



Detailed Questionnaire for the Aquatic Animal Production Industry

May 2001

FORM APPROVED ❖ OMB CONTROL No. XXXX - XXXX ❖ EXPIRATION DATE: XX/XXXX

**U.S. Environmental Protection Agency (EPA)
Office of Wastewater Management
Washington, DC**

Notice of Estimated Burden

EPA estimates that completion of the entire *Detailed Questionnaire for the Aquatic Animal Production Industry* will require an average of **23 - 31** hours per facility depending on the type of respondent. This estimate includes time for reading the instructions and reviewing the information necessary to respond to the questionnaire form. Any comments regarding EPA's need for the information, the accuracy of the provided burden estimate, and suggested methods for reducing respondent burden (including the use of automated collection techniques) should be addressed to: **Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822), 1200 Pennsylvania Ave., NW, Washington, DC 20460**. Please include the OMB Control Number, listed in the left-hand margin on this page, with any correspondence. Do not send the completed survey to this address.

U. S. ENVIRONMENTAL PROTECTION AGENCY COLLECTION OF AQUATIC ANIMAL PRODUCTION INDUSTRY DATA

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INTRODUCTION

The U.S. Environmental Protection Agency (EPA) is conducting a survey of the aquatic animal production (animal aquaculture) industry as part of its effort to develop effluent limitations guidelines and standards for the industry. The technical data collected in this survey will be used to determine how water is used to produce aquatic animals, how much wastewater is generated and leaves aquatic animal production facilities, and the pollutant control practices used before water leaves a facility. The financial and economic data will be used to characterize the economic status of the industry and to estimate the possible economic impacts of wastewater regulations.

COMPLETION OF THE SURVEY

Each question should be completed by the person(s) most knowledgeable about the information requested. All facilities must have the corporate official or designee responsible for directing or supervising the completion of the survey sign one of the Certification Statements in Part C (page C-1 or C-2) to verify and validate the information provided.

EPA has prepared this survey to be applicable to a variety of facilities; therefore, not all of the questions will apply to each facility. Complete each applicable item in the survey. In the event that exact data are not available, provide best estimates and note the methods that were used to make the estimates on the Comments page. General instructions are provided on page v, and additional instructions are provided with each question. General, technical, and financial definitions are provided in the Definitions section, starting on page vi.

EPA AQUATIC ANIMAL PRODUCTION SURVEY HELP LINES

Questions about Technical Information

Tetra Tech, Inc. (888) 733-1449

E-mail Address aqua_parta@tetrattech-ffx.com

Questions about Financial and Economic Information

Eastern Research Group, Inc. (800) 566-7364

E-mail Address aqua_partb@erg.com

AUTHORITY

This survey is conducted under the authority of Section 308 of the Clean Water Act (Federal Water Pollution Control Act, 33 U.S.C. Section 1318). **All facilities that receive this survey must respond to it.** Return all portions of the survey to EPA **within 45 days** of receiving it. Late filing or failure to comply with these instructions may result in criminal fines, civil penalties, and other sanctions, as provided by law.

If you wish to request an extension for your facility or discuss an alternative delivery schedule for a company with multiple facilities, you must do so **in writing** within 20 days of receipt of this survey. Send written requests to:

Ms. Marta Jordan
U.S. Environmental Protection Agency (4303)
Ariel Rios Building
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Extension requests will be evaluated on a case-by-case basis. Submission of an extension request to EPA does **not** automatically alter the due date of your survey.

PROVISIONS REGARDING DATA CONFIDENTIALITY

Regulations governing the confidentiality of business information are contained in the Code of Federal Regulations (CFR) at Title 40 Part 2, Subpart B. You may assert a business confidentiality claim covering part or all of the information you submit, **other than effluent data**, as described in 40 CFR 2.203(b):

(b) *Method and time of asserting business confidentiality claim.* A business which is submitting information to EPA may assert a business confidentiality claim covering the information by placing on (or attaching to) the information, at the time it is submitted to EPA, a cover sheet, stamped or typed legend, or other suitable form of notice employing language such as “trade secret,” “proprietary,” or “company confidential.” Allegedly confidential portions of otherwise nonconfidential documents should be clearly identified by the business, and may be submitted separately to facilitate identification and handling by EPA. If the business desires confidential treatment only until a certain date or until the occurrence of a certain event, the notice should so state.

If no business confidentiality claim accompanies the information when it is received by EPA, EPA may make the information available to the public without further notice.

You may claim as confidential all information included in the response to a question by checking the Confidential Business Information (CBI) box next to the corresponding question number. Alternatively, all responses to questions in this survey accompanied by a CBI box may be claimed confidential now by checking the box at the end of this paragraph. If you do not check this box, any individual response where “CBI” is **not** checked will be considered nonconfidential. Note that you may be required to justify any claim of confidentiality at a later time. Note also that plant effluent data are not eligible for confidential treatment because of Section 308(b) of the Clean Water Act, and thus will be treated as nonconfidential even if you check the “All eligible data are CBI” box below.

All eligible data are CBI

Information covered by a claim of confidentiality will be disclosed by EPA only to the extent, and by means of the procedures, set forth in 40 CFR Part 2, Subpart B. In general, submitted information protected by a business confidentiality claim may be disclosed to other employees, officers, or authorized representatives of the United States concerned with implementing the Clean Water Act.

Information covered by a claim of confidentiality will be made available to EPA contractors and subcontractors under EPA contracts 68-C-99-263, 68-C-99-233, 68-C-99-242, and 68-C6-0022 to enable the contractors to perform the work required by their contracts with EPA. All EPA contracts provide that contractor employees may use the information only for the purpose of performing the work required by their contracts. Contractor employees may not disclose any CBI to anyone other than EPA without prior written approval from each affected business or from EPA's legal office. Any comments you may wish to make on this issue must be submitted in writing along with your completed survey.

GENERAL INSTRUCTIONS

Read all question-specific instructions and definitions. Carefully read the definitions provided, starting on page vi. The definitions are provided to assist you in completing the survey.

Mark responses for each question. Fill in the appropriate response(s) to each question. Please use **black ink** or **type** in the spaces provided. If the space allowed for the answer to any question is inadequate for your complete response, continue the response in the Comments area at the end of each part of the survey, cross-referencing the appropriate question number unless otherwise directed. If additional attachments are required to clarify a response, place the associated question number and your site ID number (shown on the cover page) in the top right corner of each page of the attachments.

Answer all questions unless instructed otherwise. The purpose of this survey is to gather all available information pertinent to aquatic animal production operations. Use only whole numbers, unless instructed otherwise. If a question is not applicable to your facility, write "NA." As noted throughout the survey, you are requested to provide best estimates when data are not readily available. If you provide an estimate, note the methods you used to make the estimate with the question or on the Comments page at the end of the survey. EPA does not intend for facilities to conduct detailed studies to obtain the data. If you have any technical questions, please call the Technical Information Help Line at (888) 733-1449 or e-mail your questions to aqua_parta@tetrattech-ffx.com. If you have any financial or economic questions, please call the Financial and Economics Information Help Line at (800) 566-7364 or e-mail your questions to aqua_partb@erg.com.

Photocopy selected pages. Some pages in this survey may need to be photocopied before you respond. Indicate how many copies of the page you are submitting by completing the entry "Copy ___ of ___" in the top right corner.

Pay close attention to the measurement units requested in each question. Report answers in the units specified.

Enter zero (0) where appropriate. Leave an entry blank only if instructed to do so; otherwise, if the answer is zero, enter a zero (0).

Indicate information that should be treated as confidential. Please follow the instructions given in the "Provisions Regarding Data Confidentiality" section on page iv. If information for a given question is considered Confidential Business Information, indicate this by checking the box next to each question as desired or by checking the "All eligible data are CBI" box on page iv. If the "All eligible data are CBI" box is not checked, any question response where the corresponding "CBI" box is not checked will be considered nonconfidential.

Sign and return one of the Certification Statements in Part C (page C-1 or C-2). Submit the Certification Statement with the completed survey.

Questions. If you have any technical questions, please call the Technical Information Help Line (operated by Tetra Tech, Inc., EPA's Technical Contractor) at (888) 733-1449 or e-mail your questions to aqua_parta@tetrattech-ffx.com. If you have any financial or economic questions, please call the Financial and Economics Information Help Line (operated by Eastern Research Group, Inc., EPA's Economics Contractor) at (800) 566-7364 or e-mail your questions to aqua_partb@erg.com. The help lines are staffed Monday through Friday from 9:00 a.m. until 5:00 p.m., Eastern Standard Time.

Retain a copy of the completed survey for your records. EPA will review the information submitted and might request your cooperation in answering follow-up clarification questions to complete the data collection effort. Please keep a copy of the completed survey, including attachments, in case you (i.e., the contact identified in Question 3) are contacted to clarify your responses. Also, please maintain a record of sources used to complete the survey.

DEFINITIONS

Accrual method of accounting. A method of financial accounting whereby events (generation of income or revenue, incurring expenses, etc.) that change the financial position of a business are recorded in the time period in which the events actually occur. Income or revenue is recorded when earned, and expenses are recorded when incurred. This method is in contrast to the cash method of accounting, in which revenue is recorded only when cash is received and expenses are recorded only when cash is paid.

Aeration lagoon (aeration pond). Ponds that use constant mixing of solids in the lagoon to enhance nitrification and biological removal of BOD.

Aquatic animal production. Animal aquaculture, including the production of finfish, mollusks, crustaceans, and other aquatic animals. For the purpose of this survey, aquaculture and aquatic animal production are considered to mean the same thing.

Balance sheet. Also referred to as a statement of financial position. A financial document that lists the total assets controlled by a company and the total claims against them (debt and equity) at a specific point in time (e.g., December 31, 2000).

Best estimates. EPA understands that some respondents may not have all of the data being requested at the level of detail being asked in the survey. EPA believes that if an aquaculture operator, in good faith, estimates information provided in response to the survey, any resulting rules would be more accurate and sensitive to the unique situations at individual farms. A best estimate is one that the respondent, to the best of his/her knowledge, believes to be reasonable and representative. It is made in good faith, without the intent to purposefully misrepresent data.

Cash method of accounting. A method of financial accounting in which sales or income is recorded only when cash is actually received and expenses are recorded only when cash is actually paid, regardless of the time when the agreement and/or obligation to sell, purchase, or otherwise pay occurred.

CBI. Confidential Business Information.

Clarifier. Type of sedimentation basin or tank used to settle solids.

Co-located crops. Crops that are raised in the same production system (ponds, tanks, raceways, etc.) as the aquatic animal product. The most common pair is rice and crawfish.

Company. For purposes of this survey, the term “company” includes sole proprietorships, partnerships, and corporations (a family owned farm may be any one of these three). A company is a legal entity that has rights to own property, hire employees, and loan/borrow money. Typically, company income and expenses are reported on IRS Schedule F, Schedule C, Form 1120, or Form 1120S. A company may own more than one farm/facility.

Composting. An aerobic process to stabilize sludge (manure) by reducing organic concentrations, reclaiming nutrients, and eliminating pathogens.

Cost method of balance sheet valuation—also referred to as historical costs, historical proceeds, or book value method. A method that generally uses the initial cost of an asset minus its accumulated depreciation for asset valuation and the original amount of cash or equivalent received (sometimes adjusted for amortization or other allocation) for a liability.

Discharge. For the purposes of this study, water that is no longer being used for production of an aquatic animal species.

Effluent. For the purpose of this survey, effluent is defined as production water from an aquatic animal production facility that is no longer being used for aquatic animal production and leaves the facility property. Effluent is the same as wastewater.

Effluent limitation. For the purpose of this survey, restrictions (either numerical or narrative in form) on the amount or type of pollutants that are allowed in an effluent from an aquatic animal production facility. The restrictions can be in the concentration, rate, or total mass of a pollutant that is permissible in water from an aquatic animal production production facility that leaves the facility property. BMPs are effluent limitations in a narrative form.

Effluent limitations guideline or standard. The regulation setting restrictions on the amount or type of pollutant allowed in an effluent from a facility. Regulations for effluent limitations are implemented through National Pollutant Discharge Elimination System (NPDES) permits.

Facility. Generally one contiguous physical location at which aquatic animal production operations occur. In some instances, it may include property located within separate fence lines but close to each other and under the same ownership. An individual farm is considered a facility.

Fee-fishing operation. For purposes of this survey, defined as a “fish-out” pond, “pound” lake, or “pay-by-the-pound” lake. These operations charge anglers for the right to fish or for any fish that are caught.

Financial statements. Balance sheet and income statement that were derived from accounting records according to “Financial Guidelines for Agricultural Producers,” recommendations of the Farm Financial Standards Council, or generally accepted accounting principles (GAAP).

Fingerling. For purposes of this survey, defined as a young fish 2 to 6 inches in length or 2 to 60 lbs per 1,000 fish.

Food-size fish. For purposes of this survey, defined as over 3/4 lb per fish.

Fry. For purposes of this survey, defined as very young post-hatched fish that are less than 2 inches in length or less than 2 lbs per 1,000 fish.

Hybrid striped bass. A cross of *Morone* species, including palmetto bass (striped bass female and white bass male) or sunshine bass (white bass female and striped bass male), is generally used for food-size fish production. Other hybrid crosses include the Maryland bass (white perch female and striped bass male), the Virginia bass (striped bass female and white perch male), and the paradise bass (striped bass female and yellow bass male).

Incineration. The process of drying and reducing sludge (manure) volume and weight by using thermal combustion.

Income statement. Also referred to as a profit/loss statement. This statement measures the results of operations by presenting the income and expenses of a business during a specific accounting period.

Irrigation treatment system. System in which wastewater is applied to crops, vegetative cover, or forest land by sprinkler or surface infiltration techniques. The soil and vegetation serve as a treatment for the wastewater.

Land application. The process of applying sludge (manure) to land if suitable land, such as agricultural land, is nearby.

Land disposal. Application of sludge (manure) at a landfill, a technique used for residual sludge (manure) disposal.

Market value method of balance sheet valuation— Also referred to as current market value or fair market value method. A method that generally uses an estimate of the amount of cash, or its equivalent, that could be obtained by selling an asset at a fair market price.

Mollusks. Invertebrate animals with soft body coverings and shells of 1 to 18 parts or sections. This category includes clams, mussels, and oysters. Examples of mollusks in the “other” mollusk category are abalone and snails.

Native species. An original or indigenous species to the region.

Non-native species. A species not indigenous to the region in which it is found.

Other aquatic animal production. The production of any aquatic animal species not listed separately (i.e. alligators, frogs, turtles, egg and seed stock, etc.).

Ozonation. Use of triatomic oxygen molecule (O₃) to disinfect water and remove solids.

Point source. For the purpose of this survey, a discrete, confined, discernible conveyance from which pollutants are discharged off the property of an aquatic animal production facility.

Pollutant (to water). Generally defined as dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, certain radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt, and industrial, municipal, and agricultural waste discharged into water. (See Clean Water Act Section 502(6); 40 CFR 122.2.) Other items considered as pollutants include feed, drugs, herbicides, pesticides, antimicrobials, cleaners, water softeners, water clarifiers, and chlorinators (any chemicals added to water). In aquatic animal production, pollutants could include feed, drugs, herbicides, pesticides, manure, nutrients, uneaten feed, sediment, and any other chemicals or substances added to the water prior to discharge.

POTW. Publicly owned treatment works. A treatment works, as defined by Section 212 of the Clean Water Act, that is owned by a state or municipality (as defined by Section 502(4) of the act). This definition includes any devices and systems used in the storage, treatment, recycling, and reclamation of municipal sewage or industrial wastes of a liquid nature. It also includes sewers, pipes, and other conveyances only if they convey wastewater to a POTW treatment plant. The term also means the municipality, as defined in Section 502(4) of the Clean Water Act, that has jurisdiction over the indirect discharges to and the discharges from such a treatment works.

Screens. Devices that physically trap particles and are used to remove solids from water and large inorganic solids from wastewater and effluent streams.

Sedimentation basins. Filtration device that uses gravity to remove solids from a liquid. Designed to slow effluent flows so that suspended solids settle out.

Seed. An arbitrary term used in aquatic animal production to generally specify young shellfish, typically oysters, clams, scallops, or mussels, used for stocking.

Sludge dewatering/dehydration. The physical process of removing moisture from sludge (manure) by using drying beds, screening, and sludge (manure) lagoons.

Sport/game fish. Facility-raised fish used primarily for sport or game fishing, such as largemouth bass, bluegill, crappie, and sunfish. Examples of fish in the “other” sport/game fish category are muskie, northern pike, and smallmouth bass.

Stockers. For the purposes of this survey, defined as fish over 6 inches in length or 60 to 750 lbs. Per 1,000 fish.

UV irradiation. Light in the wavelength ranges of about 150 angstroms to about 4,000 angstroms used to disinfect water.

Waste stabilization lagoons (aerobic and anaerobic stabilization ponds). Large, shallow earthen basins that use natural processes involving both algae and bacteria to treat wastewater.

Wastewater. The following examples describe wastewater for some of the production types used in the industry although wastewater is not limited to these systems.

Flow through systems. Water after it leaves your flow through system and property, including water that has been diverted to treatment areas such as off-line settling basins and retention ponds.

Ponds. Water after it leaves your property, intentionally or as a result of precipitation events, including water discharged as part of harvesting, pond maintenance practices, or cleaning practices.

Recirculating systems. Water after it leaves your recirculating system and property, including water that flows to a municipal sewer, septic system, storm drain, retention pond, or other waterbody as part of cleaning and normal system operations.

Wastewater reuse. The use of treated wastewater for a beneficial use, such as irrigation.

Wetland treatment system. Wetlands (land inundated with water) used for treatment of wastewater. Wetlands can use processes such as filtration, bacterial conversion, adsorption, or sedimentation to remove some of the pollutants found in wastewater.

Well water. Groundwater that is conveyed to the surface with pumps or naturally flowing (artesian).

PART A TECHNICAL INFORMATION

Section 1. INFORMATION CONTACT AND FACILITY INFORMATION

- CBI 1.** Do you produce (grow) aquatic animals (fish, shellfish, other aquatic animals) at this facility?
- Yes
Complete the survey and sign Certification 1 (Part C, page C-1) when finished with the survey.
 - No
Complete and sign Certification 2 (Part C, page C-2) and return the survey to the mailing address provided on page C-1.

- CBI 2.** Is the mailing address on the label on the envelope correct?

- Yes (Go to Question 3.)
- No, the mailing address is not correct (Please correct below.)

Name of site: _____

Mailing address or P.O. box: _____

City: _____ State: _____ ZIP code: _____

- CBI 3.** Provide the name, title, and telephone number of the person who can answer questions about information provided in this survey.

Contact name: _____

Contact title: _____

Telephone number: () _____

What are the most convenient day and time to call? _____ a.m./p.m. (local time)

(Circle best days) Mon. Tues. Wed. Thurs. Fri. Sat. Sun. Any Day

Section 2. OWNERSHIP INFORMATION

- CBI 4.** What are the name and address of the company, proprietor, or entity that owns this facility?

Name of company: _____

Mailing address or P.O. box: _____

City: _____ State: _____ ZIP code: _____

CBI 5. Which of the following corporation type best describes this company, proprietor, or entity? (Check only **one** box.)

- | | |
|---|---|
| <input type="checkbox"/> Corporation (C Corporation) | <input type="checkbox"/> Sole proprietor |
| <input type="checkbox"/> Subchapter S Corporation/Limited Liability Corporation | <input type="checkbox"/> Federal hatchery |
| <input type="checkbox"/> Limited partnership | <input type="checkbox"/> State hatchery |
| <input type="checkbox"/> General partnership | <input type="checkbox"/> Research facility (e.g., university) |
| | <input type="checkbox"/> Other (please describe) |

<input type="checkbox"/> CBI	COPY # ___ of ___			
<p>6. Aquatic animal production facilities operated by the company. List any additional aquatic animal production facilities in the United States that are operated by the company (<i>facility</i> is defined on page vii). Provide the name, city, state, and ZIP code of the facility and the primary species raised. Use the first line for the facility in this survey. If additional spaces are required, photocopy these pages before writing on them and label each copy in the space provided at the top right corner of the page. Appendix A lists species categories. Use only these categories to identify aquatic animal production activities at each facility. Call the Technical Information Help Line at (888) 733-1449 if you raise a species not listed in Appendix A. If you list additional facilities, answer the company revenue question at the bottom of the table.</p>				
Facility name	City	State	ZIP Code	Primary species
If you listed additional facilities, what was the total company revenue in 2000? (round to the nearest thousand) \$ ____, ____, 000				

Section 3. GENERAL FACILITY INFORMATION

CBI 7. Which of the following statements **best** describes this facility? (Check **one** box.)

- Aquatic animal production is the **only** agricultural activity
- Aquatic animal production is one of several agricultural activities, but aquatic animal production is the primary industry
- Aquatic animal production is one of several agricultural activities, and other agriculture—**not** aquatic animal production—is the primary industry

CBI 8. Which of the following statements **best** describes your aquatic animal production activity? (Check **one** box)

- I am an independent grower
- I am a grower that contracts with another company for quantity and price prior to sale
- I am part of a production cooperative

CBI 9. a. What is the total acreage (land and water) of this facility? _____ acres

b. How much of your land is in aquacultural or other agricultural use? _____ acres

Section 4. WASTEWATER CONTROL TECHNOLOGY

This section is designed to help EPA learn about the wastewater control technology practices at your facility. EPA understands that facilities do not necessarily need, or have, wastewater control technology practices in place at this time. This section will allow EPA to characterize the wastewater control technologies currently being used in the aquatic animal production (aquaculture) industry.

You need not complete all sections of this survey. Please answer the following question and complete the sections indicated by your response.

Which of the following aquaculture production systems are used at your facility? (Check the appropriate box for each system)

Yes

- Ponds. If Yes, complete Subsection A, which begins on page A-4
- Flow Through. If Yes, complete Subsection B, which begins on page A-11
- Recirculating Systems. If Yes, complete Subsection C, which begins on page A-19
- Net Pens and Cages. If Yes, complete Subsection D, which begins on page A-27
- Floating Aquaculture and Bottom Culture. If Yes, complete Subsection E, which begins on page A-32
- Other Aquaculture Systems*. If Yes, complete Subsection F, which begins on page A-37

*If your system does not fit into categories A through E (for example, alligator aquaculture), please use F, Other Aquaculture Systems. If you have any questions please call the Technical Hotline at 1-888-733-1449.

After you have completed the questions under all applicable production systems at your facility, please continue to fill out sections 5 through 8 (beginning on page A-44) of the survey unless otherwise directed.

A. Ponds

The following questions are designed to provide EPA with an understanding of your facility and how you manage the water in your ponds. EPA recognizes that some water treatment practices take place internally within the pond, while other facilities may treat wastewater outside of the pond. EPA is interested in learning about any treatments or management practices that you use to help improve the quality of water before it is discharged from your ponds. EPA is also interested in any treatments or management practices that you use after water is discharged from your ponds. For the purpose of this survey, a discharge is water that is no longer used for production of an aquatic species, for example, water that drains or overflows from your ponds. EPA recognizes that many treatment processes occur within ponds before water is discharged. In an attempt to acknowledge this diversity and to help organize the responses, EPA has divided the "Pond" portion of the questionnaire into five phases, each consisting of one to three questions.

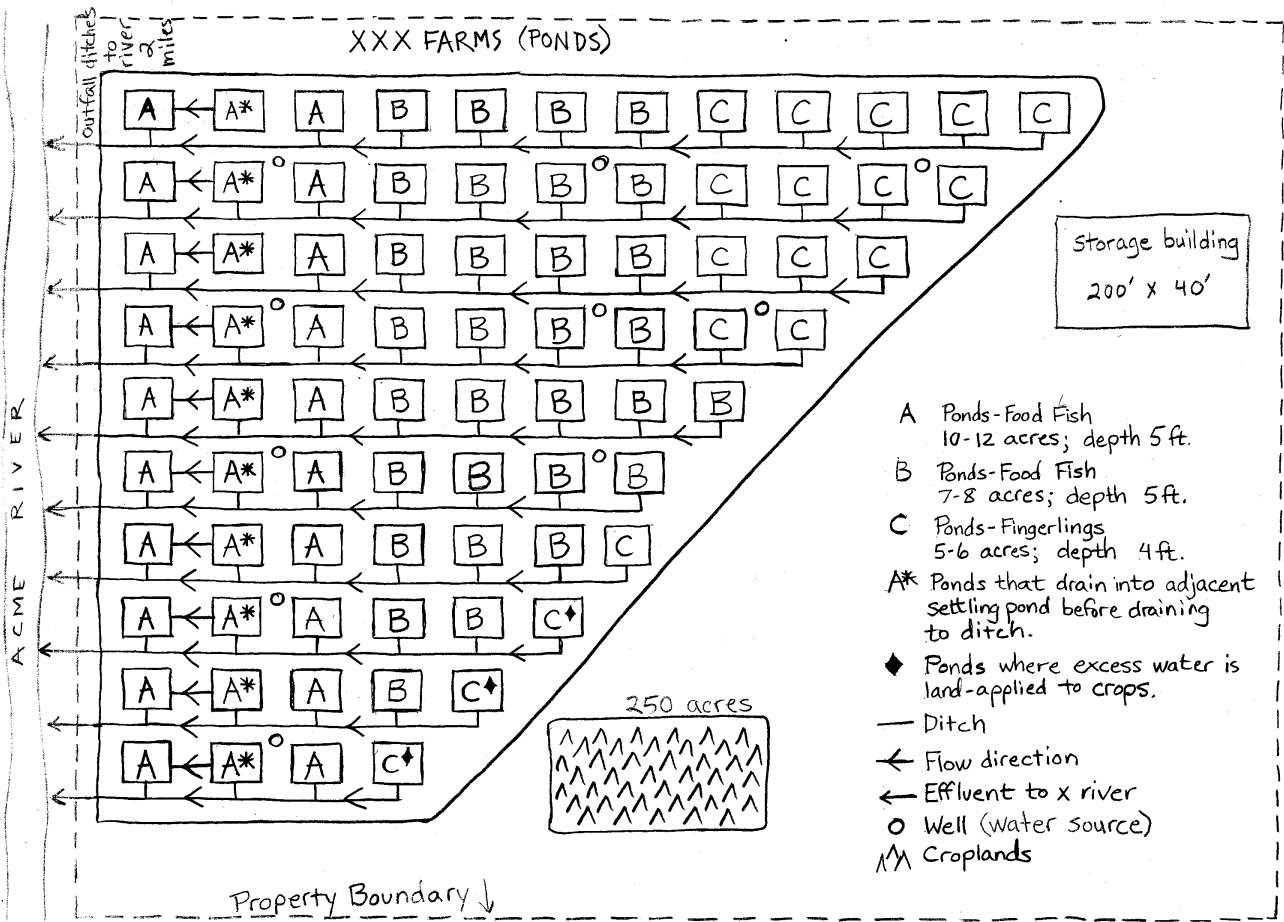
- Pond Description
- Pond Drainage
- Pond Overflow
- Pollutant Control Practices
- Wastewater Discharge

CBI Site Diagram

Please draw a sketch of the layout of all of your ponds and indicate clearly the locations of sources of water and discharges of water from the ponds. Attach the layout sketch to the back of your survey. On the following page, EPA has provided an example to help you provide the level of detail EPA is seeking to fully understand your system. Provide notes on your layout sketch to help explain any details, if needed. Please include and label any of the following that apply:

- ponds
- drain locations
- water source
- support buildings/structures
- any treatments outside ponds
- discharge locations from property
- property boundary

Example Site Diagram



Pond Description

- CBI 10.** Please describe your water source.
- a.** What is the water source for filling your ponds? (Please check all that apply.)
- overland runoff or streamflow into the pond
 - water is pumped from groundwater
 - water is pumped from a stream, river, lake, estuary, ocean, or other surface waterbody
 - water level is maintained due to high groundwater table
 - water is reused from water drained from pond
 - water is pumped or flows from a public supply (municipal or irrigation)
 - other, please describe _____
- b.** Is your water source freshwater or saltwater? (Please check all that apply.)
- freshwater
 - saltwater (which includes brackish, estuarine, ocean, and tidal sources)

- CBI 11.** Please list the number and types of ponds that are on your site in the following table.

Please use a separate row for each different type of pond. If the sizes or uses of your ponds are significantly different, use separate rows to describe these ponds. You may give approximate sizes, but please indicate whether your measurements are in feet, meters, acres, or another unit. Ponds of roughly the same size may be grouped and entered in one row; however, please enter the range of pond sizes associated with the group. Follow the example provided in the table.

Description of pond (please be as specific as possible)	Number of ponds	Average surface area of ponds (include a range if appropriate)	Average water depth of pond (include a range if appropriate)	Do you add supplemental aeration to your pond? (Yes/no)*
<i>catfish fingerling levee ponds</i> <i>EXAMPLE</i>	18	5.5 acres	4 feet	Yes
<i>catfish foodfish levee ponds</i> <i>EXAMPLE</i>	61	9.2 acres (31 x 7.5 acres and 30 x 11 acres)	5 feet	Yes

* Please include information on the size and type of aeration in the comments section below.

Comments on your answers to question 11

EXAMPLE: The 18 fingerling ponds use airstones and a 5-HP blower that delivers about 200 cfm for each pond. The foodfish production ponds use paddle wheel aerators at 2 HP per acre.

Pond Drainage

- CBI 12.** Please list how often, how much, and when you drain your ponds in the following table. Please use a separate row for each different type of pond that you listed in question 11. The first column should be filled in exactly as the first column in question 11 (see example).

Description of pond	On average, how often do you drain each pond? (please include units)	About how many feet of water is usually drained?	What is the most common time of year for you to drain ponds? (indicate a season or time of the year)
<i>catfish fingerling levee ponds EXAMPLE</i>	<i>1/year</i>	<i>4 feet</i>	<i>spring</i>
<i>catfish foodfish levee ponds EXAMPLE</i>	<i>1/5 years</i>	<i>3 feet</i>	<i>early fall</i>

Comments on your answers to question 12 _____

Pond Overflow

CBI 13. Do you intentionally pump or flow water into these ponds as a way to manage water quality? (This is sometimes called “flushing” or “water exchange.”)

- Yes (Please answer parts a through c.)
- No (Please go to question 14)

a. If yes, please describe how often you exchange water. Be as specific as possible, using the following examples as a guide:

- “I exchange water continuously on all ponds”*
- or *“I exchange water in every pond once a week during the summer”*
- or *“I exchange water in all brood stock ponds only when needed, on average once during the summer”*

b. When you exchange water, on average how long do you run water into an individual pond? (Be sure to include a unit of time in hours or days.)

c. When you exchange water, what is the average flow rate of water added per pond? (Be sure to include a unit in terms of gallons per hour or gallons per day.)

Pollutant Control Practices

- CBI 14.** Certain pond management practices can be used to reduce the pond effluent volume or improve effluent quality **before** the water leaves the pond. Check any of the following practices that you use in your ponds:
- Pond water levels are maintained below the level of the drain or overflow device so that rainfall is captured rather than allowed to overflow. How many inches are maintained between the water surface of the pond and the top of the drain overflow? _____ inches
 - Ponds are not drained between successive crops.
 - Fish are fed carefully to avoid overfeeding.
 - Pond banks are maintained with good vegetative cover to prevent erosion.
 - Fish are routinely screened to ensure fish health.
 - Water is not pumped into ponds except to fill ponds and to replace evaporation and seepage losses.
 - Other (please describe) _____
- _____
- CBI 15.** Certain pollutant control practices can be used to reduce the pond effluent volume or improve effluent quality **after** the water leaves the pond. Check any of the following practices that you use in your ponds.
- Water is sent to sedimentation basins, lagoons, or ponds.
 - Water is aerated (after it leaves the pond).
 - Water is sent to an infiltration ditch.
 - Water is sent to a vegetated drainage ditch.
 - Solids are filtered using screens (e.g., microscreens, rotating screens, vibrating screens).
-what do you do with the screened solids? _____
 - Water is sent to a wetland treatment system.
 - Water is stored on-site and is sent back into the pond.
 - Solids remaining in the pond are removed from the pond.
-what do you do with the removed solids? _____
 - Other (please describe) _____
- _____

Wastewater Discharge

- CBI 16.** How does water from your ponds leave your property? This question will provide EPA with an understanding of what happens to the water after it leaves your ponds and property.
- Pond water is sent directly to a stream, river, lake, estuary, ocean, or other public waterbody.
 - Pond water is sent to a ditch that leaves my property and eventually flows into a stream, river, lake, estuary, ocean, or other public waterbody that is not on my property. If this is the case, please estimate how far the water flows on private property (your property or other private property) before it enters a public waterbody. (Be sure to indicate units — feet or miles.) _____
 - Pond water is sent to a ditch that leaves my property but is used by another farmer for irrigation and does not flow into a stream, river, lake, estuary, ocean, or other public waterbody.
 - Pond water is sent to a publicly owned treatment works (i.e., the sewer).
 - Pond water does not leave my property because (please check all that apply):
 - pond water is sent to an infiltration ditch located on my property
 - pond water is sent to an injection well located on my property
 - pond water is evaporated from ponds or lagoons located on my property
 - pond water is used to irrigate crops on my property
 - pond water is stored on-site and sent back into pond
 - other (please describe) _____
- _____

Comments on your answers to Question 16 _____

CBI 17. If you have an NPDES permit, what is the permit number? _____

CBI 18. If your pond water eventually goes to a stream, river, lake, estuary, ocean, or other public waterbody, please identify the name of the waterbody and its location (river mile or prominent landmark, if known). _____

If you have any of the following aquaculture production systems on your site, please continue this questionnaire by going to the appropriate section(s):

- B. Flow Through Systems (begins on page A-11)
- C. Recirculating Systems (begins on page A-19)
- D. Net Pens and Cages (begins on page A-27)
- E. Floating Aquaculture and Bottom Culture (begins on page A-32)
- F. Other Aquaculture Systems (begins on page A-37)

If you have only ponds at your site AND pond water leaves your property, please continue this questionnaire by filling out sections 5 – 8 (starting on page A-44).

If you have only ponds at your facility AND if pond water does NOT leave your property (based on your response to question 16), you do not have to fill out the remainder of the survey. You may go directly to the certification statement at the end of the survey. Please fill out Certification Statement 1 (Part C, page C-1), sign it, and return the survey to the address provided.

B. Flow Through Systems

The following questions are designed to provide EPA with an understanding of your facility and how you manage the water and effluents in your flow through raceways, ponds, or tanks. EPA is interested in learning about any treatments or management practices that you use to help improve the quality of water before it is discharged from your flow through raceways, ponds, or tanks. EPA is also interested in any treatments or management practices that you use after water is discharged from your flow through raceways, ponds, or tanks. For the purpose of this survey, a discharge is water that no longer is being used for production of an aquatic species; for example, water from drains, overflows, and any other production unit water that is not being used for culture. EPA recognizes that there is diversity in the types of flow through raceways, ponds, or tanks. In an attempt to acknowledge this diversity and to help organize the responses, EPA has divided the “Flow Through” portion of the questionnaire into four phases, each consisting of one to four questions.

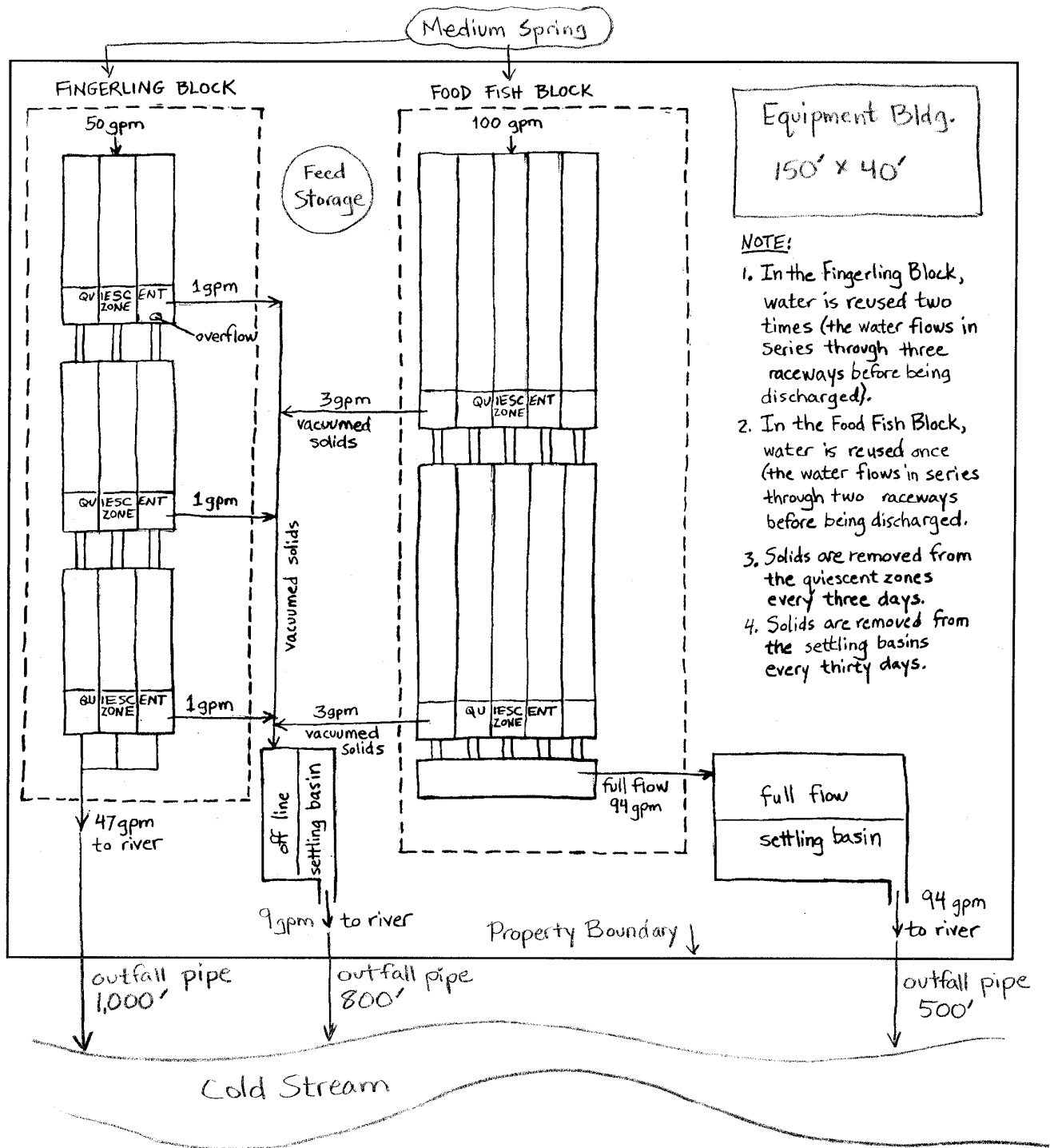
- Flow Through Raceway, Pond, or Tank Description
- Flow Through Raceway, Pond, or Tank Flow Rates
- Pollutant Control Practices
- Wastewater Discharge

CBI Site Diagram

Please draw a layout sketch of your flow through raceways, ponds, or tanks and clearly indicate the locations of sources of water and where water is discharged. Attach the layout sketch to the back of the survey. On the following page, EPA has provided an example to help you provide the level of detail EPA is seeking to fully understand your system. Provide additional notes on your layout sketch to help explain details if needed. Please include and label any of the following that apply:

- raceways, ponds, or tanks
- drain locations
- water source
- support buildings/structures
- any treatments outside the raceways, ponds, or tanks
- discharge locations from property
- property boundary

Example Site Diagram



Flow Through Raceway, Pond, or Tank Description

- CBI 19.** Please describe your water source.
 - a.** What is the water source for your flow through raceways, ponds, or tanks? (Please check all that apply.)
 - Water is pumped or flows from groundwater (wells or springs).
 - Water is pumped or flows from a stream, river, lake, estuary, ocean, or other surface waterbody.
 - Water is pumped or flows from a public supply (municipal or irrigation).
 - Other (please describe) _____
 - b.** Is your water source freshwater or saltwater? (Please check all that apply.)
 - Freshwater
 - Saltwater (which includes brackish, estuarine, ocean, and tidal sources)

- CBI 20.** Please list the number and types of flow through raceways, ponds, or tanks that are on your site in the following table.

Please use a separate row for each different type of flow through raceway, pond, or tank. If the sizes or uses of your flow through raceways, ponds, or tanks are significantly different, please use separate rows to describe them. Many facilities operate a series of raceways, ponds, or tanks together as a “block” or “unit.” Within the block (unit), there may be multiple raceways, ponds, or tanks operated together with similar flows running through them. Please enter the total number of raceways, ponds, or tanks in the block (unit) for each row in the table. Many facilities also reuse water after running it through an initial group of raceways, ponds, or tanks. Please enter the number of times water is reused before it is discharged (no longer used for culture).

You may give approximate sizes, but please indicate whether your measurement is in feet, meters, acres, or another unit. Flow through raceways, ponds, or tanks of roughly the same size may be grouped and entered in one row, or you may enter a range of sizes for the same type of production, if appropriate. If you have rectangular raceways, ponds, or tanks, please indicate the length, width, tank depth, and water depth. If you have circular ponds or tanks, please indicate the diameter, tank depth, and water depth. Follow the example provided in the table.

Description of flow through raceway, pond, or tank block (unit) (please be as specific as possible)	Total number of raceways, ponds, or tanks in the block (unit)	Number of times water is reused in the block (unit)	Dimensions					Construction material
			Length	Width	Diameter	Tank depth	Water depth	
<i>trout fingerling raceways</i> EXAMPLE	9	2	30 ft	4 ft	–	3 ft	2.5 ft	concrete
<i>trout foodsize fish raceways</i> EXAMPLE	10	1	40 ft	4 ft	–	3 ft	2.5 ft	concrete

Description of flow through raceway, pond, or tank block (unit) (please be as specific as possible)	Total number of raceways, ponds, or tanks in the block (unit)	Number of times water is reused in the block (unit)	Dimensions					Construction material
			Length	Width	Diameter	Tank depth	Water depth	

Comments on your answers to Question 20. _____

Flow Through Raceway, Pond, or Tank Flow Rates

- CBI 21.** In the table below please list the various flow rates for the flow through raceways, ponds, or tanks listed in Question 20. Please use a separate row for each different type of flow through raceway, pond, or tank that you listed in Question 20. The first column should be filled in exactly as the first column in Question 20 (see example). Remember to include the units that you use for each of the flow rates, for example, cubic feet per second (cfs) or gallons per minute (gpm). The average flow rate reported in the inflow column should equal the sum of the average flows for the outflow columns. If desired, you can enter the outflow rates as a percentage of the inflow, but be sure to indicate the numbers as percentages (%) and make sure the total of the outflows equals 100%.

Description of flow through raceway, pond, or tank block (unit) (please be as specific as possible)	Inflow	Outflow			
	What is the average flow rate of water flowing into the block (unit)?	What is the average flow rate of water discharged from this block (unit) to full-flow settling basins?	What is the average flow rate of water discharged from this block (unit) to off-line settling basins?	What is the average flow rate of water discharged from this block (unit) to other treatment systems?	What is the average flow rate of water discharged from this block (unit) directly off your property?
<i>trout fingerling raceways</i> EXAMPLE	<i>50 gpm</i>	<i>0</i>	<i>3 gpm</i>	<i>0</i>	<i>47 gpm</i>
<i>trout foodsize fish raceways</i> EXAMPLE	<i>100 gpm</i>	<i>94 gpm</i>	<i>6 gpm</i>	<i>0</i>	<i>0</i>

Description of flow through raceway, pond, or tank block (unit) (please be as specific as possible)	Inflow	Outflow			
	What is the average flow rate of water flowing into the block (unit)?	What is the average flow rate of water discharged from this block (unit) to full-flow settling basins?	What is the average flow rate of water discharged from this block (unit) to off-line settling basins?	What is the average flow rate of water discharged from this block (unit) to other treatment systems?	What is the average flow rate of water discharged from this block (unit) directly off your property?

Comments on your answers to Question 21 _____

Pollutant Control Practices

- CBI 22.** Certain management practices can be used to improve effluent quality *before* the water leaves the flow through raceway, pond, or tank. Check any of the practices that you use in these flow through raceways, ponds, or tanks.
 - Fish are fed carefully to avoid overfeeding.
 - Quiescent zones are used to settle solids (length of quiescent zone _____ feet).
 - Solids are routinely removed from quiescent zones (frequency of solids removal _____).
 - Fish inventory is controlled.
 - Fish are routinely screened to ensure fish health.
 - Raceway screens are routinely cleaned.
 - Mortalities are removed frequently.
 - Dam boards are used in raceways during grow-out.
 - Flow diversion is used during fish harvest (full-flow systems).
 - Other (please describe) _____

CBI 23. Certain pollutant control practices can be used to reduce flow through raceway, pond, or tank effluent volume or improve effluent quality **after** the water leaves the flow through raceway, pond, or tank. Check any of the practices that you use in these flow through raceways, ponds, or tanks.

- Water is sent to full-flow settling basins.
- Solids are routinely removed from full-flow settling basins (frequency of solids removal _____).
- Water is sent to off-line settling basins.
- Solids are routinely removed from off-line settling basins (frequency of solids removal _____).
- Water is aerated after it leaves the raceway, pond, or tank.
- Water is used for irrigation (directly from the raceways, ponds, or tanks).
- Water is sent to a vegetated drainage ditch.
- Water is sent to an infiltration ditch.
- Solids are filtered using screens (other than those used in the quiescent zones, e.g., microscreens, rotating screens, vibrating screens).
- Water is sent to a wetland treatment system (directly from the raceways, ponds, or tanks).
- Other (please describe) _____

CBI 24. Certain additional pollutant control practices can be used to reduce effluent volume or improve effluent quality **after** the water leaves a full-flow or off-line settling basin. Check any of the practices that you use in these full-flow or off-line settling basins.

- Water is chlorinated.
- Water is dechlorinated.
- Water is ozonated.
- Water is UV irradiated.
- Water is sent to a wetland treatment system.
- Additional solids are filtered using screens (e.g., microscreens, rotating screens, vibrating screens).
- Water is treated in a waste stabilization lagoon.
- Water is used for irrigation.
- Other (please describe) _____

CBI 25. Certain pollutant control practices can be used to treat solids (manure or biosolids) that are captured in quiescent zones, full-flow or off-line settling basins, or other solids separation practices. Check any of the practices that are used to treat solids.

- Storage tanks or lagoons.
- Composting.
- Incineration.
- Municipal sewage system or publicly owned treatment works (POTW).
- Land application.
- Vacuum trucks.
- Off-line dewatering (drying or dehydrating).
- Other (please describe) _____

Wastewater Discharge

- CBI 26.** How does water from your flow through raceways, ponds, or tanks leave your property? This question will provide EPA with an understanding of what happens to the water after it leaves your flow through raceways, ponds, or tanks, and property.
 - Flow through raceway, pond, or tank water is sent directly to a stream, river, lake, estuary, ocean, or other public waterbody.
 - Flow through raceway, pond, or tank water is sent to a ditch that leaves my property and eventually flows into a stream, river, lake, estuary, ocean, or other public waterbody that is not on my property. If this is the case, please estimate how far the water flows on private property (your property or other private property) before it enters a public waterbody. (Be sure to indicate units— feet or miles)
 - Flow through raceway, pond, or tank water is sent to a ditch that leaves my property but is used by another farmer for irrigation and does not flow into a stream, river, lake, estuary, ocean, or other public waterbody.
 - Flow through raceway, pond, or tank water is sent to a publicly owned treatment works (i.e., the sewer).
 - Flow through raceway, pond, or tank water does not leave my property because (please check all that apply):
 - flow through raceway, pond, or tank water is sent to an infiltration ditch located on my property
 - flow through raceway, pond, or tank water is sent to an injection well located on my property
 - flow through raceway, pond, or tank water is evaporated from ponds or lagoons located on my property
 - flow through raceway, pond, or tank water is used to irrigate crops on my property
 - other (please describe) _____

Comments on your answers to question 26 _____

CBI 27. If you have an NPDES permit, what is the permit number? _____

CBI 28. If your flow through raceway, pond, or tank water eventually goes to a stream, river, lake, estuary, ocean, or other public waterbody, please identify the name of the waterbody and its location (river mile or prominent landmark, if known). _____

If you have any of the following aquaculture production systems on your site, please continue this questionnaire by going to the appropriate sections:

- C. Recirculating Systems (begins on page A-19)
- D. Net Pens and Cages (begins on page A-27)
- E. Floating Aquaculture and Bottom Culture (begins on page A-32)
- F. Other Aquaculture Systems (begins on page A-37)

If you have only raceways, ponds, or tanks at your site AND flow through system water leaves your property, please continue this questionnaire by filling out sections 5 – 8 (starting on page A-44).

If you have only raceways, ponds, or tanks at your facility AND if flow through water system does NOT leave your property (based on your response to question 26), you do not have to fill out the remainder of the survey. You may go directly to the certification statement at the end of the survey. Please fill out Certification Statement 1(Part C, page C-1), sign it, and return the survey to the address provided.

C. Recirculating Systems

The following questions are designed to provide EPA with an understanding of your facility and how you manage the water in your recirculating systems. EPA is interested in learning about any treatments or management practices that you use to help improve the quality of water before it is discharged from your recirculating systems. EPA is also interested in any treatments or management practices that you use after water is discharged from your recirculating systems. For the purpose of this survey, a discharge is water that is no longer being used for production of an aquatic species, for example, water from drains, overflows, solids filter backwash, and any other production unit water that is not being used for culture. EPA recognizes that there is some diversity in the types of recirculating systems. In an attempt to acknowledge this diversity and to help organize the responses, EPA has divided the “Recirculating Systems” portion of the questionnaire into four parts, each consisting of one to three questions.

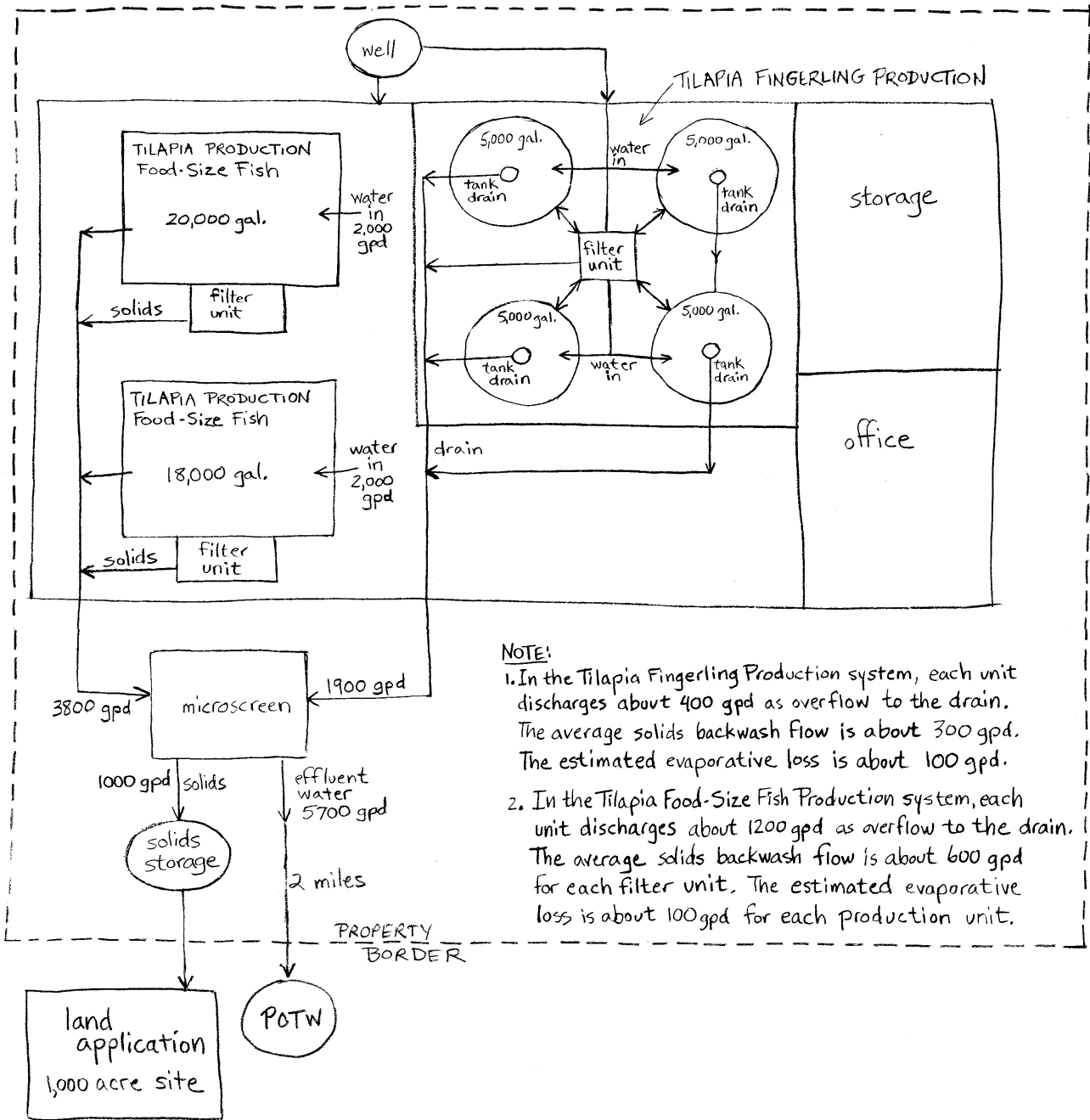
- Recirculating System Description
- Recirculating System Water Discharges
- Pollutant Control Practices
- Wastewater Discharge

CBI **Site Diagram**

Please draw a layout sketch of your recirculating systems and clearly indicate the location of sources of water and where water is discharged. Attach the layout sketch to the back of the survey. On the following page, EPA has provided an example to help you provide the level of detail EPA is seeking to fully understand your system. Provide additional notes on your layout sketch to help explain details, if needed. Please include and label any of the following that apply:

- recirculating systems - please indicate tanks and sizes
- drain locations
- water source
- support buildings/structures
- any treatments outside the recirculating systems
- discharge locations from property
- property boundary

Example Site Diagram



NOTE:

1. In the Tilapia Fingerling Production system, each unit discharges about 400 gpd as overflow to the drain. The average solids backwash flow is about 300 gpd. The estimated evaporative loss is about 100 gpd.
2. In the Tilapia Food-Size Fish Production system, each unit discharges about 1200 gpd as overflow to the drain. The average solids backwash flow is about 600 gpd for each filter unit. The estimated evaporative loss is about 100 gpd for each production unit.

Recirculating System Description

- CBI 29.** Please describe your water source.
 - a.** What is the water source for your recirculating systems? (Please check all that apply.)
 - Water is pumped or flows from groundwater (wells or springs).
 - Water is pumped or flows from a stream, river, lake, estuary, ocean, or other surface waterbody.
 - Water is pumped or flows from a public supply (municipal or irrigation).
 - Other (please describe) _____
 - b.** Is your water source freshwater or saltwater? (Please check all that apply.)
 - Freshwater
 - Saltwater (which includes brackish, estuarine, ocean, and tidal sources)

- CBI 30.** Please list the number and types of recirculating systems at your facility.

Please use a separate row for each different type of recirculating system. If the sizes or uses of your recirculating systems are significantly different, use separate rows to describe these recirculating systems. You may give approximate volumes, but please remember to indicate whether your measurement is in gallons, cubic feet, or another unit. Recirculating systems of roughly the same size may be grouped and entered in one row. Please enter the range of recirculating system sizes if they are grouped in the table below.

The average daily volume of make-up water is similar to what is sometimes referred to as the percent recycle and is the approximate average daily volume of water added to each recirculating system to compensate for evaporation, daily drainage, solids removal, and other daily water losses. Please be sure to include the measurement units when reporting the average daily volume of make-up water. Follow the example provided in the table.

Description of recirculating system	Number of this type of system	Average system volume	Average daily volume of make-up water
<i>tilapia fingerling production</i> EXAMPLE	1	20,000 gal (4 tanks x 5,000 gal)	2,000 gpd (4 tanks x 500 gpd)
<i>tilapia food-size fish production</i> EXAMPLE	2	19,000 gal (18,000 –20,000 gal)	1,900 gpd (1,800–2,000 gpd)

Comments on your answers to Question 30 _____

Recirculating System Water Discharges

CBI 31. Please describe what happens to water that is discharged from your recirculating system. Use a separate row for each different type of recirculating system that you listed in Question 30. The first column should be filled in exactly as the first column in Question 30 (see example).

The average daily effluent volume from the recirculating system is broken into three components:

- *overflow and drains* — water volume that is discharged (daily) from the recirculating system from either overflow pipes or drains, which can be a result of adding new water to the system, routine cleaning, or other activities.
- *solids removal* — water volume that is discharged (daily) from the recirculating system that comes directly from a solids removal process, for example, a microscreen, settling basin, or other solids removal equipment.
- *other* — water volume that is discharged (daily) from the recirculating system from any other source, for example, biofilter cleaning or any other source.

The total of the average daily effluent volume from the system should be less than or equal to the average daily volume of make-up water.

Description of recirculating system	Average daily effluent volumes		
	Overflow and drains	Solids removal	Other (please describe in comments section below)
<i>tilapia fingerling production</i> EXAMPLE	<i>1,600 gpd</i> <i>(400 gpd x 4 tanks)</i>	<i>300 gpd</i>	<i>see note 1 below</i>
<i>tilapia food-size fish production</i> EXAMPLE	<i>2,400 gpd</i> <i>(1,200 gpd x 2 tanks)</i>	<i>1,200 gpd</i> <i>(600 gpd x 2 filter units)</i>	<i>see note 2 below</i>

Comments on your answers to question 31

EXAMPLE: *Note 1. 100 gpd estimated evaporation*
 Note 2. 200 gpd estimated evaporation (100 gpd x 2 systems)

CBI 32. Please describe how often you completely drain your recirculating systems, any cleaning or treatments that are done to the tanks, and where the drainage water goes.

EPA is interested in how often recirculating system tanks are completely drained as a part of routine management; for example, when you harvest fish to sell or transfer them to another system. EPA is also interested in any cleaning or treatments that you do to the tanks while they are drained; for example, scrubbing with brushes and disinfecting with iodine solution. When tanks are routinely drained, where does the water go? Follow the example provided in the table.

Description of recirculating system	On average, how often do you completely drain this type of recirculating system?	Describe any cleaning, disinfection, or other treatments done in the tanks when the system is drained. (Please be as specific as possible and include the names of any chemicals used.)	Where does the drainage water go when you completely drain the system? (Please be as specific as possible describing where the water goes.)
<i>tilapia fingerling production</i> <i>EXAMPLE</i>	<i>3 times per year</i>	<i>brush tanks with 250 ppm iodine solution</i>	<i>drain to external microscreen</i>
<i>tilapia food-size fish production</i> <i>EXAMPLE</i>	<i>1 time per year</i>	<i>brush tanks with 250 ppm iodine solution</i>	<i>drain to external microscreen</i>

Comments on your answers to Question 32 _____

Pollutant Control Practices

CBI 33. Certain management practices can be used to improve effluent quality *before* the water leaves the recirculating system. Check any of the practices you use in these recirculating systems:

Biofiltration—Nitrification

- fluidized beds
 - bead filters
 - trickling filters
 - rotating biological contactors
 - submerged packed beds
 - other (please describe) _____
-
-

Solids Capture

- settling basins
 - sand filters
 - bead filters
 - microscreens
 - hydro-clones
 - other (please describe) _____
-
-

Aeration

- blown air
 - oxygen enrichment
 - sparge cones
 - packed columns
 - surface agitators
 - airstones
 - low head aerators
 - U-tubes
 - spray nozzles
 - other (please describe) _____
-
-

Disinfection

- ultraviolet
 - ozone
 - other (please describe) _____
-
-

Denitrification

- fluidized bed
 - submerged packed column
 - other (please describe) _____
-
-

Carbon Dioxide Stripping

- blown air
 - surface agitators
 - packed columns
 - spray columns
 - spray nozzles
 - other (please describe) _____
-
-

Water (Chemical) Conditioning

- bicarbonate additions
 - sodium hydroxide additions
 - softening
 - calcium chloride additions
 - sodium chloride (salt) additions
 - calcium hydroxide (lime) additions
 - other (please describe) _____
-
-

Management Practices

- fish fed carefully to avoid overfeeding
- fish inventory controlled
- fish routinely screened to ensure fish health
- tanks routinely cleaned
- mortalities removed frequently
- other (please describe) _____

CBI 34. Certain pollutant control practices can be used to reduce recirculating system effluent volumes or improve effluent quality *after* the water leaves the recirculating system. Check any of the practices you use in these recirculating systems.

- Water is sent to sedimentation basins, lagoons, or ponds.
- Routine solids removal from sedimentation basins, lagoons, or ponds (frequency of solids removal _____).
- Water is sent to biological filters (other than those in the recirculating system) for BOD and/or nitrogen treatment.
- Water is aerated after leaving the recirculating system.
- Water is chlorinated.
- Water is dechlorinated.
- Water is ozonated.
- Water is UV irradiated.
- Water is sent to a waste stabilization lagoon (including aeration lagoons or ponds).
- Water is used for irrigation.
- Water is sent to a vegetated drainage ditch.
- Water is sent to an infiltration ditch.
- Solids are filtered using screens (other than those used in the recirculating system itself, e.g., microscreens, rotating screens, vibrating screens).
- Water is sent to a wetland treatment system.
- Water is stored on-site and is reused in recirculating systems.
- Other (please describe) _____

CBI 35. Certain pollutant control practices can be used to treat solids (manure or biosolids) that are collected from solids separation practices *after* the solids leave the recirculating systems. Check any of the practices you use to treat solids.

- Storage tanks or lagoons.
- Composting.
- Incineration.
- Municipal sewage system or publicly owned treatment works (POTW).
- Land application.
- Vacuum trucks.
- Off-line dewatering (drying or dehydrating).
- Other (please describe) _____

Wastewater Discharge

- CBI 36.** How does water from your recirculating systems leave your property? This question will provide EPA with an understanding of what happens to the water after it leaves your recirculating systems and property.
- Recirculating system water is sent directly to a stream, river, lake, estuary, ocean, or other public waterbody.
 - Recirculating system water is sent to a ditch that leaves my property and eventually flows into a stream, river, lake, estuary, ocean, or other public waterbody that is not on my property. If this is the case, please estimate how far the water flows on private property (your property or other private property) before it enters a public waterbody. (Be sure to indicate units—feet or miles.) _____
 - Recirculating system water is sent to a ditch that leaves my property but is used by another farmer for irrigation and does not flow into a stream, river, lake, estuary, ocean, or other public waterbody.
 - Recirculating system water is sent to a publicly owned treatment works (i.e., the sewer).
 - Recirculating system water does not leave my property because (please check all that apply):
 - recirculating system water is sent to an infiltration ditch located on my property
 - recirculating system water is sent to an injection well located on my property
 - recirculating system water is evaporated from ponds or lagoons located on my property
 - recirculating system water is used to irrigate crops on my property
 - other (please describe) _____

Comments on your answers to Question 36 _____

- CBI 37.** If you have an NPDES permit, what is the permit number? _____
- CBI 38.** If your recirculating system water eventually goes to a stream, river, lake, estuary, ocean, or other public waterbody, please identify the name of the waterbody and its location (river mile or prominent landmark, if known). _____
- _____

If you have any of the following aquaculture production systems on your site, please continue this questionnaire by going to the appropriate sections:

- D. Net Pens and Cages (begins on page A-27)
- E. Floating Aquaculture and Bottom Culture (begins on page A-32)
- F. Other Aquaculture Systems (begins on page A-37)

If you have only recirculating systems at your site AND recirculating system water leaves your property, please continue this questionnaire by filling out sections 5 –8 (starting on page A-44).

If you have only recirculating systems at your facility AND if recirculating system water does NOT leave your property (based on your response to question 36), you do not have to fill out the remainder of the survey. You may go directly to the certification statement at the end of the survey. Please fill out Certification Statement 1(Part C, page C-1), sign it, and return the survey to the address provided.

D. Net Pens and Cages

The following questions are designed to provide EPA with an understanding of your facility and how you manage the water in and around your net pens and cages. EPA is interested in learning about any treatments or management practices that you use to help improve the quality of water in and around your net pens and cages. EPA recognizes that there is some diversity in the types of net pens and cages. In an attempt to acknowledge this diversity and to help organize the responses, EPA has divided the “Net Pens and Cages” portion of the questionnaire into two parts:

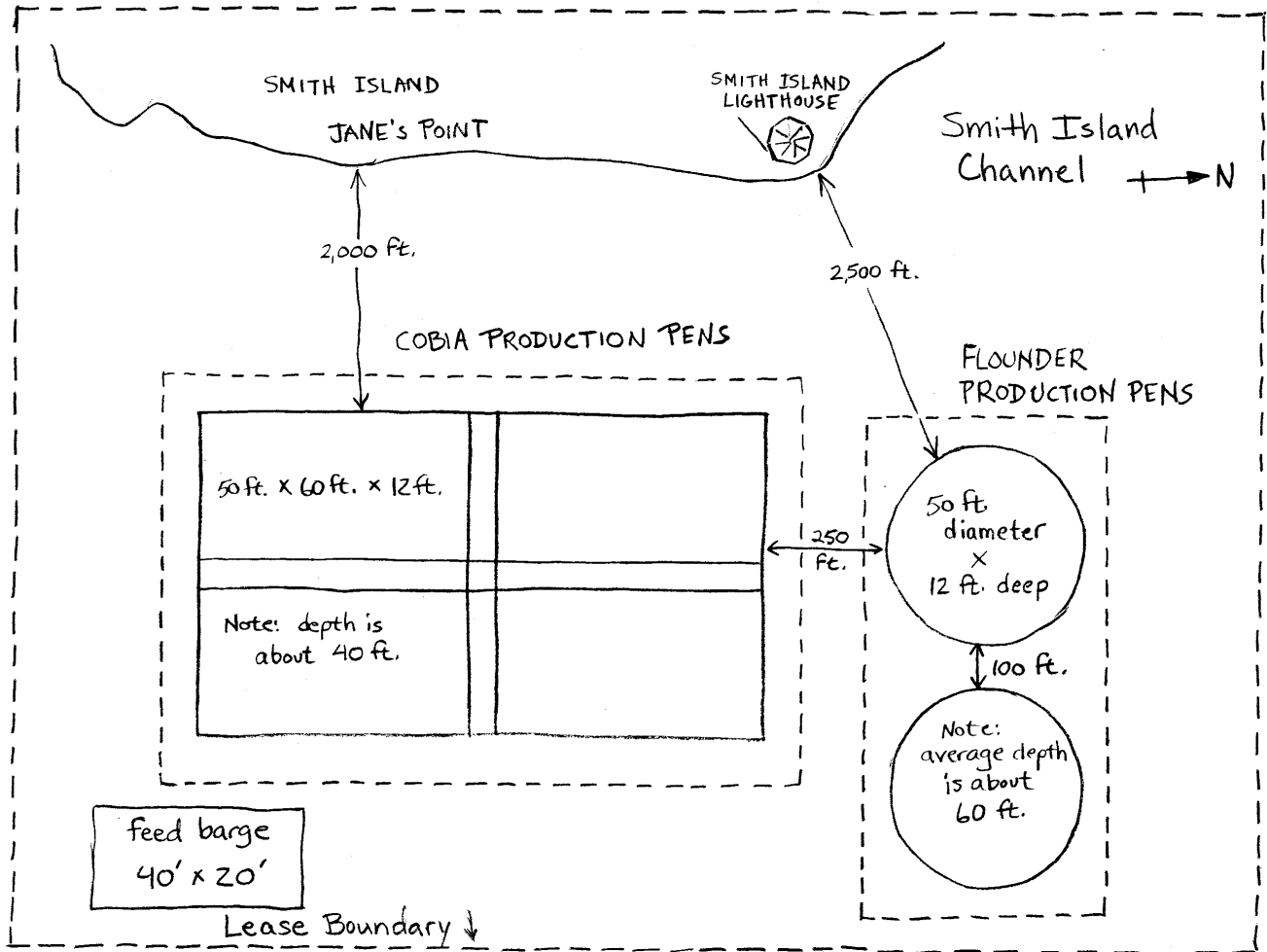
- Description of Net Pens and Cages
- Pollutant Control Practices

CBI Site Diagram

Please draw a layout sketch of your net pens and cages and attach the layout sketch to the back of the survey. On the following page, EPA has provided an example to help you provide the level of detail that EPA is seeking to fully understand your system. Provide additional notes on your sketch to help explain details, if needed. Please include and label any of the following that apply:

- net pens or cages (please indicate sizes)
- locations of prominent landmarks
- waterbody name
- support buildings/structures

Example Site Diagram



Description of Net Pens and Cages

CBI 39. Please use a separate row for each different type of net pen or cage. If the sizes or uses of your net pens or cages are significantly different, use separate rows to describe these net pens or cages. You may give approximate sizes, but please remember to indicate whether your measurement is in feet, meters, acres, or another unit. Net pens or cages of roughly the same size may be grouped and entered in one row. Please enter a range of sizes if they are grouped in the table below. If you have rectangular net pens or cages, please indicate the length, width, and depth. If you have circular net pens or cages, please indicate the diameter and depth. Follow the example provided in the table.

Description of net pens or cages (please be as specific as possible)	Number of net pens or cages and list construction materials	Dimensions			
		Length	Width	Diameter	Depth
<i>rectangular net pen—cobia production</i> <i>EXAMPLE</i>	<i>4 net pens</i> <i>steel structure;</i> <i>polyester/dacron</i>	<i>50 ft</i>	<i>60 ft</i>	<i>–</i>	<i>12 ft</i>
<i>round net pen—flounder production</i> <i>EXAMPLE</i>	<i>2 net pens</i> <i>steel/plastic structure;</i> <i>polyester/dacron</i> <i>netting</i>	<i>–</i>	<i>–</i>	<i>50 ft</i>	<i>12 ft</i>

Comments on your answers in Question 39 _____

CBI 40. Please enter the location (latitude and longitude) and water depth under the net pens or cages. Follow the example provided in the table.

Description of net pens or cages (please be as specific as possible)	Latitude	Longitude	Description of location of net pens or cages (please be as specific as possible)	Water depth under net pens or cages (include units)
<i>rectangular net pen—cobia production</i> <i>EXAMPLE</i>	<i>N 35° 58' 25"</i>	<i>W 75° 58' 48"</i>	<i>2,000 ft east of Smith Island Channel, Chesapeake Bay</i>	<i>40 ft</i>
<i>round net pens—flounder production</i> <i>EXAMPLE</i>	<i>N 35° 58' 25"</i>	<i>W 75° 58' 48"</i>	<i>2,500 ft northeast of Smith Island Channel, Chesapeake Bay</i>	<i>60 ft</i>

Comments on your answers to Question 40 _____

CBI 41. If you have an NPDES permit, what is the permit number? _____

Pollutant Control Practices

- CBI 42.** Certain management practices can be used to improve effluent quality in and around the net pens or cages. Check any of the practices that you use in these net pens or cages.
- Net pens or cages are sited in areas of good flushing.
 - Shellfish culture is practiced on-site.
 - Fish are fed carefully to avoid overfeeding.
 - Fish inventory is controlled.
 - Fish are routinely screened to ensure fish health.
 - Nets are routinely cleaned.
 - Escape nets are used to prevent escapement.
 - Mortalities are removed frequently.
 - Other (please describe) _____
- _____

If you have any of the following aquaculture production systems on your site, please continue this questionnaire by going to the appropriate sections:

- E. Floating Aquaculture and Bottom Culture (begins on page A-32)
- F. Other Aquaculture Systems (begins on page A-37)

If you have only net pens or cages at your site, please continue this questionnaire by filling out sections 5 – 8 (starting on page A-44).

E. Floating Aquaculture and Bottom Culture

The following questions are designed to provide EPA with an understanding of your facility and how you manage the water in and around your floating aquaculture and bottom culture units. EPA is interested in learning about any treatments or management practices that you use to help improve the quality of water in and around your floating aquaculture and bottom culture units. EPA recognizes that there is some diversity in the types of floating aquaculture and bottom culture units. In an attempt to acknowledge this diversity and to help organize the responses, EPA has divided the “Floating Aquaculture and Bottom Culture” portion of the questionnaire into two parts:

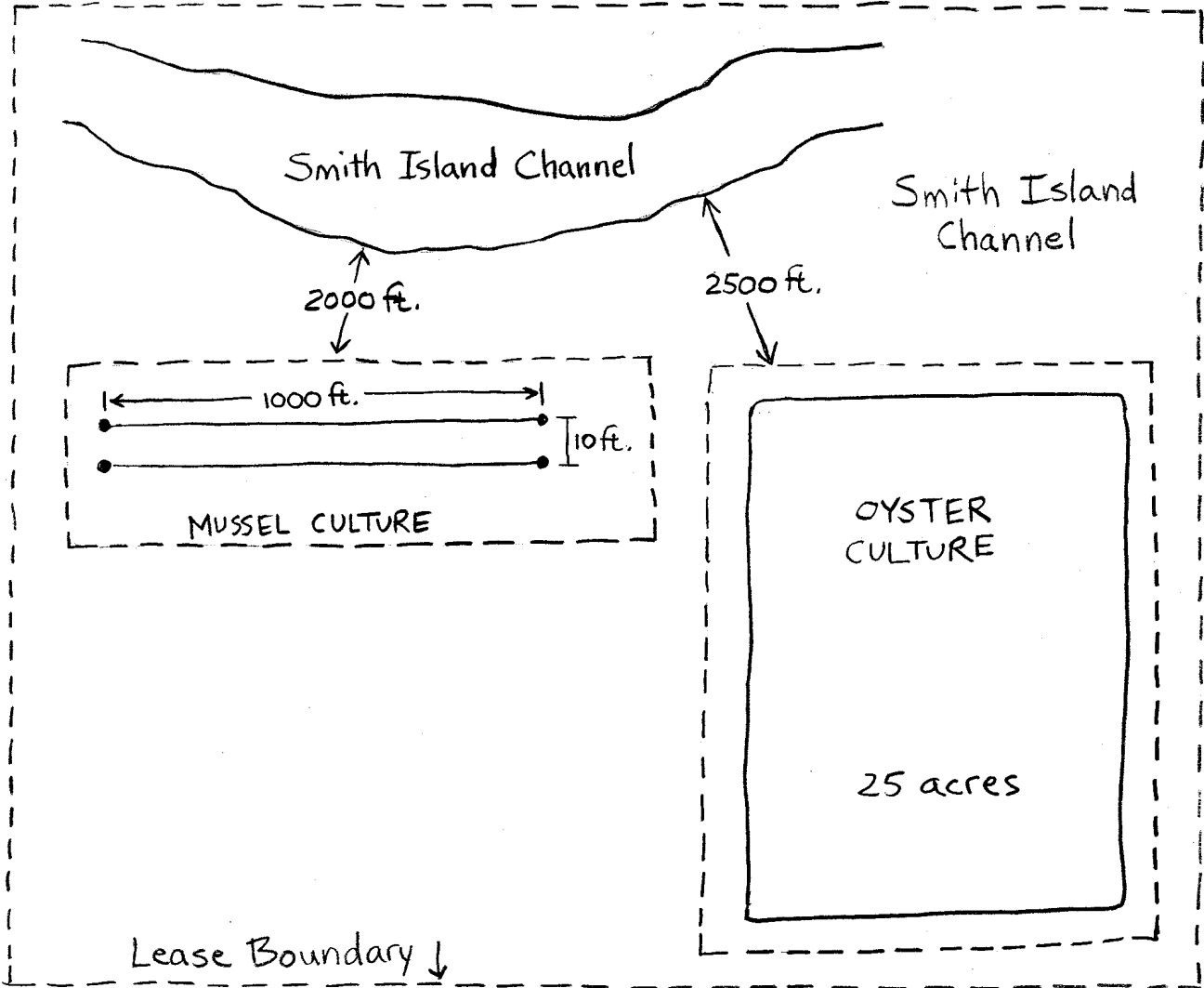
- Description of Floating Aquaculture and Bottom Culture Units
- Pollutant Control Practices

CBI Site Diagram

Please draw a layout sketch of your floating aquaculture and bottom culture units and attach the layout sketch to the back of the survey. On the following page, EPA has provided an example to help you provide the level of detail that EPA is seeking to fully understand your system. Provide additional notes on your layout sketch to help explain details, if needed. Please include and label any of the following that apply:

- floating aquaculture or bottom culture (please indicate sizes)
- locations of prominent landmarks
- waterbody name
- support buildings/structures

Example Site Diagram



Description of Floating Aquaculture and Bottom Culture Units

CBI 43. Please use a separate row for each different type of floating aquaculture or bottom culture unit. If your floating aquaculture or bottom culture units are significantly different sizes or are used for different purposes, use separate rows to describe these floating aquaculture or bottom culture units. You may give approximate sizes, but please remember to indicate whether your measurement is in feet, meters, acres, or another measurement unit. Floating aquaculture or bottom culture units of roughly the same size may be grouped and entered in one row. Please enter the range of sizes if they are grouped in the table below. Please indicate the average depth of water at your site. Follow the example provided in the table.

Description of floating aquaculture units or bottom culture (please be as specific as possible)	Number of floating aquaculture or bottom culture units	Dimensions			
		Length	Width	Area	Depth of water
<i>mussel culture—long line and string EXAMPLE</i>	<i>2 long lines</i>	<i>1,000 ft</i>	<i>10 ft</i>		<i>12 ft</i>
<i>oyster bottom culture EXAMPLE</i>	<i>1</i>	<i>–</i>	<i>–</i>	<i>25 acres</i>	<i>5 ft</i>

Comments on your answers to question 43 _____

CBI 44. Please enter the location and water depth under the floating aquaculture or bottom culture units. Follow the example provided in the table.

Description of floating aquaculture or bottom culture units (please be as specific as possible)	Latitude	Longitude	Description of location of floating aquaculture or bottom culture units (please be as specific as possible)
<i>mussel culture— long line and string</i>	<i>N 35° 58' 25"</i>	<i>W 75 58' 48"</i>	<i>2,000 ft east of Smith Island Channel, Chesapeake Bay</i>
<i>oyster bottom culture</i>	<i>N 35° 58' 25"</i>	<i>W 75 58' 48"</i>	<i>2,500 ft northeast of Smith Island Channel, Chesapeake Bay</i>

Comments on your answers to Question 44 _____

CBI 45. If you have an NPDES permit, what is the permit number? _____

Pollutant Control Practices

- CBI 46.** Certain management practices can be used to improve effluent quality in and around your floating aquaculture or bottom culture units. Check any of the practices you use in these floating aquaculture or bottom culture units.
 - Floating aquaculture or bottom culture units are sited in areas of good flushing.
 - Aquatic animal inventory is controlled.
 - Aquatic animals are routinely screened to ensure animal health.
 - Other (please describe) _____
-

If you have any of the following aquaculture production systems on your site, please continue this questionnaire by going to the appropriate sections:

F. Other Aquaculture Systems (begins on page A-37)

If you have only floating aquaculture and bottom culture at your site, please continue this questionnaire by filling out sections 5– 8 (starting on page A-44).

F. Other Aquaculture Systems

The following questions are designed to provide EPA with an understanding of your facility and how you manage the water in your aquaculture systems. This section is intended for systems that do not fit any other categories (i.e., Ponds, Flow Through, Recirculating, Net Pens and Cages, and Floating Aquaculture and Bottom Culture). Please call the Technical Help Line, (888) 743-1449, if you have any questions before proceeding. EPA is interested in learning about any treatments or management practices that you use to help improve the quality of water before it is discharged from your aquaculture systems. EPA is also interested in any treatments or management practices that you use after water is discharged from your aquaculture systems. For the purpose of this survey, a discharge is water that is no longer being used for production of an aquatic species, for example, water from drains, overflows, solids filter backwash, and any other production unit water that is not being used for culture. EPA recognizes that there is some diversity in the types of aquaculture systems. In an attempt to acknowledge this diversity and to help organize the responses, EPA has divided the “Other Aquaculture Systems” portion of the questionnaire into four parts, each consisting of one to three questions.

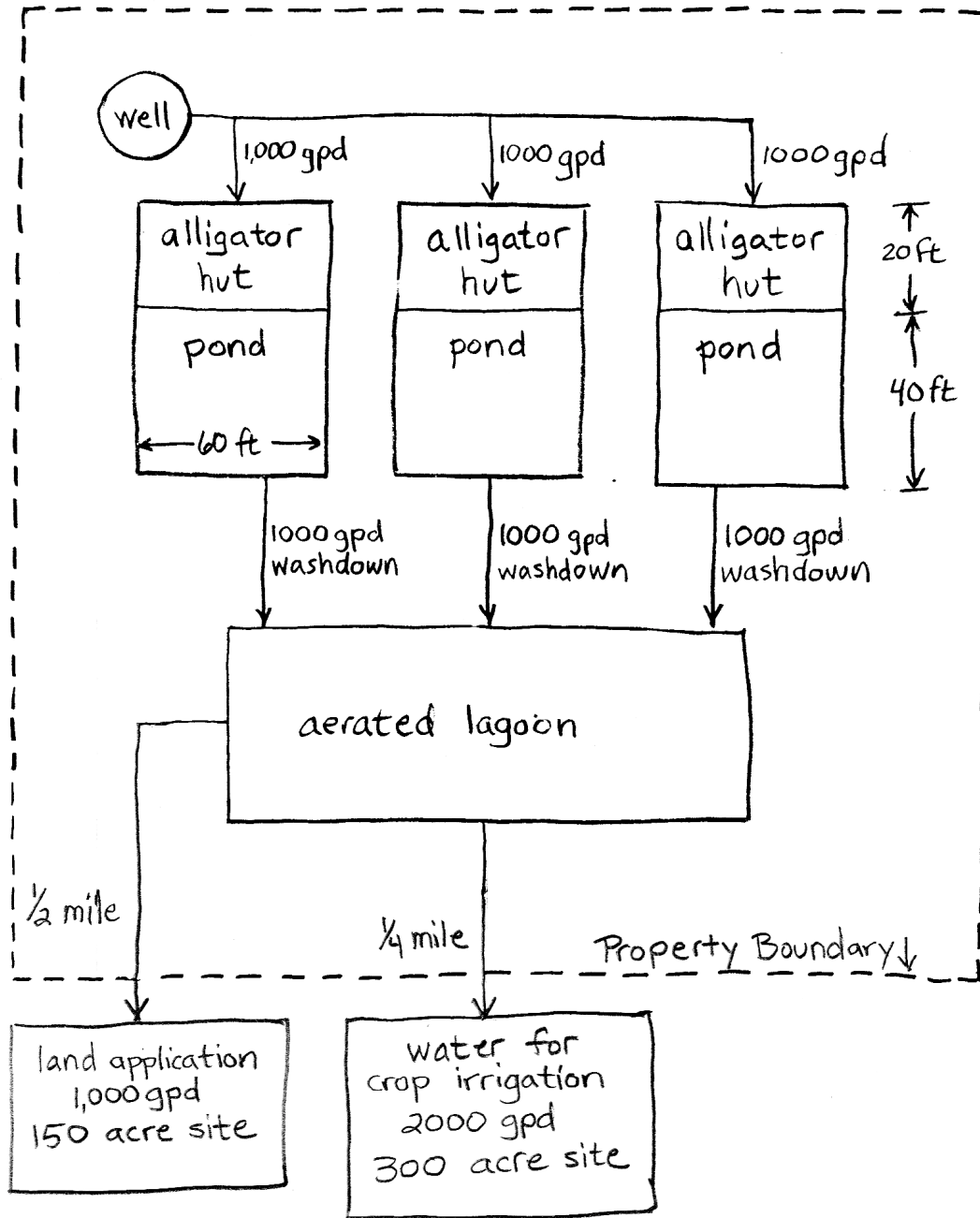
- Aquaculture System Description
- Aquaculture System Water Discharges
- Pollutant Control Practices
- Wastewater Discharge

CBI Site Diagram

Please draw a layout sketch of your aquaculture systems and clearly indicate the locations of sources of water and where water is discharged. Attach the layout sketch to the back of the survey. On the following page, EPA has provided an example to help you provide the level of detail that EPA is seeking to fully understand your system. Provide additional notes on your layout sketch to help explain details, if needed. Please include and label any of the following that apply:

- aquaculture systems (please indicate tanks and sizes; details on the filtration system are not needed)
- drain locations
- water source
- support buildings/structures
- any treatments outside of the aquaculture systems
- discharge locations from property
- property boundary

Site Diagram



Aquaculture System Description

- CBI 47.** Please describe your water source
 - a.** What is the water source for your aquaculture systems? (Please check all that apply.)
 - Water is pumped or flows from groundwater (wells or springs).
 - Water is pumped or flows from a stream, river, lake, estuary, ocean, or other surface water body.
 - Water is pumped or flows from a public supply (municipal or irrigation).
 - Other (please describe) _____
 - b.** Is your water source freshwater or saltwater? (Please check all that apply.)
 - Freshwater
 - Saltwater (which includes brackish, estuarine, ocean, and tidal sources)

- CBI 48.** Please list the number and types of aquaculture systems at your facility.

Please use a separate row for each different type of aquaculture system. If the sizes or uses of your aquaculture systems are significantly different, use separate rows to describe these aquaculture systems. You may give approximate volumes, but please remember to indicate whether your measurement is in gallons, cubic feet, or another measurement unit. Aquaculture systems of roughly the same size may be grouped and entered in one row. Please enter a range of volumes if they are grouped in the table below.

The average daily volume of make-up water is similar to what is sometimes referred to as the percent recycle and is the approximate average daily volume of water added to each aquaculture system to compensate for evaporation, daily drainage, solids removal, and other daily water losses. Please be sure to include the units when reporting the average daily volume of make-up water. Follow the example provided in the table.

Description of aquaculture system	Number of this type of system	Average system volume	Average daily volume of make-up water
<i>alligator production huts</i> EXAMPLE	3	2,400 cubic feet (60 ft x 40 ft x 1 ft)	1,000 gal

Comments on your answers to Question 48 _____

Aquaculture System Water Discharges

CBI 49. Please describe what happens to water that is discharged from your aquaculture system. Please enter a separate line for each different type of aquaculture system that you listed in question 48. The first column should be filled in exactly as the first column in question 48 (see example).

The average daily effluent volume from the aquaculture system is broken into three components:

- *overflow and drains*—water volume that is discharged (daily) from the aquaculture system from overflow pipes or drains, which may be a result of adding new water to the system, routine cleaning, or other activities
- *solids removal* —water volume that is discharged (daily) from the aquaculture system that comes directly from a solids removal process, for example, a microscreen, settling basin, or other solids removal equipment
- *other*— water volume that is discharged (daily) from the aquaculture system from any other source, for example, biofilter cleaning or any other source

The total of the average daily effluent volume from the system should be less than or equal to the average daily volume of make-up water. Follow the example provided in the table.

Description of aquaculture system	Average daily effluent volumes		
	Overflow and drains	Solids removal	Other (please describe in comments section below)
<i>alligator production huts</i> EXAMPLE	<i>1,000 gpd</i>	<i>0</i>	<i>0</i>

Comments on your answers in Question 49 _____

CBI 50. Please describe how often you completely drain your aquaculture systems, any cleaning or treatments that are done to the tanks, and where the drainage water goes.

EPA is interested in how often aquaculture system tanks are completely drained as a part of routine management, for example, when you harvest fish to sell or transfer to another system. EPA is also interested in any cleaning or treatments that you do to the tanks while they are drained, for example, scrubbing with brushes and disinfecting with iodine solution. When tanks are routinely drained, where does the water go? Follow the example provided in the table.

Description of aquaculture system	On average, how often do you completely drain this type of aquaculture system?	Describe any cleaning, disinfection, or other treatments that are done in the tanks when the system is drained. (Please be as specific as possible and include the names of any chemicals used.)	Where does the drainage water go when you completely drain the systems? (Please be as specific as possible describing where the water goes.)
<i>alligator production huts</i> <i>EXAMPLE</i>	<i>1/month</i>	<i>brush and disinfect with chlorine bleach solution</i>	<i>aerated lagoon</i>

Comments on your answers to Question 50 _____

Pollutant Control Practices

CBI 51. Certain management practices can be used to improve effluent quality **before** the water leaves the aquaculture system. Check any of the practices used in these aquaculture systems.

- Aquatic animals are fed carefully to avoid overfeeding.
 - Aquatic animal inventory is controlled.
 - Aquatic animals are routinely screened to ensure aquatic animal health.
 - Tanks are routinely cleaned.
 - Mortalities are removed frequently.
 - Other (please describe) _____
-

CBI 52. Certain pollutant control practices can be used to reduce aquaculture system effluent volumes or improve effluent quality **after** the water leaves the aquaculture system. Check any of the practices used in these aquaculture systems.

- Water is sent to sedimentation basins, lagoons, or ponds.
 - Routine solids removal from sedimentation basins, lagoons, or ponds (frequency of solids removal _____).
 - Water is sent to biological filters (other than those in the aquaculture system) for BOD and/or nitrogen treatment.
 - Water is aerated.
 - Water is chlorinated.
 - Water is dechlorinated.
 - Water is ozonated.
 - Water is UV irradiated.
 - Water is sent to a waste stabilization lagoon (including aeration lagoons or ponds).
 - Water is used for irrigation.
 - Water is sent to a vegetated drainage ditch.
 - Water is sent to an infiltration ditch.
 - Solids are filtered using screens (other than those used in the aquaculture system itself; e.g., micro screens, rotating screens, vibrating screens).
 - Water is sent to a wetland treatment system.
 - Water is stored on-site and is reused in aquaculture systems.
 - Other (please describe) _____
-

CBI 53. Certain pollutant control practices can be used to treat solids (manure or biosolids) that result from solids separation practices **after** the solids leave the aquaculture systems. Check any of the practices used to treat solids.

- Storage tanks or lagoons.
 - Composting.
 - Incineration.
 - Municipal sewage system or publicly owned treatment works (POTW).
 - Land application.
 - Vacuum trucks.
 - Off-line dewatering (drying or dehydrating).
 - Other (please describe) _____
-

Wastewater Discharge

- CBI 54.** How does water from your aquaculture system leave your property? This question will provide EPA with an understanding of what happens to the water after it leaves your aquaculture system and property.
- Aquaculture system water is sent directly to a stream, river, lake, estuary, ocean, or other public waterbody.
 - Aquaculture system water is sent to a ditch that leaves my property and eventually flows into a stream, river, lake, estuary, ocean, or other public waterbody that is not on my property. If this is the case, please estimate how far the water flows on private property (your property or other private property) before it enters a public waterbody. (Be sure to indicate units-feet or miles.) _____
 - Aquaculture system water is sent to a ditch that leaves my property but is used by another farmer for irrigation and does not flow into a stream, river, lake, estuary, ocean, or other public waterbody.
 - Aquaculture system water is sent to a publicly owned treatment works (i.e., the sewer).
 - Aquaculture system water does not leave my property because (please check all that apply):
 - aquaculture system water is sent to an infiltration ditch located on my property
 - aquaculture system water is sent to an injection well located on my property
 - aquaculture system water is evaporated from ponds or lagoons located on my property
 - aquaculture system water is used to irrigate crops on my property
 - other (please describe) _____

Comments on your answers to Question 54 _____

CBI 55. If you have an NPDES permit, what is the permit number? _____

CBI 56. If your aquaculture system water eventually goes to a stream, river, lake, estuary, ocean, or other public waterbody, please identify the name of the waterbody and its location (river mile or prominent landmark, if known) _____

If you have only “other” aquaculture systems at your site AND aquaculture system water leaves your property, please continue this questionnaire by filling out sections 5 – 8 (starting on page A-44).

You may go directly to the certification statement at the end of the survey. Please fill out Certification Statement 1(Part C, page C-1), sign it, and return the survey to the address provided.

Section 5. COST INFORMATION

Reminder: If effluent does not leave your property you do not have to fill out the remainder of the survey. You may go directly to the Certification Statement at the end of the survey (Part C, page C-1).

- CBI 57.** In the previous subsections, you identified the pollution control practices that you use to treat water after it leaves your aquaculture production system(s) (for example, ponds, raceways, recirculating systems, etc.). The information you provide in this section is designed to inform EPA about the costs of these pollution control practices. Complete the tables on page A-45 for each pollution control practice that you use. The different cost elements (capital investment, planning and design, labor for installation) are included to help you provide all of the costs associated with a particular pollution control practice. If you only know the total cost of a pollution control practice, then enter the total cost in the "Total cost" cell. See page A-46 for an example of the information that EPA is seeking.

Make copies of this page and the tables on page A-45 **BEFORE** you fill them out so that you have two separate sheets for each piece of equipment and/or wastewater treatment process (including best management practices that are used to treat the water before it leaves the production unit) used at the facility. Label each copy in the spaces provided in the top right corner of the page.

- Check this box if there have been no wastewater treatment investment costs since the inception of this facility and go to Question 58 on page A-47.

Please describe the pollution control practice: _____

What year did you install this pollution control practice? _____

Cost element- Initial investment	Original cost
Capital investment	\$
Planning and design	\$
Labor for installation	\$
Other costs (please list cost element)	
	\$
	\$
	\$
Total cost	\$

Cost element-Annual costs	Original cost
Labor for maintenance	\$
Maintenance supplies and materials	\$
Energy	\$
Other costs (please list cost element)	
	\$
	\$
	\$
Total cost	\$

Example of cost information for pollution control practices

Facility X grows Tilapia in a recirculating system. Facility X uses a 1-acre off-line settling basin and land applies the collected solids. The settling basin is made of concrete, and the solids are pumped weekly to a storage tank. Once a month, the storage tank is pumped out and the slurry is land applied on land that the fish farmer owns.

Please describe the pollution control practice: A 1-acre off-line settling basin made of concrete and built in 1995. The settling basin has a storage capacity of 2 weeks at Facility X during periods of maximum production, about 325,000 gallons of settled solids. A 1.5-million-gallon enameled steel manure storage tank is located on-site to store solids pumped out of the settling basin. The transfer pump from the settling basin to the storage tank is a 15-hp high solids pump with 250 ft. of 4-inch PVC pipe. A 10-hp pump is used to agitate and pump out the storage tank.

What year did you install this practice? 1995.

Cost element-Initial cost	Original Cost
Capital investment-concrete settling basin, 1.5-million-gallon storage tank, 15-hp pump, 10-hp pump, 250-ft PVC pipe, other supplies	\$ 45,000
Planning and design -engineering, planning, surveying, planning	\$5,000
Labor for installation	\$5,000
Other costs (please list cost element)	
Electrical hook-up	\$ 2,500
Total cost	\$58,000

Cost element -Annual costs	Original cost
Labor for maintenance -pump out @ 10 hours biweekly; land application @ 20 hours/month; general maintenance @ 40 hours/year	\$ 5,400
Maintenance supplies and materials	\$ 2,500
Energy	\$ 2,000
Other costs (please list cost element)	
	\$
	\$
	\$
Total cost	\$ 9,900

- CBI 58.** The purpose of this question is to help EPA understand the total annual operating costs at your facility in fiscal year 2000, including costs associated with wastewater treatment. In column 2, provide your best estimate of the total annual quantity of each item used in the unit measure provided. If you do not use a particular item, please enter "0" rather than leaving it blank. In column 3, provide your best estimate of the price per unit.

ESTIMATED TOTAL ANNUAL OPERATING COSTS AT YOUR FACILITY IN FISCAL YEAR 2000			
	1	2	3
Item	Unit	Total quantity	Unit price
Eggs (specify unit)			
Seed (shellfish operations) (specify unit)			
Fingerlings (specify unit)			
Broodstock (specify unit)			
Feed	tons		
Predator control (specify unit)			
Chemicals			
Antibiotic feed	pounds		
Liquid fertilizer	gallons		
Dry fertilizer	pounds		
Liquid insecticide, pesticide, piscicide, or herbicide	gallons		
Dry insecticide, pesticide, piscicide, or herbicide	pounds		
Copper sulfate	pounds		
Potassium permanganate	pounds		
Lime (specify unit)			
Other (please list) _____ (specify unit)			
Paid Labor			
Part-time (< 40 hours/week)	number of employees		
	hours/week		
Full-time (≥ 40 hours/week)	number of employees		
	hours/week		
Paid Management			
	number of employees		
	hours/week		

ESTIMATED TOTAL ANNUAL OPERATING COSTS AT YOUR FACILITY IN FISCAL YEAR 2000			
	1	2	3
Item	Unit	Total quantity	Unit price
Unpaid Labor Part-time (< 40 hours/week)	number of employees		
	hours/week		
Full-time (≥ 40 hours/week)	number of employees		
	hours/week		
Unpaid Management	number of employees		
	hours/week		
Repairs and Maintenance			
Machinery/equipment (specify unit)			
Levee repairs/pond renovation (specify unit)			
Electricity	kilowatt-hour		
Well operation	acre-feet		
Gasoline, fuel, oil (specify unit)			
Harvesting and hauling (specify unit)			

Section 7. MONITORING INFORMATION

CBI 59. Complete the table for pollutants in discharged wastewater that were sampled/monitored at your facility in the past three years. Provide the name of the pollutant(s) sampled or monitored and the sampling frequency.

- Check this box if no sampling/monitoring of wastewater has been conducted at this facility.
- Check this box if sampling/monitoring was conducted prior to 1998.

Pollutant sampled/monitored	Sampling frequency (weekly, monthly, quarterly, annually)		
	2000	1999	1998

Section 8. PRODUCT LOSSES

- CBI 60.** What was the estimated total loss of fish or other animal aquaculture (including losses from predation, escapes, mortalities, disease, or other) from this facility in fiscal year 2000 for each of the following?

	Number of eggs/larvae	Number of fry/seed	Number of fingerlings	Number of stockers	Number of food-size	Number of brood stock
Total losses						

- CBI 61.** If escapement data are available, how many finfish, shellfish, or other animal aquaculture (e.g., alligators, turtles, frogs) **escaped** from your facility in fiscal year 2000? See definitions of *native* and *nonnative species* in definitions section of the survey.

- Check this box if there were no escapes or you did not monitor escapes at this facility in 2000 and go to question 62.

	Number of eggs/larvae	Number of fry/seed	Number of fingerlings	Number of stockers	Number of food-size	Number of brood stock
Native species						
Nonnative species						

Section 9. FEED INFORMATION

- CBI 62.** For fiscal year 2000, indicate the number of tons of aquatic animal production feed used annually and in your peak month, the type of feed used and the feed content. List all diets used at the facility (for example, larval, growout, maintenance, etc.).

Regular Feed

Nonmedicated feed types	Annual amount used (in tons)	Peak month amount used (in tons)	Manufacturer and product number/ID	Feed content
				___ % protein ___ % phosphorus
				___ % protein ___ % phosphorus
				___ % protein ___ % phosphorus
				___ % protein ___ % phosphorus
				___ % protein ___ % phosphorus

Nonmedicated feed types	Annual amount used (in tons)	Peak month amount used (in tons)	Manufacturer and product number/ID	Feed content
				___ % protein ___ % phosphorus
				___ % protein ___ % phosphorus
				___ % protein ___ % phosphorus
				___ % protein ___ % phosphorus

Medicated Feed

Medicated feed types	Annual amount used (in tons)	Peak month amount used (in tons)	Manufacturer and product number/ID	Active medication ingredient	Feed content
					___ % protein ___ % phosphorus
					___ % protein ___ % phosphorus
					___ % protein ___ % phosphorus
					___ % protein ___ % phosphorus
					___ % protein ___ % phosphorus
					___ % protein ___ % phosphorus
					___ % protein ___ % phosphorus
					___ % protein ___ % phosphorus
					___ % protein ___ % phosphorus

PART B ECONOMIC AND FINANCIAL INFORMATION

In developing effluent guidelines, EPA is required under the Clean Water Act to evaluate the economic impacts of potential additional water pollution control costs to the industry. One element of EPA's economic analysis will be a determination of the proposed regulation's impacts on individual facilities. Using actual facility-level financial information is the most accurate way to estimate these impacts. With this 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. To estimate potential closures, EPA generally uses a standard financial decision model that predicts closure if net income changes from positive to negative after incurring any additional pollution control costs. Other impacts, such as losses in output, losses in revenue, and losses in employment, can be calculated directly from the closure analysis and corresponding facility-level data collected in this survey.

In addition to requesting cost and income information, EPA is also requesting a limited set of balance sheet information. This information will allow EPA to more fully 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."

Other financial ratios commonly used by USDA and industry to measure farm financial performance also rely on balance sheet information. These include other measures of solvency, leverage, liquidity, and profitability (e.g., return on assets and returns on equity).

COST AND INCOME INFORMATION

The next section requests cost and income information for 3 years: 2000, 1999, and 1998. Information is being requested both at the farm facility level (i.e., **total farm operations**) and at the aquaculture level (i.e., **aquatic animal production only**). **Respondents may choose to voluntarily provide EPA with a photocopy of their 2000, 1999, and 1998 tax forms** (e.g., Schedule F, Schedule C, Form 1120 or 1120S) **or prepared income statements instead of completing Question 64 related to total farm/facility operations** (federal tax returns and return information is kept confidential as provided in the federal code at 26 U.S.C. § 6103). To the degree possible, EPA has identified the corresponding tax form line items (Schedule F and Schedule C) where the requested data can be found.

EPA recognizes that some facilities may not maintain income records at the aquaculture level, and it does not intend for these respondents to hire a professional to help them complete this question (Question 67). However, EPA believes that it can perform a better economic analysis with best financial estimates rather than no information. As necessary, respondents may call the toll-free Economic Helpline at (800) 566-7364 for assistance in completing these questions.

- CBI 63.** Please check the box identifying the accounting method used at your facility. (See Definitions on page vi.)

Cash

Accrual

TOTAL FARM/ FACILITY INFORMATION

<input type="checkbox"/> CBI			
64. Total farm/facility information. Complete the following information for fiscal years 2000, 1999, and 1998. Report amounts in dollars; round to the nearest thousand. If you prefer, EPA will complete this question if you submit copies of your 2000, 1999, and 1998 tax forms or prepared income statements.			
(Reference tax schedule and line numbers follow in parentheses)	2000	1999	1998
Total Sales (Schedule F, cash - sum of lines 3 and 4, accrual - line 38; Schedule C, line 1)	\$ ____, ____, ____, 000	\$ ____, ____, ____, 000	\$ ____, ____, ____, 000
Gross Income (Schedule F, cash - line 11, accrual - line 51; Schedule C, line 7)	\$ ____, ____, ____, 000	\$ ____, ____, ____, 000	\$ ____, ____, ____, 000
Total Expenses (Schedule F, line 35; Schedule C, line 28)	\$ ____, ____, ____, 000	\$ ____, ____, ____, 000	\$ ____, ____, ____, 000
Individual Expense Items			
a. Chemicals (F:13)	\$ ____, ____, ____, 000	\$ ____, ____, ____, 000	\$ ____, ____, ____, 000
b. Depreciation (F:16; C:12 and C:13)	\$ ____, ____, ____, 000	\$ ____, ____, ____, 000	\$ ____, ____, ____, 000
c. Feed purchased (F:18)	\$ ____, ____, ____, 000	\$ ____, ____, ____, 000	\$ ____, ____, ____, 000
d. Fertilizers and lime (F:19)	\$ ____, ____, ____, 000	\$ ____, ____, ____, 000	\$ ____, ____, ____, 000
e. Gasoline, fuel, and oil (F:21)	\$ ____, ____, ____, 000	\$ ____, ____, ____, 000	\$ ____, ____, ____, 000
f. Insurance (other than health; F:22; C:15)	\$ ____, ____, ____, 000	\$ ____, ____, ____, 000	\$ ____, ____, ____, 000
g. Interest-mortgage (F:23a; C:16a)	\$ ____, ____, ____, 000	\$ ____, ____, ____, 000	\$ ____, ____, ____, 000
h. Interest-other (F:23b; C:16b)	\$ ____, ____, ____, 000	\$ ____, ____, ____, 000	\$ ____, ____, ____, 000
i. Labor hired (F:24; C:26)	\$ ____, ____, ____, 000	\$ ____, ____, ____, 000	\$ ____, ____, ____, 000
j. Rent or lease-vehicles, machinery, and equipment (F:26a; C:20a)	\$ ____, ____, ____, 000	\$ ____, ____, ____, 000	\$ ____, ____, ____, 000
k. Rent or lease-land, animals, other (F:26b; C:20b)	\$ ____, ____, ____, 000	\$ ____, ____, ____, 000	\$ ____, ____, ____, 000
l. Repairs & maintenance (F:27; C:21)	\$ ____, ____, ____, 000	\$ ____, ____, ____, 000	\$ ____, ____, ____, 000
m. Taxes (F:31; C:23)	\$ ____, ____, ____, 000	\$ ____, ____, ____, 000	\$ ____, ____, ____, 000
n. Utilities (F:32; C:25)	\$ ____, ____, ____, 000	\$ ____, ____, ____, 000	\$ ____, ____, ____, 000
COMPLETE THE FOLLOWING ONLY IF YOU USE ACCRUAL ACCOUNTING (Enter "NA" if you use cash accounting)			
o. Cost of aquatic animals, livestock, produce, grains, and other products sold (F:50; C42)	\$ ____, ____, ____, 000	\$ ____, ____, ____, 000	\$ ____, ____, ____, 000

CBI

65. Did any of the total sales in Question 47 come from fee fishing operations?

NO Go to Question 66.

YES Please answer the following. **Report amounts in dollars; round to the nearest thousand.**

Check box if data are best estimates

2000 Sales from Fee Fishing Not in Operation..... <input type="checkbox"/> (Leave column blank)	1999 Sales from Fee Fishing Not in Operation..... <input type="checkbox"/> (Leave column blank)	1998 Sales from Fee Fishing Not in Operation..... <input type="checkbox"/> (Leave column blank)
\$ ____, ____, ____, 000	\$ ____, ____, ____, 000	\$ ____, ____, ____, 000

CBI

66. Did you raise any agricultural products other than aquatic animals in 2000, 1999, or 1998?

NO Go to Question 68.

YES Please answer the following. **Report amounts in dollars; round to the nearest thousand.**

Check box if data are best estimates

Type of Agricultural Product	2000 Sales from Other Agricultural Products Not in Operation.... <input type="checkbox"/> (Leave column blank)	1999 Sales from Other Agricultural Products Not in Operation.... <input type="checkbox"/> (Leave column blank)	1998 Sales from Other Agricultural Products Not in Operation.... <input type="checkbox"/> (Leave column blank)
a. Other livestock	\$ ____, ____, ____, 000	\$ ____, ____, ____, 000	\$ ____, ____, ____, 000
b. Crops co-located with aquatic animal production (Crops grown _____)	\$ ____, ____, ____, 000	\$ ____, ____, ____, 000	\$ ____, ____, ____, 000
c. Land crops not co-located with aquatic animal production	\$ ____, ____, ____, 000	\$ ____, ____, ____, 000	\$ ____, ____, ____, 000
d. Aquatic plants (algae, seaweed, etc.)	\$ ____, ____, ____, 000	\$ ____, ____, ____, 000	\$ ____, ____, ____, 000
e. Other _____	\$ ____, ____, ____, 000	\$ ____, ____, ____, 000	\$ ____, ____, ____, 000

FISH, SHELLFISH, OR OTHER AQUATIC ANIMAL PRODUCTION INFORMATION

Questions 67 and 68 request information specific to your aquatic animal production operation. As a reminder, you do not have to complete Question 67 if aquatic animals were the only agricultural products you produced in 2000, 1999, and 1998.

CBI

67. Aquatic Animal Information. Complete the following information for fiscal years 2000, 1999, and 1998. **Report amounts in dollars; round to the nearest thousand.** If you cannot separate any of the **individual expense items** into “aquatic animal production” and “other total farm” costs, enter “NA.” If the cost of aquatic animal production for an individual expense item is zero, enter “0.” Do not leave any of the cells blank. You must provide information on the Gross Income and Total Expenses at your farm facility related to aquatic animal production.

Check one box: The values given below are: from prepared financial statements my best financial estimates

<small>(Reference tax schedule and line numbers follow in parenthesis— information requested will be a portion of these line items)</small>	2000	1999	1998
Gross Income <small>(Part of Schedule F, cash — line 11, accrual — line 51; Schedule C, line 7)</small>	\$ ____, ____, ____, 000	\$ ____, ____, ____, 000	\$ ____, ____, ____, 000
Total Expenses <small>(Part of Schedule F, line 35; Schedule C, line 28)</small>	\$ ____, ____, ____, 000	\$ ____, ____, ____, 000	\$ ____, ____, ____, 000
Individual Expense Items			
a. Chemicals (F:13)	\$ ____, ____, ____, 000	\$ ____, ____, ____, 000	\$ ____, ____, ____, 000
b. Depreciation (F:16; C:12 and C:13)	\$ ____, ____, ____, 000	\$ ____, ____, ____, 000	\$ ____, ____, ____, 000
c. Feed purchased (F:18)	\$ ____, ____, ____, 000	\$ ____, ____, ____, 000	\$ ____, ____, ____, 000
d. Fertilizers and lime (F:19)	\$ ____, ____, ____, 000	\$ ____, ____, ____, 000	\$ ____, ____, ____, 000
e. Gasoline, fuel, and oil (F:21)	\$ ____, ____, ____, 000	\$ ____, ____, ____, 000	\$ ____, ____, ____, 000
f. Insurance (other than health; F:22; C:15)	\$ ____, ____, ____, 000	\$ ____, ____, ____, 000	\$ ____, ____, ____, 000
g. Interest—mortgage (F:23a; C:16a)	\$ ____, ____, ____, 000	\$ ____, ____, ____, 000	\$ ____, ____, ____, 000
h. Interest—other (F:23b; C:16b)	\$ ____, ____, ____, 000	\$ ____, ____, ____, 000	\$ ____, ____, ____, 000
i. Labor hired (F:24; C:26)	\$ ____, ____, ____, 000	\$ ____, ____, ____, 000	\$ ____, ____, ____, 000
j. Rent or lease —vehicles, machinery, and equipment (F:26a; C:20a)	\$ ____, ____, ____, 000	\$ ____, ____, ____, 000	\$ ____, ____, ____, 000
k. Rent or lease—land, animals, other (F:26b; C:20b)	\$ ____, ____, ____, 000	\$ ____, ____, ____, 000	\$ ____, ____, ____, 000
l. Repairs & maintenance (F:27; C:21)	\$ ____, ____, ____, 000	\$ ____, ____, ____, 000	\$ ____, ____, ____, 000
m. Taxes (F:31; C:23)	\$ ____, ____, ____, 000	\$ ____, ____, ____, 000	\$ ____, ____, ____, 000
n. Utilities (F:32; C:25)	\$ ____, ____, ____, 000	\$ ____, ____, ____, 000	\$ ____, ____, ____, 000
COMPLETE THE FOLLOWING ONLY IF YOU USE ACCRUAL ACCOUNTING (enter “NA” if you use cash accounting):			
o. Cost of Aquatic Animals Sold — Eggs, Seed, Fry, Fingerlings, Broodfish, etc. (Part of F:50; C:42)	\$ ____, ____, ____, 000	\$ ____, ____, ____, 000	\$ ____, ____, ____, 000

CBI
68. For each of the different species of aquatic animals produced at your farm/facility in 2000, 1999 and 1998, what were the total quantities sold and the associated sales? Fill in the appropriate life cycle and unit codes as described below. If additional space is required, photocopy this page BEFORE writing on it and label each copy in the space provided at the top right corner of the page. **Report sales in dollars; round to the nearest thousand.**

Check box if data are best estimates

Life Cycle Code

- 0 Eggs/Seed/Initial Stock
- 1 Fry
- 2 Fingerlings

- 3 Stockers
- 4 Food-size
- 5 Broodfish/Broodstock

Unit Code

- 1 Pounds live weight
- 2 Number or count
- 3 Pounds per 1,000 fish
- 4 Live dry bushels
- 5 Dozen

Species (see Appendix A for level of detail)	Life Cycle Code	Unit Code	2000 Not in Operation..... <input type="checkbox"/> (Leave columns blank)		1999 Not in Operation..... <input type="checkbox"/> (Leave columns blank)		1998 Not in Operation..... <input type="checkbox"/> (Leave columns blank)	
			Quantity Sold	Sales	Quantity Sold	Sales	Quantity Sold	Sales
_____	___	___	_____,_____,____	\$ _____,_____,000	_____,_____,____	\$ _____,_____,000	_____,_____,____	\$ _____,_____,000
_____	___	___	_____,_____,____	\$ _____,_____,000	_____,_____,____	\$ _____,_____,000	_____,_____,____	\$ _____,_____,000
_____	___	___	_____,_____,____	\$ _____,_____,000	_____,_____,____	\$ _____,_____,000	_____,_____,____	\$ _____,_____,000
_____	___	___	_____,_____,____	\$ _____,_____,000	_____,_____,____	\$ _____,_____,000	_____,_____,____	\$ _____,_____,000
_____	___	___	_____,_____,____	\$ _____,_____,000	_____,_____,____	\$ _____,_____,000	_____,_____,____	\$ _____,_____,000
_____	___	___	_____,_____,____	\$ _____,_____,000	_____,_____,____	\$ _____,_____,000	_____,_____,____	\$ _____,_____,000
_____	___	___	_____,_____,____	\$ _____,_____,000	_____,_____,____	\$ _____,_____,000	_____,_____,____	\$ _____,_____,000
Total			_____,_____,____	\$ _____,_____,000	_____,_____,____	\$ _____,_____,000	_____,_____,____	\$ _____,_____,000

BALANCE SHEET INFORMATION

Questions 69 through 71 request information at the **company** level. If the owner of this farm/ facility does not own additional farms/facilities, then the total farm level is equivalent to the company level. These questions request information on assets and liabilities as they were at the end of the year (December 31) 2000 for your company (or prepared at the total farm level if this is the only farm/facility owned).

<input type="checkbox"/> CBI	
69. Does your farm facility prepare corporate balance sheets?	
NO <input type="checkbox"/> Go to Question 70.	
YES <input type="checkbox"/> Complete the following information for assets and liabilities at the company as they were on December 31, 2000. Report dollar amounts rounded to the nearest thousand. Continue with Question 71 when finished (skip Question 70). If you prefer, you may submit a copy of your December 31, 2000 balance sheet instead of completing the question.	
Check one box: The balance sheet is based on: cost method <input type="checkbox"/> market value method <input type="checkbox"/> not sure <input type="checkbox"/>	
ASSETS	
a. Current assets, excluding inventories (any asset that can reasonably be expected to be used up or converted to cash or sold within year or less, e.g., cash, accounts receivable, prepaid expenses)	\$ ____, ____, ____, 000
b. Inventories (e.g., fish, fingerlings, feed and supplies, etc.) IF YOU USE THE CASH METHOD OF ACCOUNTING, THIS ENTRY WILL BE ZERO.	\$ ____, ____, ____, 000
c. Noncurrent assets (any asset with a life longer than 1 year, e.g., real estate, buildings and improvements, pond system, machinery and equipment, broodstock, and investments in cooperatives)	\$ ____, ____, ____, 000
d. Total assets (sum of a through c)	\$ ____, ____, ____, 000
LIABILITIES	
e. Current liabilities (debts that are payable within 1 year, including accounts payable, notes payable within one year, accrued expenses and taxes, and the portion of long-term debt that you pay this year)	\$ ____, ____, ____, 000
f. Long-term debt (liabilities that are paid off over periods greater than 1 year, including mortgages, notes, bonds, debentures, long-term leases, bank debt, and deferred income taxes)	\$ ____, ____, ____, 000

CBI

70. This question is designed to help you construct balance sheet information. All items should be as your accounts stood on December 31, 2000. EPA does not intend for respondents to hire a professional to help them complete this question. However, EPA believes that it can perform a better economic analysis with best financial estimates rather than no information. As necessary, respondents may call the toll-free Economic Help Line at 1-800-566-7364 for assistance in completing this question. Many of these items are necessary only if you use an **Accrual Method of Accounting**. These items are marked with an asterisk and shaded. If you use a **Cash Method**, you need only fill in those lines that are not shaded and put "NA" in the shaded areas. **Report dollar amounts rounded to the nearest thousand.**

ASSETS

Current Assets

a	Cash on hand	\$ _____,_____,000
b	Checking account balance	\$ _____,_____,000
c	Savings account	\$ _____,_____,000
d	Cash- any short-term investment that can be turned into cash within a year, such as a certificate of deposit, stocks, or bonds	\$ _____,_____,000
*e	Accounts Receivable (amount due from customers in payment for merchandise)	\$ _____,_____,000
*f	Prepaid Rent	\$ _____,_____,000
*g	Prepaid Insurance	\$ _____,_____,000
*h	Prepaid Supplies/Credit at local supplier	\$ _____,_____,000
TOTAL CURRENT ASSETS EXCLUDING INVENTORIES (add items a-h)		\$ _____,_____,000
*i	Livestock-seed/eggs	\$ _____,_____,000
*j	Livestock-fry	\$ _____,_____,000
*k	Livestock-fingerlings	\$ _____,_____,000
*l	Livestock-stockers	\$ _____,_____,000
*m	Livestock-food size	\$ _____,_____,000
*n	Livestock-broodstock	\$ _____,_____,000
*o	Supplies on hand- feed and feed supplements	\$ _____,_____,000
*p	Supplies on hand-medicated feed	\$ _____,_____,000
*q	Supplies on hand-fertilizers	\$ _____,_____,000
*r	Supplies on hand-pesticides/herbicides/insecticides/piscicides	\$ _____,_____,000
*s	Supplies on hand-medicines	\$ _____,_____,000
*t	Supplies on hand-water treatment and cleaning chemicals	\$ _____,_____,000
*u	Supplies on hand-other	\$ _____,_____,000
TOTAL INVENTORIES (add items i-u)		\$ _____,_____,000
Noncurrent Assets		
v	Machinery, Vehicles, and Equipment	\$ _____,_____,000
w	Buildings and Improvements	\$ _____,_____,000

x	Land	\$ _____,_____,000
*y	Investments in Capital Leases	\$ _____,_____,000
*z	Investments in Other Entities	\$ _____,_____,000
*aa	Investments in Cooperatives	\$ _____,_____,000
TOTAL NON-CURRENT ASSETS (add items v–aa)		\$ _____,_____,000
LIABILITIES		
Current Liabilities		
*bb	Outstanding Credit Card balance	\$ _____,_____,000
*cc	Accounts Payable (amounts owed to suppliers)	\$ _____,_____,000
dd	Notes Payable within a year-revolving line of credit	\$ _____,_____,000
ee	Notes Payable within a year-CCC	\$ _____,_____,000
ff	Notes Payable within a year-other	\$ _____,_____,000
gg	Current Portion of Noncurrent Debt- Non-real estate	\$ _____,_____,000
hh	Current Portion of Noncurrent Debt- Real estate	\$ _____,_____,000
*ii	Accrued Interest Payable on Loans	\$ _____,_____,000
*jj	Income Taxes and Social Security Taxes Payable	\$ _____,_____,000
*kk	Payroll Accrual (salaries and wages currently owed)	\$ _____,_____,000
*ll	Other Current Liabilities	\$ _____,_____,000
TOTAL CURRENT LIABILITIES (add items bb–ll)		\$ _____,_____,000
Noncurrent Liabilities		
mm	Notes longer than 1 year (list by outstanding balance less the current portion due)	\$ _____,_____,000
nn	Mortgages (list by outstanding balance less the current portion due)	\$ _____,_____,000
*oo	Noncurrent Portion-Deferred Income and Social Security Taxes	\$ _____,_____,000
TOTAL NONCURRENT LIABILITIES (add items mm–oo)		\$ _____,_____,000

CBI 71. Complete the following table for fiscal year 2000 at the **company** level. Provide best estimates for the percent each industry classification contributes to the facility by sales and total production.

	Industry Classification					Row total
	Finfish aquaculture	Hatchery	Shellfish farming	Other aquatic animal production	Other	
Percent of sales	%	%	%	%	%	100%
Percent of total production (lb. or other units)	%	%	%	%	%	100%

PART B ECONOMIC AND FINANCIAL INFORMATION

In developing effluent guidelines, EPA is required to evaluate the economic impacts of potential additional water pollution control costs to the industry - including both public and private facilities. One element of EPA's economic analysis will be a determination of the proposed regulation's impacts on individual State and Federal facilities.

63. What was the total operating budget for the facility (round to the nearest thousand)?

a. 2000 \$ _____, _____,000

b. 1999 \$ _____, _____,000

c. 1998 \$ _____, _____,000

64. Identify the funding sources

Funding Source	Funding		
	2000	1999	1998
a. Fish and Wildlife Service	\$ __, ____, 000	\$ __, ____, 000	\$ __, ____, 000
b. Agricultural Research Service	\$ __, ____, 000	\$ __, ____, 000	\$ __, ____, 000
c. NOAA Sea Grant	\$ __, ____, 000	\$ __, ____, 000	\$ __, ____, 000
d. Wallop-Breaux revenues	\$ __, ____, 000	\$ __, ____, 000	\$ __, ____, 000
e. State General Revenue Funds (GRF)	\$ __, ____, 000	\$ __, ____, 000	\$ __, ____, 000
f. Direct sale of angler licenses	\$ __, ____, 000	\$ __, ____, 000	\$ __, ____, 000
g. Commercial fishing permits	\$ __, ____, 000	\$ __, ____, 000	\$ __, ____, 000
h. Vanity tags for vehicles	\$ __, ____, 000	\$ __, ____, 000	\$ __, ____, 000
i. Special purpose stamps	\$ __, ____, 000	\$ __, ____, 000	\$ __, ____, 000
j. Sales tax or value-added tax	\$ __, ____, 000	\$ __, ____, 000	\$ __, ____, 000
k. Other: _____	\$ __, ____, 000	\$ __, ____, 000	\$ __, ____, 000
l. Total (Should equal totals in question 63)	\$ __, ____, 000	\$ __, ____, 000	\$ __, ____, 000

65. Identify funding allocations.

Funding Allocation	Amount		
	2000	1999	1998
a. Aquaculture research	\$ __, __, __, 000	\$ __, __, __, 000	\$ __, __, __, 000
b. Artificial propagation (for release or distribution)	\$ __, __, __, 000	\$ __, __, __, 000	\$ __, __, __, 000
c. Fisheries research	\$ __, __, __, 000	\$ __, __, __, 000	\$ __, __, __, 000
d. Education/outreach	\$ __, __, __, 000	\$ __, __, __, 000	\$ __, __, __, 000
e. Habitat restoration	\$ __, __, __, 000	\$ __, __, __, 000	\$ __, __, __, 000
f. Regulation (developing, implementing, and enforcing fisheries regulations)	\$ __, __, __, 000	\$ __, __, __, 000	\$ __, __, __, 000
g. Management	\$ __, __, __, 000	\$ __, __, __, 000	\$ __, __, __, 000
h. Other: _____	\$ __, __, __, 000	\$ __, __, __, 000	\$ __, __, __, 000
i. Total (Should equal totals in question 64)	\$ __, __, __, 000	\$ __, __, __, 000	\$ __, __, __, 000

66. Identify recipients of fish and egg distribution (Check all that apply).

Recipients	✓	Recipients	✓
a. Air Force		o. National Park Service	
b. Army		p. National Resources Conservation Services	
c. Bureau of Indian Affairs (BIA)		q. Private-commercial purposes	
d. Bureau of Land Management		r. Private-restoration purposes	
e. Bureau of Reclamation		s. Private-other _____	
f. Corps of Engineers		t. Public restoration purposes	
g. Department of Justice		u. State government	
h. Forest Service		v. TVA	
i. Indian Tribal (non BIA)		w. U.S. Fish and Wildlife Service	
j. Interjurisdictional waters		x. U.S. Geological Survey	
k. International		y. University	
l. Local government		z. Veterans Administration	
m. Navy		aa. Other _____	
n. National Marine Fisheries			

CBI 67. For each of the different species of aquatic animals produced and sold at your facility in 2000, 1999 and 1998, what were the total sales and quantities of production sold? Do not include production used for distribution or transfers in kind. Fill in the appropriate life cycle, and unit codes as described below. If additional species spaces are required, photocopy this page BEFORE writing on it and label each copy in the space provided at the top right corner of the page. Report sales in dollars; round to the nearest thousand. Check box if data are best estimates

Life Cycle Code			Unit Code		
0 Eggs/Seed/Initial Stock	3 Stockers	1 Fry	4 Foodsize	1 Pounds live weight	4 Live dry bushels
2 Fingerlings	5 Broodfish/Broodstock			2 Number or count	5 Dozen
				3 Pounds per 1000 fish	

Species (see Appendix B for level of detail)	Life Cycle Code	Unit Code	2000 Not in Operation..... <input type="checkbox"/> (Leave columns blank)		1999 Not in Operation..... <input type="checkbox"/> (Leave columns blank)		1998 Not in Operation..... <input type="checkbox"/> (Leave columns blank)	
			Quantity Sold	Sales	Quantity Sold	Sales	Quantity Sold	Sales
_____	___	___	____,____	\$____,____,000	____,____	\$____,____,000	____,____	\$____,____,000
_____	___	___	____,____	\$____,____,000	____,____	\$____,____,000	____,____	\$____,____,000
_____	___	___	____,____	\$____,____,000	____,____	\$____,____,000	____,____	\$____,____,000
_____	___	___	____,____	\$____,____,000	____,____	\$____,____,000	____,____	\$____,____,000
_____	___	___	____,____	\$____,____,000	____,____	\$____,____,000	____,____	\$____,____,000
_____	___	___	____,____	\$____,____,000	____,____	\$____,____,000	____,____	\$____,____,000
_____	___	___	____,____	\$____,____,000	____,____	\$____,____,000	____,____	\$____,____,000
Total			____,____	\$____,____,000	____,____	\$____,____,000	____,____	\$____,____,000

CBI **68. For each of the different species of aquatic animals produced and distributed or transferred from your facility in 2000, 1999 and 1998, what were the total quantities and estimated market value? Do not include production that was sold.** Fill in the appropriate life cycle, unit, and type codes as described below. Although you may not routinely keep market value data for distributed or transferred production, please estimate a value of that production. If additional species spaces are required, photocopy this page BEFORE writing on it and label each copy in the space provided at the top right corner of the page. **Report estimated market value in dollars; round to the nearest thousand.**

Check box if data other than market value are best estimates

Life Cycle Code				Unit Code				Type Code	
0 Eggs/Seed/Initial Stock		3 Stockers		1 Pounds live weight		4 Live dry bushels		D Distributed	
1 Fry		4 Foodsize		2 Number or count		5 Dozen		T Transfers in kind	
2 Fingerlings		5 Broodfish/Broodstock		3 Pounds per 1000 fish					

Species (see Appendix B for level of detail)	Life Cycle Code	Unit Code	Type Code	2000 Not in Operation..... <input type="checkbox"/> (Leave columns blank)		1999 Not in Operation..... <input type="checkbox"/> (Leave columns blank)		1998 Not in Operation..... <input type="checkbox"/> (Leave columns blank)	
				Quantity Produced for Distribution/Transfer	Estimated Market Value	Quantity Produced for Distribution/Transfer	Estimated Market Value	Quantity Produced for Distribution/Transfer	Estimated Market Value
_____	__	__	__	____/____/____	\$____,000	____/____/____	\$____,000	____/____/____	\$____,000
_____	__	__	__	____/____/____	\$____,000	____/____/____	\$____,000	____/____/____	\$____,000
_____	__	__	__	____/____/____	\$____,000	____/____/____	\$____,000	____/____/____	\$____,000
_____	__	__	__	____/____/____	\$____,000	____/____/____	\$____,000	____/____/____	\$____,000
_____	__	__	__	____/____/____	\$____,000	____/____/____	\$____,000	____/____/____	\$____,000
_____	__	__	__	____/____/____	\$____,000	____/____/____	\$____,000	____/____/____	\$____,000
_____	__	__	__	____/____/____	\$____,000	____/____/____	\$____,000	____/____/____	\$____,000
Total				____/____/____	\$____,000	____/____/____	\$____,000	____/____/____	\$____,000

PART B ECONOMIC AND FINANCIAL INFORMATION

In developing effluent guidelines, EPA is required to evaluate the economic impacts of potential additional water pollution control costs to the industry - including both public and private facilities. One element of EPA's economic analysis will be a determination of the proposed regulation's impacts on individual academic / research facilities.

- CBI 63.** What was the total operating budget for your aquaculture facility (or department if budget is kept only at that level) (round to the nearest thousand)
- a. **2000** \$ ____, ____, 000 Check one: Facility Department
- b. **1999** \$ ____, ____, 000 Check one: Facility Department
- c. **1998** \$ ____, ____, 000 Check one: Facility Department
- CBI 64.** Identify the funding sources.

Funding Source	Base Funding			Grant Funding
	2000	1999	1998	2000
a. National Marine Fisheries Service (NMFS)	\$ ____, ____, 000	\$ ____, ____, 000	\$ ____, ____, 000	\$ ____, ____, 000
b. National Oceanic and Atmospheric Administration (NOAA)- State Sea Grant	\$ ____, ____, 000	\$ ____, ____, 000	\$ ____, ____, 000	\$ ____, ____, 000
c. National Science Foundation	\$ ____, ____, 000	\$ ____, ____, 000	\$ ____, ____, 000	\$ ____, ____, 000
d. USDA / Agricultural Research Service (ARS)	\$ ____, ____, 000	\$ ____, ____, 000	\$ ____, ____, 000	\$ ____, ____, 000
e. USDA / Cooperative State Research, Education, and Extension Service (CSREES) Marine Shrimp Farming Program	\$ ____, ____, 000	\$ ____, ____, 000	\$ ____, ____, 000	\$ ____, ____, 000
f. USDA /CSREES Regional Aquaculture Center	\$ ____, ____, 000	\$ ____, ____, 000	\$ ____, ____, 000	\$ ____, ____, 000
g. U.S. Fish and Wildlife Service	\$ ____, ____, 000	\$ ____, ____, 000	\$ ____, ____, 000	\$ ____, ____, 000
h. U.S. Geological Survey- Biological Resources Division	\$ ____, ____, 000	\$ ____, ____, 000	\$ ____, ____, 000	\$ ____, ____, 000
i. Other Federal Agency: _____	\$ ____, ____, 000	\$ ____, ____, 000	\$ ____, ____, 000	\$ ____, ____, 000
j. State Department of Natural Resources or equivalent	\$ ____, ____, 000	\$ ____, ____, 000	\$ ____, ____, 000	\$ ____, ____, 000

k. State Fish and Game Department	\$ __, __, __, 000	\$ __, __, __, 000	\$ __, __, __, 000	\$ __, __, __, 000
l. State General Revenue Funds (GRF)	\$ __, __, __, 000	\$ __, __, __, 000	\$ __, __, __, 000	\$ __, __, __, 000
m. Other State Agency: _____	\$ __, __, __, 000	\$ __, __, __, 000	\$ __, __, __, 000	\$ __, __, __, 000
n. College / University operations	\$ __, __, __, 000	\$ __, __, __, 000	\$ __, __, __, 000	\$ __, __, __, 000
o. Corporate grants	\$ __, __, __, 000	\$ __, __, __, 000	\$ __, __, __, 000	\$ __, __, __, 000
p. Individual donations	\$ __, __, __, 000	\$ __, __, __, 000	\$ __, __, __, 000	\$ __, __, __, 000
q. Trade groups	\$ __, __, __, 000	\$ __, __, __, 000	\$ __, __, __, 000	\$ __, __, __, 000
r. Sales (facility-raised product)	\$ __, __, __, 000	\$ __, __, __, 000	\$ __, __, __, 000	\$ __, __, __, 000
s. Other: _____	\$ __, __, __, 000	\$ __, __, __, 000	\$ __, __, __, 000	\$ __, __, __, 000
t. Total (Should equal totals in question 63)	\$ __, __, __, 000	\$ __, __, __, 000	\$ __, __, __, 000	\$ __, __, __, 000

CBI 65. Identify funding allocations.

Funding Allocation	Amount		
	2000	1999	1998
a. Aquaculture Research	\$ __, __, __, 000	\$ __, __, __, 000	\$ __, __, __, 000
b. Artificial Propagation (for release or distribution)	\$ __, __, __, 000	\$ __, __, __, 000	\$ __, __, __, 000
c. Fisheries Research	\$ __, __, __, 000	\$ __, __, __, 000	\$ __, __, __, 000
d. Education/Outreach	\$ __, __, __, 000	\$ __, __, __, 000	\$ __, __, __, 000
e. Habitat Restoration	\$ __, __, __, 000	\$ __, __, __, 000	\$ __, __, __, 000
f. Administration	\$ __, __, __, 000	\$ __, __, __, 000	\$ __, __, __, 000
g. Other: _____	\$ __, __, __, 000	\$ __, __, __, 000	\$ __, __, __, 000
h. Total (Should equal totals in question 64)	\$ __, __, __, 000	\$ __, __, __, 000	\$ __, __, __, 000

CBI 66. For each of the different species of aquatic animals produced and sold at your facility in 2000, 1999 and 1998, what were the total sales and quantities of production sold? Do not include production used for distribution or transfers in kind. Fill in the appropriate life cycle, and unit codes as described below. If additional species spaces are required, photocopy this page BEFORE writing on it and label each copy in the space provided at the top right corner of the page. Report sales in dollars; round to the nearest thousand. Check box if data are best estimates

Life Cycle Code			Unit Code		
0 Eggs/Seed/Initial Stock	3 Stockers		1 Pounds live weight	4 Live dry bushels	
1 Fry	4 Foodsize		2 Number or count	5 Dozen	
2 Fingerlings	5 Broodfish/Broodstock		3 Pounds per 1000 fish		

Species (see Appendix B for level of detail)	Life Cycle Code	Unit Code	2000 Not in Operation..... <input type="checkbox"/> (Leave columns blank)		1999 Not in Operation..... <input type="checkbox"/> (Leave columns blank)		1998 Not in Operation..... <input type="checkbox"/> (Leave columns blank)	
			Quantity Sold	Sales	Quantity Sold	Sales	Quantity Sold	Sales
_____	___	___	___/___/___	\$___,___,000	___/___/___	\$___,___,000	___/___/___	\$___,___,000
_____	___	___	___/___/___	\$___,___,000	___/___/___	\$___,___,000	___/___/___	\$___,___,000
_____	___	___	___/___/___	\$___,___,000	___/___/___	\$___,___,000	___/___/___	\$___,___,000
_____	___	___	___/___/___	\$___,___,000	___/___/___	\$___,___,000	___/___/___	\$___,___,000
_____	___	___	___/___/___	\$___,___,000	___/___/___	\$___,___,000	___/___/___	\$___,___,000
_____	___	___	___/___/___	\$___,___,000	___/___/___	\$___,___,000	___/___/___	\$___,___,000
_____	___	___	___/___/___	\$___,___,000	___/___/___	\$___,___,000	___/___/___	\$___,___,000
Total			___/___/___	\$___,___,000	___/___/___	\$___,___,000	___/___/___	\$___,___,000

CBI 67. For each of the different species of aquatic animals produced and distributed or transferred from your facility in 2000, 1999 and 1998, what were the total quantities and estimated market value? Do not include production that was sold. Fill in the appropriate life cycle, unit, and type codes as described below. Although you may not routinely keep market value data for distributed or transferred production, please estimate a value of that production. If additional species spaces are required, photocopy this page BEFORE writing on it and label each copy in the space provided at the top right corner of the page. **Report estimated market value in dollars; round to the nearest thousand.**

Check box if data other than market value are best estimates

Life Cycle Code				Unit Code				Type Code	
0 Eggs/Seed/Initial Stock		3 Stockers		1 Pounds live weight		4 Live dry bushels		D Distributed	
1 Fry		4 Foodsize		2 Number or count		5 Dozen		T Transfers in kind	
2 Fingerlings		5 Broodfish/Broodstock		3 Pounds per 1000 fish					
Species (see Appendix B for level of detail)	Life Cycle Code	Unit Code	Type Code	2000		1999		1998	
				Not in Operation..... <input type="checkbox"/> (Leave columns blank)		Not in Operation..... <input type="checkbox"/> (Leave columns blank)		Not in Operation..... <input type="checkbox"/> (Leave columns blank)	
				Quantity Produced for Distribution/ Transfer	Estimated Market Value	Quantity Produced for Distribution/ Transfer	Estimated Market Value	Quantity Produced for Distribution/ Transfer	Estimated Market Value
_____	___	___	___	_,_.,_.,_.	\$_,_.,_.,_.,000	_,_.,_.,_.	\$_,_.,_.,_.,000	_,_.,_.,_.	\$_,_.,_.,_.,000
_____	___	___	___	_,_.,_.,_.	\$_,_.,_.,_.,000	_,_.,_.,_.	\$_,_.,_.,_.,000	_,_.,_.,_.	\$_,_.,_.,_.,000
_____	___	___	___	_,_.,_.,_.	\$_,_.,_.,_.,000	_,_.,_.,_.	\$_,_.,_.,_.,000	_,_.,_.,_.	\$_,_.,_.,_.,000
_____	___	___	___	_,_.,_.,_.	\$_,_.,_.,_.,000	_,_.,_.,_.	\$_,_.,_.,_.,000	_,_.,_.,_.	\$_,_.,_.,_.,000
_____	___	___	___	_,_.,_.,_.	\$_,_.,_.,_.,000	_,_.,_.,_.	\$_,_.,_.,_.,000	_,_.,_.,_.	\$_,_.,_.,_.,000
_____	___	___	___	_,_.,_.,_.	\$_,_.,_.,_.,000	_,_.,_.,_.	\$_,_.,_.,_.,000	_,_.,_.,_.	\$_,_.,_.,_.,000
_____	___	___	___	_,_.,_.,_.	\$_,_.,_.,_.,000	_,_.,_.,_.	\$_,_.,_.,_.,000	_,_.,_.,_.	\$_,_.,_.,_.,000
Total				_,_.,_.,_.	\$_,_.,_.,_.,000	_,_.,_.,_.	\$_,_.,_.,_.,000	_,_.,_.,_.	\$_,_.,_.,_.,000

PART C CERTIFICATION

Where to Return the Survey

After completing the survey and certifying the information that it contains, use the enclosed mailing label to mail the completed survey to:

U.S. Environmental Protection Agency
Collection of 2000 Aquatic Animal Production Industry Data
c/o Tetra Tech, Inc.
10306 Eaton Place, Suite 340
Fairfax, VA 22030

Retain a copy of the completed survey, including attachments. EPA will review the information submitted and may request your cooperation in answering follow-up questions, if necessary, to complete its analyses.

CERTIFICATION STATEMENT 1

I certify under penalty of law that the enclosed survey response was prepared under my direction or supervision in accordance with a system designed to ensure that qualified personnel properly gathered and evaluated the information submitted. The information submitted is, to the best of my knowledge and belief, accurate and complete. In those cases where we did not possess the requested information, we provided best technical and financial estimates in response to the questions. We have, to the best of our ability, indicated what we believe to be company confidential business information as defined under 40 CFR Part 2, Subpart B. We understand that we may be required at a later time to justify our claim in detail with respect to each item claimed confidential. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment, as explained in Section 308 of the Clean Water Act.

Signature of Certifying Official

Date

Printed Name of Certifying Official

()
Telephone Number

Title of Certifying Official

CERTIFICATION STATEMENT 2

I certify under penalty of law that this site does not engage in aquatic animal production. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment, as explained in Section 308 of the Clean Water Act.

If you are certifying that your site is not engaging in aquatic animal production, indicate the classification of your site:

- Processor
- Consultant
- Resale of aquatic animals, including wholesale, retail, fish brokers, distributors, etc.
- Transporter
- Other (please specify) _____

Signature of Certifying Official

Date

Printed Name of Certifying Official

()

Telephone Number

Title of Certifying Official

APPENDIX A
SPECIES LIST

Use the lists below to identify the species or aquatic animal product produced at your facility. The name to be used in the survey is given in bold with examples in regular text.

FIN FISH

- Bass** (Largemouth, Smallmouth)
- Bullhead** (Black)
- Carp** (Common, Grass)
- Catfish** (Channel, Blue, Flathead)
- Crappie** (Black, White)
- Goldfish, feeder**
- Goldfish, ornamental**
- Koi** (Ornamental Carp)
- Minnow** (Fathead)
- Other endangered species**
- Ornamental/tropical fish not otherwise specified** (Cichlids)
- Perch** (Yellow)
- Pike** (Northern, Tiger Muskie, Muskellunge)
- Salmon** (Atlantic, Chum, Coho, Chinook)
- Shad** (American)
- Shiner** (Golden, other baitfish)
- Sport or game fish not otherwise specified**
- Striped Bass** (Striped, White, Hybrid Striped)
- Sturgeon** (Atlantic, Lake, Pallid, Shortnose, Shovelnose)
- Sunfish** (Bluegill, Pumpkinseed, Redbreast, Green, Orange Spotted)
- Tilapia**
- Trout** (Apache, Brook, Brown, Cutthroat, Gila, Lanhontan Cutthroat, Lake, Rainbow)
- Walleye** (Sauger, Saugeye)

CRUSTACEANS

- Crawfish**
- Shrimp**
- Softshell Crabs**
- Other Crustaceans**

MOLLUSKS

- Clams**
- Mussels**
- Oysters**
- Other Mollusks**

OTHER ANIMAL AQUACULTURE

- Alligators**
- Frogs (not wild catch)**
- Turtles**
- Other Animal**