelationship of the responses for Questions 5, 6 and 9 permit EPA to develop a matrix of the possible species/production method/pollution control combinations seen throughout the industry. As such, EPA can identify where follow-up site visits might be required to evaluate configurations not previously identified and studied. EPA can also develop a sampling frame by characteristic to relate the questionnaire data to national estimates.

(ii) Detailed Questionnaire

EPA has designed the survey instrument to include many burden-reducing features, such as questions that require only a "yes" or "no" answer and skip patterns. The introduction to the survey contains information on the authority under which EPA will administer the survey, help line contact information, how respondents should identify information as confidential, instructions for completing the survey, and a litst of definitions.

(a) General and Technical Information

The detailed survey is divided into three parts (Part A - Technical Information, Part B - Economic Information, and Part C - Certification) to make the skip patterns easier to follow. The introduction to the survey contains information on the authority under which EPA will administer the survey, help line contact information, how to mark information as confidential, general instructions, and definitions. Part A contains primarily technical information about the facility wastewater characteristics, current treatment practices, production systems, and costs.

(i) Part A - Technical

Information contact and facility information. This section confirms that the facility produces aquatic animals, verifies the facility mailing address and establishes contact information. Question 1 asks the respondent whether aquatic animals are grown at the facility. If not, the respondent is instructed to skip to the end of the survey, sign the applicable certification, and return the survey to EPA. If so, the respondent is instructed to complete the survey. Question 2 request's verification or correction of the facility name and mailing address on the identification label. Question 3 asks the respondent to identify an individual for EPA to contact concerning information submitted in the survey, as well as the days and times when EPA can reach him or her.

Ownership information. With Question 4, EPA begins to collect information to help assess the economic achievability of the regulatory options it considers. To minimize the burden of responding to the survey, EPA limited the information it will request. The questions are phrased with commonly used terminology and the tables are organized in formats familiar to financial officers in the respondent industry.

Question 4 requests the name and address of the company that owns the facility. Because all facilities that receive the questionnaire answer this question, the data will be used to group operations by company ownership in order to aggregate costs and evaluate impacts on the company level. Question 5 requests the facility's corporation type to determine a facility's tax status.

Question 6 asks the respondent to list each type of aquatic animal production facility and the primary species raised at each facility owned by the company . The response to Question 6 allows EPA to verify its findings when it aggregates data on the basis of information supplied in Question 4. Question 6 also requested total company revenue for fiscal year 2000. The Small Business Administration size standards are set at the company level, not the facility level. Under the North American Industrial Classification System (NAICS), the size standards for aquatic animal production are based on total revenues. EPA will use the information in Question 6 to estimate the number of facilities classified as small businesses.

General facility information. The purpose of Question 7 is to provide EPA with qualitative information about the relative importance of aquatic animal production to the individual or facility. Question 8 asks the respondent to classify himself/herself as a contract operator, an independent operator, or part of a cooperative. Other effluent guideline studies indicate that the financial characteristics may vary substantially according to these categories. Question 9 asks the respondent for total acreage of the facility and the amount of land not in aquacultural or agricultural production. This information will be used to help estimate the availability and cost of land for wastewater treatment.

Wastewater Control Technology. EPA divided this section into different subsections based on production system type so that the respondent only answers the subsections relevant to his/her facility. The subsections are organized in the following order: ponds, flow through systems, recirculating systems, net pens and cages, floating aquaculture and bottom culture, and other aquaculture systems. The introduction to this section directs the respondent to the individual subsections that may be applicable to the facility being surveyed.

Questions 10-18 request information on pond operations. Questions 19 - 28 apply to flow through systems. Questions 29 - 38 apply to recirculating systems. Questions 29 - 38 apply to net pens and cages. Questions 43 - 46 apply to floating aquaculture and bottom culture. Questions 47 - 56 apply to other aquaculture systems.

Ponds. The pond subsection begins with a brief introduction that outlines the questions on ponds and explains the definition of discharge as it is used in the survey. The respondent is asked to provide a detailed sketch of the pond and facility layout to help EPA understand the extent and configuration of the aquatic animal production facility. An example is provided for the respondent.

Question 10 asks for the water source and whether it is fresh or salt water. Question 11 asks for the number and types of ponds at the facility. The information from questions 10 and 11 help characterize the quantity and quality of influent to the production system. Some of the water sources for ponds will have an impact on the timing and quality of discharges from those ponds. For example, ponds that use runoff water from adjoining watersheds will be prone to overflows that are similar in quality to the inflowing water during rainy seasons. Question 11 also asks about supplemental aeration practices, which have a strong influence on in-pond processes that will affect the water quality of any discharges. EPA will use the aeration information in developing the cost estimates for treatment.

Question 12 asks about the typical pond drainage practices at the facility. This information will help EPA to understand the pond management practices at the facility and the potential volumes and quality of effluents from the ponds. Question 13 asks about the pond management practice of flushing water through a pond in an attempt to improve water quality in the pond. This three-part question asks about the frequency and volume of exchange flows.

Questions 14 and 15 ask about pollutant control technologies used both before and after water is discharged from the ponds. EPA will use the responses to these two questions to determine best management practices and treatment technologies currently used to improve the effluent quality of pond discharges.

Question 16 asks the respondent to identify how water leaves the facility property. If water is not discharged off the facility property, the onsite fate is queried. Question 17 asks for an NPDES permit number if the facility has one, and Question 18 asks for the location of the discharge. These questions will help EPA with the environmental assessment and impact studies.

After completing Question 18, the respondent is directed to complete additional sections of the survey. For those facilities that have systems other than ponds, the respondent is directed to the appropriate system-specific sections. For offsite discharging facilities, the respondent is directed to the additional cost and economic sections of the survey. For those with only ponds and onsite discharges, the respondent is directed to the certification section.

Flow Through Systems. The flow through system subsection begins with a brief introduction that outlines the questions on flow through systems and explains the definition of discharge as it is used in the survey. The respondent is asked to provide a detailed sketch of the flow through system and facility layout to help EPA understand the extent and configuration of the aquatic animal production facility. An example is provided for the respondent.

Question 19 asks about the origin of the source water and whether it is fresh or salt water. The information on the source water is necessary to help EPA understand the quality of water entering the flow through systems.

Question 20 asks the respondent to provide additional details about the sizes and numbers of different raceways, ponds, or tanks in the flow through system. Question 21 seeks information about the flow rates of water through the flow through systems. The respondent is asked to partition the outflows

to help EPA understand the volumes of discharges that are treated using typical treatment technology options.

Question 22 asks about management practices that are used in the flow through system before water leaves the raceways, ponds, or tanks. This information will be used to determine the extent of best management practices used in the industry. Question 23 asks about pollutant control technologies used at the facility after the water leaves the production raceways, ponds, or tanks. EPA will use the responses from these questions to identify treatment already in use and to determine the treatment basis for regulatory options as well as to develop cost estimates for these options. Question 24 asks about any treatments that occur after water leaves settling basins. Both full flow and offline settling basins are known to be common treatment practices in the industry. Some facilities further treat water that is discharged from the settling basins. Question 25 asks about the fate of solids from the settling basins or other solids separation practices. The information from Question 25 will inform EPA about the solids disposal practices used in the industry.

Question 26 asks the respondent to identify how water leaves the facility property. If water is not discharged off the facility property, the onsite fate is queried. Question 27 asks for an NPDES permit number if the facility has one and Question 28 asks for the location of the discharge. These questions will help EPA with the environmental assessment and impact studies.

After completing Question 28, the respondent is directed to complete additional sections of the survey. For those facilities that have systems other than flow through systems, the respondent is directed to the appropriate system-specific sections. For those who discharge offsite, the respondent is directed to the additional cost and economic sections of the survey. For those with only flow through systems and onsite discharges, the respondent is directed to the certification section.

Recirculating Systems. The recirculating system subsection begins with a brief introduction that outlines the questions on recirculating systems and explains the definition of discharge as it is used in the survey. The respondent is asked to provide a detailed sketch of the recirculating system and facility layout to help EPA understand the extent and configuration of the aquatic animal production facility. An example is provided for the respondent.

Question 29 asks about the origin of the source water and whether it is fresh or salt water. The information on the source water is necessary to help EPA understand the quality of water entering the recirculating systems.

Question 30 asks the respondent to provide additional details about the sizes and numbers of different types of recirculating systems at the facility. Question 30 also asks about the daily volume of water added to the recirculating systems. Question 31 seeks information about the average daily effluent volumes and partitions the volumes into overflows and drains, solids removal, and other. This information will help EPA to understand the quantities and relative quality of water discharged from recirculating systems.

Question 32 asks for a description of draining practices at the facility and for information on cleaning and disinfection products used in drained tanks. When recirculating systems are completely drained, the volume of water is often an order of magnitude more than typical daily discharge volumes.

Question 33 determines any management practices used in the recirculating system before water is discharged. This list is quite extensive to help EPA to determine the water treatment technologies that are used as a part of the recirculating system to maintain water quality in the system. Knowledge about the different water treatment technologies will provide EPA with information about discharge water quality. The responses will also inform EPA about the best management practices currently used in the recirculating system.

Question 34 asks about pollutant control technologies used at the facility after the water leaves the recirculating systems. EPA will use the responses from Question 34 to identify treatment already in use and to determine the treatment basis for regulatory options as well as to develop cost estimates for these options. Question 35 asks about the fate of solids from the solids separation practices. The information from Question 35 will inform EPA about the solids disposal practices used in the industry.

Question 36 asks the respondent to identify how water leaves the facility property. If water is not discharged off the facility property, the onsite fate is queried. Question 37 asks for an NPDES permit number if the facility has one, and Question 38 asks for the location of the discharge. These questions will help EPA with the environmental assessment and impact studies.

After completing Question 38, the respondent is directed to complete additional sections of the survey. For those facilities that have systems other than recirculating systems, the respondent is directed to the appropriate system-specific sections. For those who discharge offsite, the respondent is directed to the additional cost and economic sections of the survey. For those with only recirculating systems and onsite discharges, the respondent is directed to the certification section.

Net Pens and Cages. The net pens and cages subsection begins with a brief introduction that outlines the questions on net pens and cages and explains the definition of discharge as it is used in the survey. The respondent is asked to provide a detailed sketch of the net pens and cages layout to help EPA understand the extent and configuration of the aquatic animal production facility. An example is provided for the respondent.

Question 39 asks the respondent to describe the net pens and cages, including size and number. This information will be used by EPA to determine the scope of the operation. Question 40 asks for the exact location of the net pens or cages. EPA will use this information in evaluating potential water and non-water quality impacts from the systems as a part of the environmental impact and analysis phases of the effluent limitations development process.

Question 41 asks for an NPDES permit number if the facility has one.

Question 42 asks for any management practices that the facility uses to reduce the impacts of the net pens or cages on the surrounding water quality. EPA will use this information to determine any best management practices that are currently used in the industry for net pens and cages.

After completing Question 42, the respondent is directed to complete additional sections of the survey. For those facilities that have systems other than net pens and cages, the respondent is directed to the appropriate system-specific sections. The respondent is directed to the additional cost and economic sections of the survey, if net pens or cages are the only production systems at this facility.

Floating Aquaculture and Bottom Culture. The floating aquaculture and bottom culture subsection begins with a brief introduction that outlines the questions on floating aquaculture and bottom culture and explains the definition of discharge as it is used in the survey. The respondent is asked to provide a detailed sketch of the floating aquaculture or bottom culture layout to help EPA understand the extent and configuration of the aquatic animal production facility. An example is provided for the respondent.

Question 43 asks the respondent to describe the floating aquaculture or bottom culture, including size and number. This information will be used by EPA to determine the scope of the operation. Question 44 asks for the exact location of the floating aquaculture or bottom culture. EPA will use this information in evaluating potential water and non-water quality impacts from the systems as a part of the environmental impact and analysis phases of the effluent limitations development process.

Question 45 asks for an NPDES permit number if the facility has one.

Question 46 asks for any management practices that the facility uses to reduce the impacts of the floating aquaculture or bottom culture on the surrounding water quality. EPA will use this information to determine any best management practices that are used in the industry for floating aquaculture or bottom culture.

After completing Question 46, the respondent is directed to complete additional sections of the survey. For those facilities that have systems other than floating aquaculture or bottom culture, the respondent is directed to the appropriate system-specific sections. The respondent is directed to the additional cost and economic sections of the survey, if floating aquaculture or bottom culture are the only production systems at this facility.

Other Aquaculture Systems. The other aquaculture system subsection begins with a brief introduction that outlines the questions on other aquaculture systems and explains the definition of discharge as it is used in the survey. The respondent is asked to provide a detailed sketch of the aquaculture system and facility layout to help EPA understand the extent and configuration of the animal production facility. An example is provided for the respondent.

Question 47 asks about the origin of the source water and whether it is fresh or salt water. The information on the source water is necessary to help EPA understand the quality of water entering the aquaculture systems.

Question 48 asks the respondent to provide additional details about the sizes and numbers of different types of aquaculture systems at the facility. Question 48 also asks about the daily volume of water added to the aquaculture systems. Question 49 seeks information about the average daily effluent volumes and partitions the volumes into overflows and drains, solids removal, and other. This information will help EPA to understand the quantities and relative quality of water discharged from other aquaculture systems.

Question 50 asks for a description of draining practices at the facility and for information on cleaning and disinfection products used in drained tanks. When aquaculture systems are completely drained, the volume of water is often greater than typical daily discharge volumes.

Question 51 determines any management practices used in the aquaculture system before water is discharged. The responses will also inform EPA about the best management practices used in the aquaculture system.

Question 52 asks about pollutant control technologies used at the facility after the water leaves the aquaculture systems. EPA will use the responses from Question 52 to identify treatment already in use and to determine the treatment basis for regulatory options as well as to develop cost estimates for these options. Question 53 asks about the fate of solids from the solids separation practices. The information from Question 53 will inform EPA about the solids disposal practices used in the industry.

Question 54 asks the respondent to identify how water leaves the facility property. If water is not discharged off the facility property, the onsite fate is queried. Question 55 asks for an NPDES permit number if the facility has one, and Question 56 asks for the location of the discharge. These questions will help EPA with the environmental assessment and impact studies.

After completing Question 56, the respondent is directed to the additional cost and economic sections of the survey, for those who discharge offsite. For those with only other aquaculture systems and onsite discharges, the respondent is directed to the certification section.

Cost Information. Question 57 requests the respondent to identify all pollution control practices, the year in which it was installed, the original capital cost and the annual operating and maintenance (O&M) costs for the pollution control practices only. EPA will use this information to develop cost estimates for regulatory options.

While Question 57 requests information on capital and O&M costs for pollution control practices only, Question 58 asks for detailed information on the annual operating and maintenance costs for the facility that were not related to treatment. EPA needs to understand existing costs for existing practices to evaluate the economic impacts of additional pollution control costs.

Monitoring Information. Question 59 requests identification of pollutants measured and the frequency of monitoring during the three most recent years starting with 2000. EPA needs this information to characterize and study each facility's discharge permit status, the pollutants typically

regulated prior to the effluent guideline development, and frequency monitored. EPA will also use this information to estimate incremental monitoring costs due to the compliance of the rule.

Product Losses. Question 60 asks operators to estimate the total loss (including losses from predation, escapes, mortalities, disease or other) of fish or other animal aquaculture in fiscal year 2000. Question 61 asks operators to identify the number of escapees, if any.

Feed Information. Question 62 asks for the amount of feed (annual and maximum month), feed type, and feed content used in fiscal year 2000. 40 CFR 122.24 Appendix C defines a concentrated aquatic animal production facility for cold water species in terms of either harvest weight per year (less than 9,090 kg) or maximum feed month (less than 2,272 kg). EPA will use the feed information to identify facilities that are covered under the existing requirements. EPA also will study this information to evaluate possible best management practices in aquatic animal production operations.

(ii) Economic and Financial Information

EPA developed three versions of Part B: Economic and Financial Information to address different questions to private/commercial, government, and academic/research facilities. The new design minimizes burden on the respondents by restricting the questions to those applicable to each respondent. All three sections begin with a Question 63 because the last question in the technical section (which is applicable to all respondents) is Question 62.

(A) Private/Commercial

EPA introduces the economic and financial portion of the questionnaire by providing an explanation of why the data being requested are needed. EPA believes that—when the respondent understands the role of economic and financial analysis in establishing effluent limitations guidelines and standards—the respondent will also see that it is to his/her benefit that EPA be able to evaluate economic impacts using real-world data that reflects actual operating conditions.

Question 63 asks the respondent to identify whether he or she uses a cash or an accrual accounting system. EPA needs this information to understand which data items it anticipates the respondent should be able to provide and, more importantly, to know whether income earned reflects costs incurred in the production of what was sold.

Question 64 requests income information for fiscal years 2000, 1999, and 1998 for all activities at the facility. EPA limited the number of individual items requested and cross-referenced each line item with Internal Revenue Service (IRS) Schedule F and Schedule C tax forms as part of EPA's efforts to minimize burden. As a second method of minimizing burden, the respondent is given the option of voluntarily providing copies of his/her tax filings for farm income (e.g., Schedule F or Schedule C) or prepared income statements for 2000, 1999, and 1998 in lieu of completing the question. EPA is not requesting off-farm income, hence, there are no references to IRS Form 1040.

EPA asks for total sales and gross income for all activities at the farm. Total sales and gross income differs by such components as cooperative distributions, agricultural payment programs, commodity credit corporation (CCC) loans, custom hire [machine work] income, and Federal and state gasoline or fuel tax credit or refunds. These other forms of farm income could potentially play an important role in farm finances, and EPA needs to understand this aspect when modeling economic impacts. EPA asks for cost of products sold (aquatic animals, livestock, produce, grains, and other products) for those farms that keep financial records on an accrual basis.

EPA asks for total expenses and individual expense items, including chemicals; depreciation; feed purchased; fertilizers and lime; gasoline, fuel and oil; insurance (other than health); mortgage interest; other interest; rent or lease on vehicles, machinery, and equipment or land, animals, and other; repairs and maintenance; taxes; and utilities. Each item is cross-referenced to IRS Schedule F and Schedule C to minimize burden. EPA might consider options that affect individual cost components listed and the data provide information on baseline (pre-regulatory) expenses. For example, EPA might place limitations on chemicals, fertilizers and lime, and feed used in order to control contaminants that might enter the water. Mortgage interest and other existing interest payments interact with farm earnings to affect the amount of additional debt capacity the farm has available for response to EPA effluent limitations guidelines. Rent from available land might be lost if the land is needed to construct effluent treatment. Taxes affect net earnings. Depreciation is needed to evaluate projected earnings on a cash and/or net income basis. If an option includes aeration, for example, EPA might wish to compare how it raises the farm's utility costs. Question 64 provides the data for the farm-level analysis (and the company-level analysis for single facility firms).

EPA is requesting three years of cost and income data for several reasons. First, and most important, many farms keep financial records on a cash basis. That is, revenue is recorded when received (not when earned) and expenses are recorded when paid (not when incurred). Some species have grow-out periods in excess of a year, hence revenue from that harvest is not necessarily offset by all the costs incurred by the product because they were incurred in an earlier year. Three consecutive years of data will provide a much more accurate picture of the financial condition of the facility. Second, three years of data provides EPA with an estimate of the year-to-year variation in income and costs. The farm-level analysis will not hinge on a single, possibly atypical, year. Third, EPA can identify possible outliers or trends in the data. A farm might be projected to fail prior to any incurrence of regulatory costs if all three years show declining to negative income.

EPA needs total farm income because: (1) EPA wishes to examine situations where a successful aquatic animal production enterprise offsets losses from other facility enterprises. In such a situation, reduced profitability in the aquatic animal production might lead to facility failure even though the enterprise is still profitable; (2) lending decisions are frequently made on the ability of the farm to incur additional debt, not just whether the enterprise appears feasible; (3) EPA wishes to evaluate potential impacts such as the loss of co-located agricultural activities; and (4) the Small Business Administration sets size standards at the company level (at the farm level, generally, in this industry), not an enterprise level. The facility-level analysis includes a closure analysis based on information collected in Question 64, an evaluation of the ability to incur additional debt, and a farm vulnerability analysis modeled on USDA methodology which examines a combination of net income and debt-to-assets ratio for the farm.

If EPA does not collect this information, it loses the matched pairs of costs and revenues to identify marginal facilities, the range in profitability of farm operations under real world conditions, and the range in impacts caused by additional water pollution control costs.

Questions 65 and 66 request more detailed information on total sales data. Question 65 asks the respondent if any of the sales result from fee fishing operations and, if so, to identify the amounts. Fee-fishing impacts might include loss in recreation as well as loss in income to the facility. Question 66 asks the respondent if he or she raised agricultural products other than aquatic animals and, if so, to identify the income from various operations. Information gathered from this question helps EPA understand the relative role played by aquatic animal production in facility operations. EPA is interested in income from co-located crops because an impact on aquatic animal production operations might also result in lost income from co-located activities. In both questions, the respondent skips to the next question if the answer is "no." The respondent is also allowed to make a best estimate to complete these questions and to check a box so that EPA knows the responses are best estimates.

Question 67 follows the same format as Question 64, however, the response is restricted to aquatic animal production operations only. A goal of the analysis is to identify enterprises that might close due to additional pollution control requirements. The data provide EPA with matched pairs of real costs and revenues for real individual enterprises, thus providing the most accurate way to construct the estimates necessary for the closure model. The forecasted income for the enterprise is a major determinant of the net present value of continued operations. The income projections are calculated using the information collected in the survey, including the tax status of the facility. Direct losses in output, and employment are calculated directly from the closure analysis results and survey responses. The data enable EPA to identify marginal aquatic animal production operations, the range in profitability of aquatic animal production operations under real world conditions, and the range in impacts caused by additional water pollution control costs. In sum, these data form the basis for the enterprise-level economic analysis.

EPA received several comments that the economic analysis should be restricted to aquaculture enterprise data. EPA concurs that it is important to evaluate the impact of incremental pollution control costs on existing aquatic enterprises. However, aquatic animal production operations may be the only enterprise at the facility or one of many agricultural enterprises at the facility. In the first situation, the enterprise and facility analyses are the same and the respondent does not have to complete Question 67. In the second case, aquatic animal production might be profitable or unprofitable when examined in isolation, and might also support or be supported by other enterprises at the facility. That is, the comparison of the enterprise-level analysis (Question 67 data) and the facility-level analysis (Question 64 data) will clarify the relative profitability of the aquatic animal production operations to the overall profitability of the farm/facility. The respondent may use best estimates to complete the question as well as prepared financial statements. The reasons for collecting three years of data are the same as those given for Question 64.

Question 68 requests the value of aquatic animal products from the facility by product category and in total for fiscal years 2000, 1999, and 1998. In effect, Question 68 requests the respondent to provide a detailed breakdown of the aquatic animal production revenues identified in Question 67. This

information is necessary to determine the impact of regulation on certain product categories (e.g., a facility may suspend some product categories that involve more effluent or that will be subject to stricter limitations. In other words, EPA uses the value of aquatic animal production when estimating the direct impacts of regulatory options. Where products correspond to subcategories, EPA is required to evaluate economic achievability by subcategory.

Question 68 also requests the total quantities of aquatic animal products sold by category and in total for fiscal years 2000, 1999, and 1998. EPA uses the quantity of aquatic animal production when estimating the direct impacts of regulatory options. If EPA establishes regulatory cutoffs based on production levels, EPA could use the information to evaluate who is within the scope of the proposed regulation. EPA also might use the information to evaluate the feasibility and appropriateness of production-based effluent limitations.

Question 69 begins by asking whether the farm/facility prepares corporate balance sheets. If so, the respondent completes five entries from the 2000 balance statement. The question is designed to be applicable to both cash and accrual accounting methods. Entries are included for inventories (if accrual based), current assets excluding inventories, and long-term assets such as real estate, buildings, and equipment. On the liabilities side, entries are included for current liabilities and long-term debt. Each item has an accompanying description plus examples. The respondent is asked to identify whether the balance sheet was constructed on a market value basis, cost basis, or unknown basis.

If the respondent does not have prepared corporate balance sheets, he or she skips to **Question 70**. This question is a list of items designed to help the respondent construct basic balance sheet information. The form is designed for both accrual and cash methods of accounting. EPA states that it does not intend for the respondent to hire a professional to complete this question, but that the Agency believes that it can perform a better economic analysis with best estimates rather than no financial information. The respondent is reminded that the toll-free Help Line is available for assistance.

EPA examined many financial analyses for farm operations, including financial ratio analysis. Most financial ratio analyses require balance sheet information in their calculation. EPA will use the balance sheet data to calculate a series of financial ratios that indicate financial health and viability (e.g., current ratio, working capital-to-debt, and debt-to-assets). Based on a methodology typically used by the U.S. Department of Agriculture, EPA intends to use a combination of debt-to-assets and net income to classify a farm as favorable, marginally solvent, marginally profitable, or vulnerable.

Question 71 asks the respondent to identify the percentage of sales and production (pounds) at the company level that are attributable to finfish, hatchery, shellfish, and other aquatic animal production operations. The data will identify the appropriate NAICS code(s) for the company.

(B) Government

EPA establishes effluent limitations guidelines by industry, including public facilities such as Federal and State hatcheries. **Question 63** asks for the total operating budget for 2000, 1999, and 1998. **Question 64** asks the respondent to identify funding source(s) for the operating budget. EPA may

evaluate the annualized cost of incremental wastewater treatment as a percent of the operating budget or the increases in user fees needed to cover the additional costs.

Question 65 requests information in how the government facility allocates its funding. For example, increased pollution control costs might be a small fraction of the overall facility budget, but it might be a substantial portion of aquatic animal production activities (items a and b). The ability to make these two comparisons is analogous to the enterprise-level and facility-level analyses performed for the private/commercial facilities.

Question 66 asks the respondent to identify fish and egg recipients. EPA needs this information to assess impacts on the populations served by the government facilities, particularly Indian tribes.

Question 67 requests the value and quantity of aquatic animal products sold from the facility by product category and in total for fiscal years 2000, 1999, and 1998. Sales may or may not be a substantial portion of funding for state and local hatcheries. This information is necessary to determine the impact of regulation on certain product categories (e.g., a facility may suspend some product categories which involve more effluent in their production due to impending regulation). In other words, EPA uses the value and quantity of aquatic animal production when estimating the direct impacts of regulatory options. Where products correspond to subcategories, EPA is required to evaluate economic achievability by subcategory.

Most government hatcheries, however, do not focus on commercial transactions but on raising aquatic animals for recreational and restoration purposes. **Question 68** requests the quantity and estimated market value of aquatic animal products distributed or transferred from the facility by product category and in total for fiscal years 2000, 1999, and 1998. This information is necessary to determine the impact of regulation on certain product categories.

The quantities reported in Questions 67 and 68 combine to report the entire production for the facility. If EPA establishes regulatory cutoffs based on production levels, EPA could use the information to evaluate who is within the scope of the proposed regulation. EPA also might use the information to evaluate the feasibility and appropriateness of production-based effluent limitations.

(C) Academic/Research

EPA establishes effluent limitations guidelines by industry, including academic and research facilities. **Question 63** asks for the total operating budget for 2000, 1999, and 1998 as well as whether the budget is at the facility-level or department-level. **Question 64** asks the respondent to identify funding source(s) for the operating budget and whether it is base funding or grant funding. Grant funding is restricted to the project and cannot be applied toward other purposes, such as incremental pollution control. EPA may evaluate the annualized cost of incremental wastewater treatment as a percent of the base funding.

Question 65 requests information on how the facility allocates its funding. For example, increased pollution control costs might be a small fraction of the overall budget, but it might be a

substantial portion of aquatic animal production activities (items a and b). The ability to make these two comparisons is analogous to the enterprise-level and facility-level analyses performed for the private/commercial facilities.

Question 66 requests the value and quantity of aquatic animal products sold from the facility by product category and in total for fiscal years 2000, 1999, and 1998. Sales may or may not be a substantial portion of funding for academic and research facilities. This information is necessary to determine the impact of regulation on certain product categories (e.g., a facility may suspend some product categories which involve more effluent in their production due to impending regulation). In other words, EPA uses the value and quantity of aquatic animal production when estimating the direct impacts of regulatory options. Where products correspond to subcategories, EPA is required to evaluate economic achievability by subcategory.

Academic and research facilities may raise aquatic animals for distribution purposes. **Question 67** requests the quantity and estimated market value of aquatic animal products distributed or transferred from the facility by product category and in total for fiscal years 2000, 1999, and 1998. This information is necessary to determine the impact of regulation on certain product categories.

The quantities reported in Questions 66 and 67 combine to report the entire production for the facility. If EPA establishes regulatory cutoffs based on production levels, EPA could use the information to evaluate who is within the scope of the proposed regulation. EPA also might use the information to evaluate the feasibility and appropriateness of production-based effluent limitations.

4(c) COLLECTION OF 2000 AQUATIC ANIMAL PRODUCTION INDUSTRY DATA ACTIVITIES

Respondents will engage in the following activities to respond to the Collection of 2000 Aquatic Animal Production Industry Surveys (includes screener, detailed, and follow-up):

- review survey instructions
- gather requested information and data
- complete survey instrument
- review survey response
- mail completed survey response

None of the activities associated with the Collection of 2000 Aquatic Animal Production Industry Data is considered to be a customary and usual business practice.

5. THE INFORMATION COLLECTED—AGENCY ACTIVITIES, COLLECTION METHODOLOGY, AND INFORMATION MANAGEMENT

5(a) AGENCY ACTIVITIES

The 2000 Aquatic Animal Production Industry Data collection instruments have been developed by EPA's Engineering and Analysis Division (EAD). EAD has planned for and allocated resources for the efficient and effective management of the information to be collected. EPA is conducting the following activities in administering the survey instruments:

- Design the survey instruments;
- Create a mailing list database;
- Provide copies of the survey instruments to JSA AETF members for review;
- Discuss the data collection and the burden associated with its administration with the JSA AETF members;
- Publish a notice in the *Federal Register* to announce the upcoming ICR;
- Consider and respond to all comments received, and revise the data collection based on these comments;
- Develop the ICR package, and submit the package to OMB;
- Design a system to track mailing and receipt activities;
- Mail survey instruments;
- Develop and maintain Help Lines and Internet addresses for technical and economic assistance;
- Maintain the tracking system;
- Implement appropriate procedures for handling CBI responses;
- Develop guidelines for reviewing and coding the responses;
- Develop electronic databases, data entry systems, and documentation;
- Review and code survey responses for input to an electronic database;
- Collect missing information;
- Enter and verify data in the database;
- Conduct follow-up activities, as necessary.

The Agency will use the data collected through the 2000 Aquatic Animal Production Industry Data to characterize pollutant discharges from aquatic animal production sites, and to develop regulatory options to control these pollutant discharges. Specifically, EPA will establish current baseline estimates of industry-wide production-normalized wastewater flow rates, pollutant concentrations, and loadings in order to analyze the engineering costs of compliance, economic impacts and environmental benefits of each regulatory option. Ultimately, EPA will select appropriate regulatory options for the industry, and will develop effluent limitations guidelines and standards for the aquatic animal production industry to reflect the pollutant control practices chosen by EPA as the basis for the guidelines and standards.

5(b) COLLECTION METHODOLOGY AND INFORMATION MANAGEMENT

In response to comments on EPA's Aquatic Animal Production Industry Survey (65 FR 55522), EPA has divided the survey effort into two parts: a short screener questionnaire followed by a detailed questionnaire.

The screener questionnaire, containing nine questions, will be sent to all aquatic animal production facilities known to EPA (approximately 5,000). This survey will be used both to confirm that the facility is an aquatic animal producer and to identify specific facility characteristics. These characteristics include the type of facility (commercial, academic, or governmental), species in production, methods of production, and pollutant control practices in place. EPA will use results from the screener questionnaire to develop a sampling frame to select respondents to the detailed questionnaire.

Respondents to the detailed questionnaire will all have the same chance of being selected from within a particular group (stratified random sampling). Groups will be created based on facility type, species in production, and methods of production. Examples of groups include commercial facilities raising catfish in ponds and academic facilities raising tilapia in recirculating systems. Between 500 and 700 facilities are expected to receive the detailed questionnaire, though the exact number receiving the detailed questionnaire will depend on combining results from the screener census and EPA's design principles. These principles are discussed in the Part B, Section 2(c)(i). (The census of pollutant control practices in place will be used to develop appropriate regulatory baselines and options for any potential regulation of the aquatic animal production industry. EPA will use detailed questionnaire data for costing pollution control options and analyzing the economic impacts of those costs.)

Neither the screener nor the detailed questionnaire has been officially pretested. However, EPA has distributed multiple drafts of the detailed survey to JSA AETF for review and comment, and many of the AETF members are aquatic animal producers. All of the questions on the screener survey are directly from, or parallel to, the detailed survey. EPA is relying on past experience with similar surveys to estimate the burden on the industry. EPA has also received comments with respect to the burden estimates. Some commenters estimated it would take them 32 hours to complete the detailed survey; however, they did not provide any information explaining how they arrived at the number. EPA does estimate the average burden on respondents from the detailed survey to be 31 hours per survey (see Part A, Section 6 of this document).

The screener survey collects information necessary to develop the sampling frame for the detailed survey as well as to develop national estimates for the industry profile. EPA designed the survey mailing list database using information from the following sources:

- Dun & Bradstreet
- EPA Permit Compliance System (PCS) Database
- EPA State and Regional personnel

- State Aquaculture contacts
- Bureau of Indian Affairs

EPA will administer the surveys in hard copy format. Respondents may download additional copies of the surveys from EPA's web site or contact EPA if additional blank copies are necessary. However, the Agency requires that respondents submit their completed surveys in signed, certified, hard copy format.

EPA considered administering the data collection surveys in an interactive, electronic format. However, the development of electronic surveys is not considered efficient for the following reasons:

- The expense of developing and testing an electronic survey is not cost effective because this data collection is a one-time survey effort. Because the surveys will not be reused, neither the respondents nor the EPA will benefit from an electronic copy of the survey.
- Due to the amount of detailed information required for the effective review and revision of the aquatic animal production industry effluent limitations guidelines and standards, the detailed survey is complex. EPA has used several features, including skip patterns, to increase the efficiency with which the respondent can complete the survey form. EPA will incur an increased burden in programming these special features into an interactive, electronic format.
- EPA could not be sure the software at respondent facilities will be compatible or that electronic responses will be correctly formatted. If the survey were administered in interactive, electronic format, it may be necessary for EPA to make an increased effort to clarify responses.
- The Agency will incur an increased burden in maintaining a computer support Help Line, in addition to the potential (budget permitting) technical information and financial and economic information Help Lines.
- Through other effluent guidelines projects, EPA has established mechanisms, including double-key entry, verification, and resolution systems, for effective and efficient data entry from hard copy surveys. If the surveys were administered in electronic format, EPA will incur increased burden in designing a front-end electronic system.

EPA has determined that the option to administer the surveys in electronic format is precluded by the added cost and increased burden that will be incurred.

Although EPA has chosen not to administer the surveys in an interactive, electronic format, the Agency has used information technology throughout the development of the surveys, and will continue to use this technology to optimize the efficiency of both Agency and respondent activities associated with the survey. The *Federal Register* notice accompanying the ICR submission to OMB includes an Internet

address at which commenters and interested members of the public may download the Aquatic Animal Production Data ICR package. Finally, EPA will provide technical information and economic information Internet addresses through which survey respondents may obtain Help Line assistance on the detailed questionnaire.

Where possible, EPA will distribute the survey instruments via Federal Express or a comparable carrier that requires a signature to acknowledge receipt of delivery. Through this process, EPA will ensure that each designated site receives the survey, and that a preliminary point-of-contact (the signee) has been identified. From the date of receipt, aquatic animal production industry sites will have 45 calendar days to respond and return the completed detailed survey to the Agency. Recipients of the screener survey will have 15 days to respond and return the completed survey to the Agency.

Budget permitting, EPA will maintain a toll-free technical information Help Line and a toll-free financial and economic information Help Line for all survey respondents. These Help Lines will be staffed with trained contractor personnel during normal business hours. In addition, EPA will provide Internet electronic mailing addresses that respondents may use to obtain assistance. In every case, Help Line and Internet staff will work to provide respondents with immediate assistance.

Each mailed survey will have a unique facility identification number. EPA will use an electronic tracking system to record, for each identification number, the date the survey package was distributed, the date the site received the survey package (i.e., the date on which a respondent signed for the delivery of the survey package), the dates of any necessary follow-up letters or telephone calls to respondents, and the date EPA receives the completed survey. The identification number will also serve as a facility identification code for data entry in the survey database.

EPA and its contractors will review completed surveys and perform coding and data entry of survey responses. Follow-up phone calls will be made to survey respondents as necessary to ensure quality responses. The coded survey responses will be entered into a database designed to ensure the retrieval of all data necessary for thorough technical and economic analyses.

5(c) SMALL ENTITY FLEXIBILITY

EPA has taken many steps to ensure that the respondent burden is minimized for small entities, while collecting sufficient data to evaluate regulatory flexibility for small entities. EPA will identify the size of the business entity according to Small Business Administration definitions from survey information. The financial and economic information collected in the survey is necessary to perform the economic analysis of the proposed effluent limitations guidelines and standards for the aquatic animal production industry in order to meet the requirements of the Regulatory Flexibility Act as amended by the Small Business Regulatory Enforcement Fairness Act (SBREFA). Part A, Section 6(a) summarizes the various methods EPA used to minimize respondent burden.

5(d) SURVEY SCHEDULE

The schedule for the data collection activities associated with the aquatic animal production surveys is presented in Table 5-1:

Table 5-1
Screener and Detailed Survey Schedule

Action	Action Duration (Approximate Number of Calendar Days)
Screener surveys mailed	15
Receive all screener responses and conduct necessary follow-up	30 - After Mailing
Review and code all screener responses	30 - After Receipt
Design explicit sampling plan for detailed questionnaire after receiving the database of screener survey responses	5 - After Coding Complete
Detailed surveys mailed	15 - After Sampling Plan Developed
Receive all detailed responses	60 - After Mailing
Review and code all detailed survey responses	100 - After Receipt
Collect all missing or incomplete information	115 - After Coding
Enter all coded responses in database	130 - After Coding
Publish preliminary summary results from both the screener and the detailed questionnaire in a Notice of Data Availability	After Proposal in June, 2002
Publish final summary results from both the screener and the detailed questionnaire in support of the final rulemaking.	June, 2004

6. ESTIMATING THE BURDEN AND COST OF THE COLLECTION

6(a) ESTIMATING RESPONDENT BURDEN

Members of the Agency's aquatic animal production effluent guidelines project team share experience with the extensive data collection, maintenance, and analysis activities associated with the development of effluent guidelines and standards, and they worked closely with AETF members that have detailed knowledge of the aquatic animal production industry to eliminate redundant, unclear, and unnecessary questions from the Collection of 2000 Aquatic Animal Production Industry Data. EPA designed the survey instruments to be as user-friendly as possible by requesting data in the form and units in which respondents have already collected them.

The Agency's aquatic animal production effluent guidelines project team designed the detailed survey instrument to include many burden-reducing formatting features:

- Many questions are formatted in "check box" form or as easy-to-read tables. Examples are provided with several questions.
- Questions on related topics are grouped together in the survey.
- The respondent is directed to skip over blocks of questions not relevant to his/her operation.
- EPA cross-referenced IRS form line items with cost and income information requested in the survey.
- EPA allows the respondent to voluntarily provide copies of their IRS forms, income statements, and corporate balance sheets in lieu of completing some questions.
- Instructions and definitions are provided in the introductory material to the survey.

Finally, the Agency has set up toll-free Help Lines and Internet e-mail addresses where a respondent may request assistance. These telephone numbers and e-mail addresses will be prominently displayed on the cover of the survey and in the introductory material.

Tables 6-1 through 6-5 present the average hourly burden associated with all respondent activities necessary to complete the screener and detailed surveys. These correspond to the type of survey received (private/ commercial, government, or academic/research) and whether the respondent avails himself or herself of the option to voluntarily submitted copies of prepared forms in lieu of answering some questions. Although, in many cases, the survey might be completed by a single individual, the Agency considered the following labor categories: facility operator, accountant, clerical staff, manager, and legal staff. People in the first three categories will be assumed to spend their time reading instructions, gathering data, and completing the survey form. Managers and legal staff will be assumed to read the instructions and review the survey responses.

EPA estimates that it may be necessary to perform follow-up efforts for both financial and sampling information. The economic follow-up requests copies of company financial information for businesses with more than one aquatic animal production facility. For purposes of estimating burden, EPA assumes that the effort involves the accountant locating and copying financial statements for 2000, 1999, and 1998 (2 hours). EPA estimates that follow-up activities to collect sampling data will involve 2 hours for the facility operator and 1 hour for the manager.

Table 6-1
Average Respondent Burden Per Screener

Respondent Activity	Facility Operator	Accountant	Clerical Support	Manager	Legal Support	Total Burden Per Activity (Hours)
Read Instructions	0.25					0.25
Gather Information / Data	0.25					0.25
Complete Survey Form	0.25					0.25
Review Survey Responses	0			0.25		0.25
Total Burden (hrs)	0.75	0	0	0.25	0	1

Table 6-2
Average Respondent Burden Per Survey
Private/Commercial - No Forms Submitted to EPA

Respondent Activity	Facility Operator	Accountant	Clerical Support	Manager	Legal Support	Total Burden Per Activity (Hours)
Read Instructions	1	1	0	2	1	5
Gather Information / Data	4	4	3	0	0	11
Complete Survey Form	5	1	2	0	0	8
Review Survey Responses	0	0	0	4	3	7
Total Burden (hrs)	10	6	5	6	4	31

Table 6-3
Average Respondent Burden Per Survey
Private/Commercial - Forms Submitted to EPA

Respondent Activity	Facility Operator	Accountant	Clerical Support	Manager	Legal Support	Total Burden Per Activity (Hours)
Read Instructions	1	0	0	2	1	4
Gather Information / Data	4	0	4	0	0	8
Complete Survey Form	5	0	2	0	0	7
Review Survey Responses	2	0	0	4	1	7
Total Burden (hrs)	12	0	6	6	2	26

Table 6-4
Average Respondent Burden Per Survey
Government

Respondent Activity	Facility Operator	Accountant	Clerical Support	Manager	Legal Support	Total Burden Per Activity (Hours)
Read Instructions	1	0	0	2	1	4
Gather Information / Data	4	0	3	0	0	7
Complete Survey Form	1	0	6	0	0	7
Review Survey Responses	0	0	0	4	1	5
Total Burden (hrs)	6	0	9	6	2	23

Table 6-5
Average Respondent Burden Per Survey
Academic/Research

Respondent Activity	Facility Operator	Accountant	Clerical Support	Manager	Legal Support	Total Burden Per Activity (Hours)
Read Instructions	1	0	0	2	1	4
Gather Information / Data	4	0	3	0	0	7
Complete Survey Form	1	0	6	0	0	7
Review Survey Responses	0	0	0	4	1	5
Total Burden (hrs)	6	0	9	6	2	23

6(b) ESTIMATING RESPONDENT COSTS

The Agency obtained 2000 earnings data from the Bureau of Labor Statistics, Current Population Survey, Employment and Earnings tables and adjusted them to account for benefits (see Table 6-6).[1] Table 6-7 summarizes the total hours by labor category and the cost per hour for each category. The average respondent labor cost is estimated to range from $21 to $762, depending on the survey version, whether a respondent opts to provide copies of financial statements in lieu of completing some questions, or follow-up is needed.

Table 6-6
Average Hourly Wage Rate in Manufacturing Industries, United States
2000 Dollars

Position	Median Weekly Earnings	Weekly Earnings Plus Benefits	Median Hourly Earnings	Bureau of Labor Statistics Current Population Survey Occupation
Facility Operator	$547	$711	$17.78	Farm Operators and Managers
Accountant	$766	$996	$24.90	Accountants and Auditors
Clerical Support	$469	$610	$15.24	Typists
Manager	$965	$1,255	$31.36	Financial managers
Legal Support	$1,304	$1,695	$42.38	Lawyers

Notes: Wage rates are increased by 30% to account for benefits.

Source: U.S. Department of Labor, Bureau of Labor Statistics. Current Population Survey. Table 39. Median Weekly Earnings of Full-Time Wage and Salary Workers Detailed by Occupation and Sex. Table 19— Persons at work in agriculture and nonagricultural industries by hours of work—is the source for an assumed 40-hour week. <http://stats.bls.gov/pdf/cpsaat39.pdf> downloaded 12 April 2001.

[1]The Bureau of Labor Statistics' *National Compensation Survey: Occupational Wages in the United States, 1997*, Bulletin 2519, September 1999 excludes agriculture from the scope of the survey. The Compensation Survey report the **average** hourly earnings while the Current Population Survey reports **median** weekly earnings. The Agency used the same data source for all labor category estimates to avoid inconsistencies caused by a switch between mean and median estimates.

Table 6-7
Average Respondent Labor Cost Per Survey

Parameter	Facility Operator	Accountant	Clerical Support	Manager	Legal Support	Total Burden
Cost per labor category	$17.88	$24.90	$15.24	$31.36	$42.38	
Total labor burden						
Screener	0.75			0.25		1
Private/No forms	10	6	5	6	4	31
Private/Forms	12	0	6	6	2	26
Government	6	0	9	6	2	23
Academic/Research	6	0	9	6	2	23
Economic Follow-up	0	2	0	0	0	2
Sampling Follow-up	2	0	0	1	0	3
Labor Cost per Survey						
Screener	$13	$0	$0	$8	$0	$21
Private/No forms	$179	$149	$76	$188	$170	$762
Private/Forms	$215	$0	$91	$188	$85	$579
Government	$107	$0	$137	$188	$85	$517
Academic/Research	$107	$0	$137	$188	$85	$517
Economic Follow-up	$0	$50	$0	$0	$0	$50
Sampling Follow-up	$36	$0	$0	$31	$0	$67

Because respondents to the data collection surveys will be required to photocopy and mail the completed surveys, the Agency does expect the aquatic animal production industry to incur operating and maintenance costs to respond to the Collection of 2000 Aquatic Animal Production Industry Data. The Agency assumed a photocopying rate of $0.10 per page. The copying cost of the screener survey is estimated at $0.50 (assuming four pages in the screener survey and one page that EPA asks to photocopy in case additional space is needed). EPA estimated a mailing rate of $0.34 assuming the respondent will return the screener survey via regular mail. The total operation and maintenance costs to respond to the screener per facility will be $0.84. With a maximum of 70 pages in the detailed survey and an assumed 5 pages in financial statements and notes, the copying cost is conservatively estimated at $7.50 per respondent. To determine the survey mailing rate of $7.50 per survey, the Agency assumed that the facility respondents will return the completed survey via Federal Express economy or a comparable economy delivery carrier that requires a signature to acknowledge receipt. The total operation and

maintenance costs to respond to the detailed survey per facility will be $15.00. If economic follow-up is needed, the respondent is assumed to copy 30 pages (10 for each year of financial tables and notes) for a copying cost of $3 and a mailing rate of $7.50 for a total cost of $10.50 per follow-up. If follow-up sampling data are collected, the respondent is assumed to copy 20 pages for a copying cost of $2.00 and a mailing rate of $7.50 for a total cost of $9.50 per follow-up.

Because EPA will not require survey respondents to purchase any goods, including equipment or machinery, to respond to the Collection of 2000 Aquatic Animal Production Industry Data, the Agency does not expect capital costs to result from the administration of the data collection surveys.

6(c) ESTIMATING AGENCY BURDEN AND COST

Table 6-8 presents an estimate of the burden that EPA will incur to administer the Collection of 2000 Aquatic Animal Production Industry Data. The table identifies the collection administration tasks to be performed by Agency employees and contractors, and the associated hours required for each grouping of related tasks. EPA determined Agency labor costs by multiplying Agency burden figures by the hourly Agency labor rate of $53.08. EPA determined this rate by dividing the 2000 GS-13, Step 5 rate for the Washington-Baltimore Area of $69,008 by a person-year of 2,080 hours, and then multiplying the result by a benefits multiplication factor of 1.6. EPA determined contractor labor costs by multiplying contractor burden figures by an average contract labor rate of $70. This rate is consistent with current Agency contracts. Table 6-8 also includes estimates of the one-time operating and maintenance costs associated with printing, photocopying, and postage. EPA estimated these costs based on experience with similar collections. Total Agency costs (including contractor and O&M costs) are estimated at $463,280. Labor costs for responding to comments, revising survey, and analyzing survey responses contribute to the majority of total costs.

Table 6-8
Agency Burden and Cost for Screener and Detailed Surveys (including Contractor Cost)

Activities	Agency			Contractor		
	Burden (hours)	O&M (Dollars)	Total Cost	Burden (hours)	O&M (Dollars)	Total Cost
	$53.08/ hr			$70/hr		
Develop the survey instrument; Provide the draft survey instrument to industry trade associations for review; Meet with trade association representatives; Publish notice of anticipated ICR in *Federal Register*; Respond to all comments received; Revise survey instrument based on reviewers' comments.	300		$15,924	200		$14,000
Develop a mailing list database; Develop a system to track mailing and receipt activities; Mail survey instruments.	200		$10,616	400		$28,000
Develop and maintain Help Line and Internet address	150		$7,962	400		$28,000
Maintain response tracking system; Implement appropriate procedures for handling CBI responses; Review and code responses; Collect missing information.	600		$31,848	2,500		$175,000
Enter and verify data	300		$15,924	1,500		$105,000
Economic Followup	50		$2,654	100		$7,000
Sampling Followup	25		$1,327	120		$8,400
COLUMN TOTALS BURDEN AND COST	1,625	$3,625	$86,255	5,220	$8,000	$365,400
TOTAL BURDEN AND COST	$463,280					

6(d) BOTTOM LINE HOURS AND COST TABLE

Table 6-9 summarizes the total costs that the aquatic animal production industry and the Agency will incur as a result of the Collection of 2000 Aquatic Animal Production Industry Data. The upper bound estimate with 5000 screener surveys, 700 detailed surveys, 100 economic follow-up requests, and 25 follow-up sampling information requests is $586,268 for the respondent community and $463,280 for the Agency.

Table 6-9
Total Estimated Respondent and Agency Burden and Cost

Parameter	Respondent Cost							Agency Cost
	Screener	Private		Gov't	Academic/ Research	Follow-up		
		No Forms	Forms			Econ.	Sample	
Number of Respondents	5000	315	315	59	11	100	25	5,825
Cost per labor per survey	$21	$762	$579	$517	$517	$50	$67	$451,655
Copying and mailing costs per survey (O&M costs)	$1	$15.00	$15.00	$15.00	$15.00	$10.50	$9.50	$11,625
Total Cost	$109,200	$244,755	$187,110	$31,388	$5,852	$6,050	$1,913	$463,280

Note: Estimates of the number of respondents to the detailed questionnaire are for respondent burden estimates only. EPA has not yet determined the sampling frame for the detailed questionnaire.

6(e) REASONS FOR CHANGE IN BURDEN

Because the Collection of 2000 Aquatic Animal Production Industry Data Information Collection Request is not associated with the renewal or modification of any existing ICR, the burden estimate associated with this survey does not represent a change in any existing ICR burden estimate.

6(f) BURDEN STATEMENT

The following statement will be included in the questionnaire:

Form Approved
OMB Control No. -
Approval Expires / /

The public reporting and recordkeeping burden for this survey is estimated to average 31 hours. Burden means total time, effort, or financial resources expended by the 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 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 Office of Management and Budget (OMB) control number.

Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Office of Policy, U.S. Environmental Protection Agency, Regulatory Information Division, MC 2137, 401 M Street, S.W., Washington, DC 20460. Include OMB control number in any correspondence. Do not send the completed survey to this address.

PART B

1. SURVEY OBJECTIVES, KEY VARIABLES, AND OTHER PRELIMINARIES

1(a) SURVEY OBJECTIVES

The aquatic animal production survey will provide information essential to establishing a need for and developing regulations under Section 304(m) of the Clean Water Act. Survey data are essential for characterizing the nationwide and industry-specific status of aquatic animal production facility locations, the types of operations, wastewater characteristics, wastewater management technology, and for assessing the financial status of aquatic animal production facilities potentially affected by proposed regulations.

1(b) KEY VARIABLES

Please refer to Part A, Section 4(b), of this ICR for information on this topic .

1(c) STATISTICAL APPROACH

The objectives of the survey information collection can be achieved by a screener census and a detailed sample survey at considerably lower cost and burden (to EPA and respondents) than will be required for a detailed census. In response to comments, EPA has determined that a screener census is required to ensure that the detailed sample survey is sent to the types of facilities necessary to evaluate potential regulatory subcategories. A statistically designed sample survey is necessary to ensure that the resulting inferences and analyses are as statistically unbiased and as precise as is practicable. The cost and time burden on both industry and EPA is reduced by collecting detailed information through a sample survey, as opposed to sending the detailed questionnaire to all facilities in the aquatic animal production industry.

This survey has been designed and will be implemented with the assistance of four contractors. Tetra Tech, Inc, 10309 Eaton Place, Suite 340, Fairfax, VA 22030 will provide engineering support under EPA Contract No. 68-C-99-263, which is monitored by the Energy Branch, Engineering and Analysis Division of EPA's Office of Science and Technology. Eastern Research Group, Inc. (ERG), 110 Hartwell Avenue, Lexington, MA 02421-3136 will provide economic and financial support under EPA Contract No. 68-C6-0022, which is monitored by the Economics and Statistics Branch, Engineering and Analysis Division of EPA's Office of Science and Technology. Westat, at 1650 Research Blvd, Rockville, MD 20850 will provide statistical support under EPA Contract No.68-C-99-242, which is monitored by the Economics and Statistical Analysis Branch, Engineering and Analysis Division, Office of Science and Technology of EPA's Office of Water. Science Applications International Corporation (SAIC), at 11251 Roger Bacon, Reston, VA 22090 will also provide statistical support under EPA Contract No. 68-C-99-233, which is monitored by the Economic And Statistical Analysis Branch, Engineering and Analysis Division, Office of Science and Technology of EPA's Office of Water.

1(d) FEASIBILITY

The survey will be conducted under the authority of Section 308 of the Clean Water Act (33 U.S.C. 1318). Surveys will be mailed to aquatic animal production facilities. Toll-free telephone help lines will be provided by contractors. Respondents are provided information regarding these help lines in the General Information and Instructions sections of the screener and detailed surveys.

The collection schedule (*see Section 5(d) in Part A of this ICR*) accounts for the events and response times leading up to final analysis of survey data. This project will involve the design of analyses, computer programs, and report formats in advance of data entry of survey responses. This approach will ensure that key results are reported promptly once data entry and data quality checks are finished. Completion of these tasks will require planning and coordination among the contractors for statistical, technical, and financial analyses.

2. SURVEY DESIGN

This information collection request covers two separate but related questionnaire instruments. The first is a screener questionnaire and the second is a detailed questionnaire. The procedures for collecting information associated with each instrument are detailed below.

2(a) TARGET POPULATION

To obtain valuable information on the aquatic animal production industry's wastewater management practices, EPA has targeted aquatic animal production facilities with pond, flow-through, recirculating system, net pens and cages, floating aquaculture and bottom culture, and other aquaculture operations. The species include those listed in Appendix A of the detailed survey. The target population also includes private/commercial, government, and academic/research institutions.

2(b) SAMPLING DESIGN

The sampling design will combine a screener census with a detailed survey that uses a stratified probability sample. Strata for the detailed survey will be developed using information from EPA's screener census.

(i) Sampling Frame

The sampling frame for EPA's screener census was developed by synthesizing facility information found in the Dunn and Bradstreet database, EPA's Permit Compliance System, contacts with EPA regional permit writers, EPA site visits, State aquaculture contacts, assistance from the Bureau of Indian Affairs on tribal facilities, universities, and recent issues of Aquaculture Magazine. Additionally, EPA requested but was denied access to the facility identification data associated with the U.S. Department of Agriculture's 1998 Census of Aquaculture. EPA believes that the sampling frame is current, reasonably complete, and considerable effort has been expended to reduce duplication.

While the summary statistics available from the Census of Aquaculture are not sufficient to provide regulatory analyses at the facility level, EPA's sampling frame can be compared to summary statistics from the Census of Aquaculture as a way to evaluate EPA's efforts to develop the sampling frame. In particular, the 1998 Census of Aquaculture contained response from just over 4,000 facilities while EPA's current sampling frame contains over 5,000 facilities expected to practice aquaculture.

Since approximately 90% of the facilities identified in EPA's sampling frame are not classified by species of aquatic animal in production, the available database is not considered to be sufficient for purposes of selecting recipients for the detailed questionnaire. The primary purpose of the screener census is to collect this information.

(ii) Sample Sizes and Their Allocation

Approximately 5,000 facilities will receive the screener census and approximately 500 to 700 facilities will receive the detailed questionnaire. Results of the screener census will be used to ensure that a high percentage of facilities receiving the detailed questionnaire are in the aquatic animal production industry and that they are conducting operations of interest to EPA.

(iii) Stratification Variables

Strata will be based on type of facility (commercial, academic, or governmental), the species produced, and the methods of production. Stratification increases precision (removing the variability due to differences explained by species or production methods) for estimates of costs, benefits and other quantities. The thirteen (13) categories of species produced will include: catfish, trout, salmon, striped bass, tilapia, other fin fish, bait fish, ornamentals, shrimp, crawfish, other crustaceans, molluscan shellfish, and other. Other fin fish include other food fish, sport/game fish, etc. Bait fish include fathead minnows, golden shiners, feeder goldfish, etc. Ornamentals include koi, ornamental goldfish, and tropical fish. Other crustaceans include lobster pounds, softshell crabs, etc. Other includes anything that does not fit in the above categories, such as alligators, turtles, frogs, etc. The six (6) categories of production methods will include: ponds, flow through, recirculating systems, net pens and cages, floating aquaculture and bottom culture, and other.

(iv) Sampling Methods

The screener questionnaire will be sent to a census of identified facilities (approximately 5,000) and the detailed survey will be sent to a probability sample of between 500 to 700 facilities, with stratification as described above. The entities selected to receive the detailed questionnaire (the sampling unit) will be facilities.

2(c) SAMPLE SIZE AND PRECISION

(i) Precision Targets

Screener Questionnaire

The sampling design for the screener survey is a census. In other words, all known aquatic animal production facilities will be required to respond to this survey. Counts of results from this survey will be used to describe the number of facilities: that produce specific species, with specific methods of production, and that use various wastewater treatment and management practices. Since a high degree of accuracy is required in answering these specific questions, the variability associated with sampling fewer than all known facilities is not acceptable. Species and production information will be used to target specific types of facilities in the detailed questionnaire. In response to comments, the census of wastewater treatment and management practices will be used to more accurately describe the potential regulatory options associated with any proposed or final regulation of this industry. While the screener survey will not provide enough detail to cost incremental wastewater management practices or to perform an economic analysis of the impacts of those costs, the screener provides a sampling frame for the detailed questionnaire as well as the ability to extrapolate from detailed questionnaire data to national estimates.

Detailed Questionnaire

Respondents to the detailed questionnaire will be selected at random from within groups (stratified random selection) that are identified using results of the screener census. Between 500 and 700 facilities are expected to receive the detailed questionnaire, though the exact number receiving the detailed questionnaire will depend on combining results from the screener census and design principles that will be presented in this section.

Groups (strata) will be created based on facility type, species produced, and methods of production. Stratification increases precision (removing the variability due to differences explained by facility type, species, or production methods) for estimates of costs, benefits and other quantities. The anticipated precision associated with estimates generated from the detailed questionnaire can not be calculated prior to receiving results from the screener questionnaire. However, EPA's design goals for the detailed questionnaire can be described as follows:

EPA's primary design goals are stated in terms of yes or no questions (binomial responses). Examples of EPA questions that can be characterized this way include:

- What fraction of facilities will be able to meet proposed limits without additional costs?
- What fraction of facilities will be able to meet proposed limits after incurring additional costs?
- What fraction of facilities will close due to costs associated with regulation?

For estimates across the entire industry, EPA intends to design the sampling plan for the detailed survey such that 95% of these estimated fractions will be well within plus or minus 0.05 under conditions leading to maximum variability. Maximum variability occurs when the true national fraction of facilities answering "yes" is equal to 0.5. For groups defined by combinations of facility type, species, and production methods, EPA intends to design such that 95% of these estimated fractions are within plus or minus 0.30. Given three (3) classes of facilities, thirteen (13) categories of species and six (6) categories of production methods, there could be as many as two hundred and thirty-four (234) of these groups. However, EPA does not expect a number of these survey design groups to have any associated facilities in the census.

An additional design goal is to not allow any small group of facilities to overly influence the national estimates. An individual facility's influence on national estimates is inversely related to the percentage of facilities sampled within a survey design group. Simplifying some, when one facility in ten is sampled, then the sampled facility will be used to represent ten facilities in national estimates. If another group in the same survey is sampled at a rate of one in ten thousand, any facility in this group will influence national estimates approximately a thousand times more than those in the first group. Since each survey design group is expected to be of a different size, it is not possible to give all of the sampled facilities exactly the same influence. However, one of EPA's design goals is to minimize the difference in influence.

(ii) Nonsampling Errors

Nonresponse is relatively low for surveys sent under the authority of Section 308 of the Clean Water Act. EPA will employ several measures to reduce nonresponses. The cover letter and instructions for the surveys will explain the legal authority, responsibility to respond, reasons for the survey, and penalty for nonresponse. Delivery or nondelivery of the surveys will be tracked using Federal Express, thus a signature of recipient will be required. A help line will be operated while the surveys are in the field so that technical, financial, and administrative questions regarding the survey can be addressed. Recipients not responding to the Screener and/or Detailed Survey by the deadline date may be telephoned to encourage response, to answer questions, and to determine the reasons for the nonresponse.

Inaccurate or incomplete responses can occur due to misunderstandings or the misinterpretation of questions and the unintentional skipping of questions by respondents. Errors can occur when responses are coded, edited and entered into the database. The design and implementation of the Detailed Surveys will employ a number of quality assurance techniques to reduce the frequency of such errors. These techniques include the following:

- Review of questions for ambiguity and clarity
- Use of an easily-followed sequence of questions and stopping points
- Provision of a limited number of carefully considered responses to each question
- Provision of clear definitions of units of measurement and of technical terms

- Provision of clear instructions with references to the definitions
- Provision of a "help line" with a toll-free number to assist respondents
- Review of questions by engineers, scientists, and economists who will telephone respondents to obtain missing information and resolve problems and inconsistencies
- Use of double-entry keypunch verification on all surveys
- Conduct of computerized comparison of selected responses to detect inconsistencies and illogical responses
- Conduct of computerized analyses to screen for out-of-range and inconsistent numerical values
- Conduct of computerized analyses to detect missing numerical data and missing units
- For the screener survey, use of a small number of questions

2(d) SURVEY QUESTIONNAIRE DESIGN

Please refer to Part A, Section 4(b) of this ICR for information on this topic.

3. PRETESTS AND PILOT TESTS

Please refer to Part A, Section 5(b) of this ICR for information on this topic.

4. COLLECTION METHODS AND FOLLOW-UP

4(a) COLLECTION METHODS

Please refer to Section 5(b), Part A of this ICR for information on this topic.

4(b) SURVEY RESPONSE AND FOLLOW-UP

Please refer to Section 5(b), Part A of this ICR for information on this topic

5. ANALYZING AND REPORTING SURVEY RESULTS

5(a) DATA PREPARATION

EPA will prepare the aquatic animal production survey data in a manner consistent with other survey efforts at the Agency (e.g., past effluent guidelines surveys). Upon receipt of the completed surveys, the data will be entered and reviewed for coding consistency, missing data, and obvious inconsistencies in reported data by engineering and economic staff. Any inconsistencies will be resolved through call backs and any changes made will be documented. Contractor resources will be used for this effort as well as for data entry. Once the data is entered into a database, numerous manual and electronic QA activities will be performed and the results will be provided to engineering and economic staff for further resolution and documentation.

5(b) ANALYSIS

Analyses of the surveys will have the objectives of (a) producing narrative and quantitative characterizations of the aquatic animal production industry, aquatic animal production operations, process wastewater and treatment technologies, (b) characterizing plant-specific and site-specific factors that distinguish potential for adverse environmental impact, (c) characterizing plant-specific and site specific factors that distinguish technology options and costs for reducing adverse environmental impact, (d) estimating costs of regulatory options and impacts, (e) estimating benefits of regulatory options.

5(c) REPORTING RESULTS

All responses containing or consisting of CBI will be so identified in the survey database. Regulations governing confidentiality of business information appear at 40 CFR Part 2 Subpart B, and these are adhered to strictly by EPA and its contractors. Safeguards and procedures for CBI are described in written plans maintained by EPA and its contractors.

Information not classified as CBI could potentially be shared with any interested parties, unless releasing such information in conjunction with publicly available summary statistics will divulge CBI from one or more facilities. Such information is subject to Freedom of Information Act (FOIA) requests. Results of EPA's analyses become publicly available most often in three ways: (1) within proposed and final rules published in the *Federal Register*, (2) within development and supporting documents otherwise published in support of rulemaking, and (3) within materials placed in the rulemaking docket. The first two classes of documents are being made available by EPA on the Internet with increasing frequency; and this mode of reporting is a possibility for the results of the surveys described in this ICR.