DEVELOPMENT OF SUSTAINABLE AQUACULTURE PRACTICES OF MARINE CAGE CULTURE OPERATIONS IN THE U.S. CARIBBEAN WORKSHOP

U.S. ENVIRONMENTAL PROTECTION AGENCY

REGION 2, NEW YORK

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San Juan, Puerto Rico

Major Components of a Permit

- **Cover Page:**
  1. name
  2. location
  3. statement authorizing the discharge
  4. listing of the specific locations for which a discharge is authorized.

- **Effluent Limitations:** effluent limitations on the basis of applicable technology and water quality standards.

- **Monitoring and Reporting Requirements:** evaluate wastewater treatment efficiency (Aquaculture facility), and determine compliance with permit conditions.

- **Special Conditions:** additional monitoring activities, special studies, best management practices (BMPs), and compliance schedules.

- **Standard Conditions:** apply to all NPDES permits.

ALSO: a fact sheet or statement of basis explaining the rationale for permit conditions

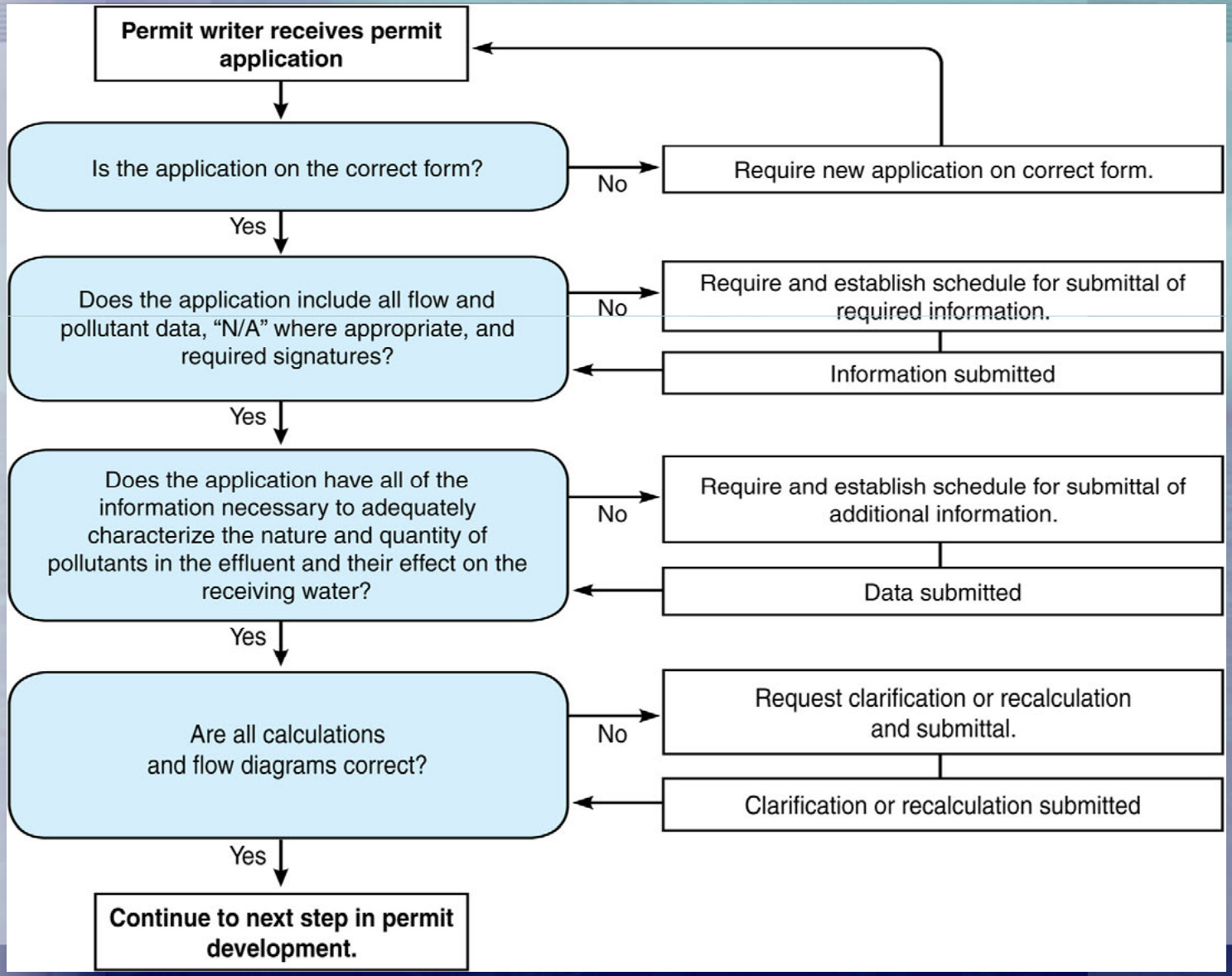
EPA application requirements for NPDES individual permits

Type of facility or program area	Status	Forms	Regulatory citations and additional application requirements (40 CFR)
Concentrated aquatic animal production facilities	New and existing	Form 1 and Form 2B	§ 122.21(a)(2)(i)(A) and (C) § 122.21(f) and (i)

Form 2B: Concentrated Aquatic Animal Production (CAAP) Facilities

- The maximum daily and average monthly flow from each outfall.
- The number of ponds, raceways, and similar structures.
- The name of the receiving water and the source of intake water.
- For each species of aquatic animals, the total yearly and maximum harvestable weight.
- The calendar month of maximum feeding and the total mass of food fed during that month.

General Process For Reviewing A Permit Application



Confidential Information

EPA has determined that the following information will not be held confidential (§ 122.7):

- Name and address of the applicant.
- Permit applications and information submitted with applications.
- Permits.
- Effluent data.

Any claims of confidentiality must be made at the time of submission or the information will not be

EPA-issued NPDES permit for a new source is a federal action subject to the requirements of the National Environmental Policy Act (NEPA), 33 U.S.C. 1371(c)(1).

EPA-issued permits to new sources are subject to NEPA's environmental review procedures before permit issuance.

To All Interested Government Agencies and Public Groups:

In accordance with the U.S. Environmental Protection Agency's (EPA) procedures for the preparation of environmental impact statements (EIS), an environmental review has been performed on the proposed agency action below:

- **Project Name**: **Ocean Harvest Aquaculture Inc. (OHAI), NPDES Permit for New Source Discharge from an Offshore Concentrated Aquatic Animal Production Facility**

- **Purpose of Project**: OHAI's proposed facility is intended to offset a small part of the seafood demand in Puerto Rico, other Caribbean Islands and the United States mainland. OHAI's goals also include expanding the understanding of cobia as an open-ocean aquaculture species, and developing new technologies that could potentially be applied to other commercially important marine fish species. OHAI would also be contributing to the achievement of the National Oceanic and Atmospheric Administration's (NOAA) efforts to promote offshore aquaculture in the exclusive economic zone (EEZ) to reduce pressure on natural fisheries.

- **Project Originator**: Ocean Harvest Aquaculture Inc., Humacao, P.R. 00791

- **Project Location**: The offshore portion of the project is approximately 2 miles into the Caribbean Sea off the coast of Punta Guayanes, coordinates (WGS84 datum): 18.054983° N 65.771083° W. The onshore portion of the project is at Yabucoa Harbor, adjacent to the Old Union Carbide trans-shipment structure and dock in Puerto Rico.

- **Project Description**: OHAI proposes to construct and operate a commercial- scale, open-ocean aquaculture production facility and land-based hatchery and operations facility along the southeastern shoreline of Puerto Rico.

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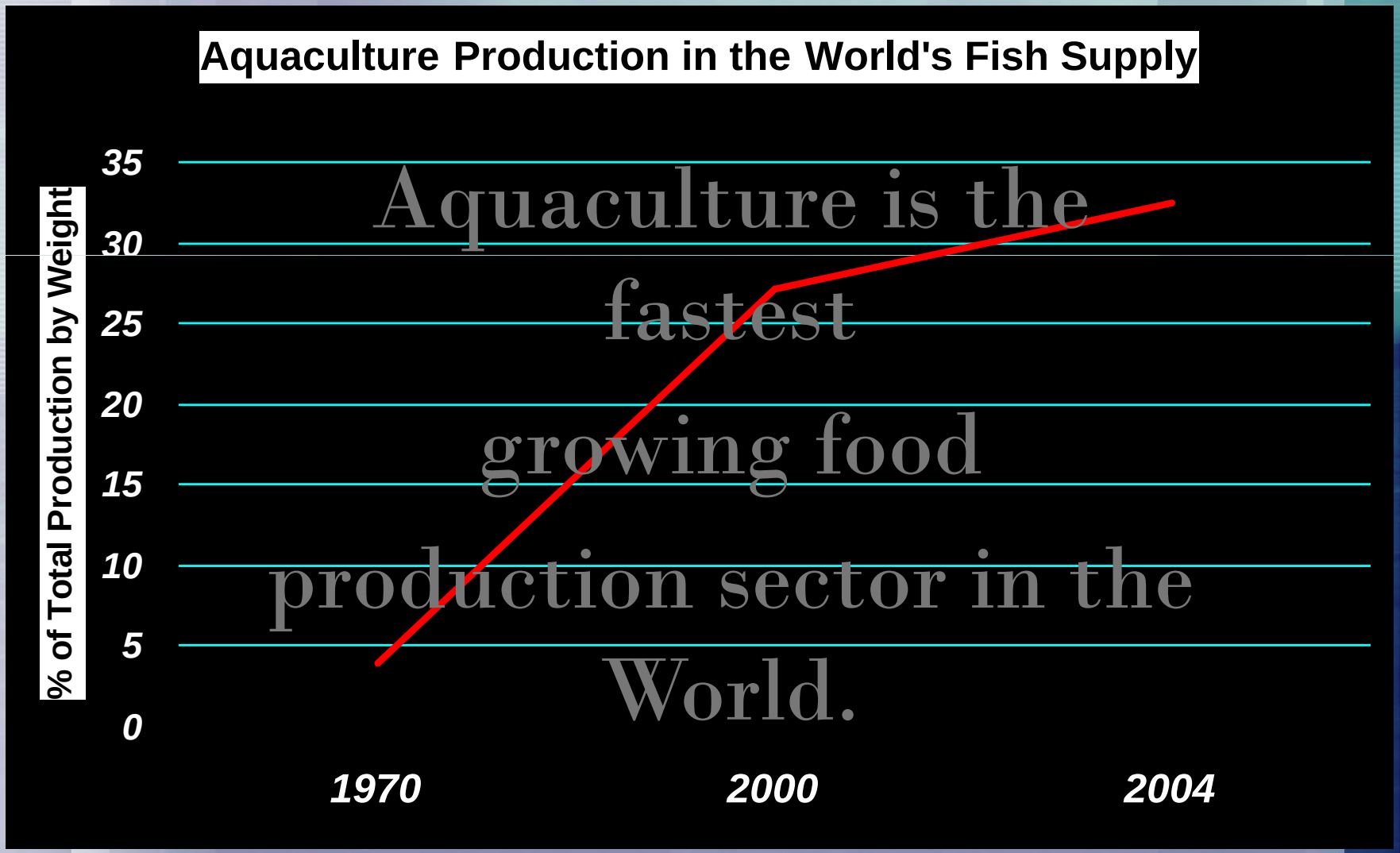
REGION 2 EA

Environmental Assessment

NPDES Permit for New Source Discharge from an Offshore Concentrated Aquatic Animal Production Facility

Prepared pursuant to National Environmental Policy Act, 42 USC 4322, CEQ Regulations for Implementing NEPA, 40 CFR 1500, & EPA Regulations for Implementing NEPA, 40 CFR 6

Aquaculture Facts:



Aquaculture is the fastest growing food production sector in the World.

Develop an Organics Sedimentation Monitoring Protocol for Cage Aquaculture Operations in the Caribbean Sea with Emphasis on Assessment on Ocean Acidification and Nutrient Impact

“DOS MPCA OCSEA OANI”

U.S. EPA / Region 2 / Office of Research and Development
FY’09 Regional Applied Research Effort Proposal

Maria R. Clark

Objectives:

- **Determine whether operation of an aquaculture facility results in changes to the ocean floor ecosystem.**
- **Consistently measure ocean acidification and nutrient impacts of aquaculture projects.**
- **Make aquaculture more environmentally sustainable.**

Outcomes:

- **Data for use in the NPDES permit renewal process (adaptive management) and other ecosystem studies.**
- **Standardized monitoring protocol for ocean acidification and nutrient impacts.**

Approach:

- **Develop an MOA among involved entities, specifying roles and responsibilities**
- **Measure**
  - **Organic matter deposition rate**
  - **Biological oxygen demand**
  - **Bottom-water oxygen point & time series measurement**
  - **Health of benthic infauna & epifauna communities**
  - **Nutrients, phytoplankton biomass, and light attenuation**
  - **pH, phosphorus, ammonia**
  - **Current velocities and magnitudes**
- **Develop draft protocol**
- **Test draft protocol**
- **Share final protocol with other Regions**