Response to Significant Comments

Ocean Era, Inc. - Velella Epsilon
Net Pen Aquaculture Facility
Federal Waters of the Gulf of America

Modified National Pollutant Discharge Elimination System Permit Number
FL0A00001

NEPA Environmental Assessment Identification Number
904-P-19-001

May 15, 2025

U.S. Environmental Protection Agency
Region 4
Water Division
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List of Acronyms

BMP	Best Management Practices
BE	Biological Evaluation
CFR	Code of Federal Regulations
CHLA	Chlorophyll-a
CMP	Coastal Management Plan
CWA	Clean Water Act
CZMA	Coastal Zone Management Act
EA	Environmental Assessment
EAB	Environmental Appeals Board
EEZ	Exclusive Economic Zone
EFH	Essential Fish Habitat
EPA	Environmental Protection Agency Region 4
ESA	Endangered Species Act
FDA	Food and Drug Administration
FDACS	Florida Department of Agriculture and Community Services
FDPC	Facility Damage Prevention and Control
FDEP	Florida Department of Environmental Protection
FAD	Fish Attraction Device
FWC	Florida Fish and Wildlife Conservation Commission
FWCA	Fish and Wildlife Conservation Act
Gulf	Gulf of America / Gulf of Mexico
HAB	Harmful Algae Bloom
LOC	Letter of Concurrence
MMPA	Marine Mammal Protection Act
MSA	Magnuson-Stevens Fishery Conservation and Management Act
NEPA	National Environmental Protection Act
NMFS	National Marine Fisheries Service
NHPA	National Historic Preservation Act
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NLAA	Not Likely to Adversely Affect
ODC	Ocean Discharge Criteria
ODCE	Ocean Discharge Criteria Evaluation
RHA	Rivers and Harbors Act
RTC	Response to Comments
SHPO	State Historic Preservation Officer
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
VE	Velella Epsilon
WOTUS	Waters of the United States

1 Introduction, Federal Coordination, and Permit Decision

1.1 Introduction

The U.S. Environmental Protection Agency Region 4 (EPA) issued a National Pollutant Discharge Elimination System (NPDES) permit to Ocean Era in 2020. Multiple petitioners sought review of the NPDES permit before EPA's Environmental Appeals Board (EAB). On May 6, 2022, the EAB issued a decision that remanded in part and denied review in part for the permit appeal. In response to the EAB decision, EPA revised the permit record and issued a final permit on June 9, 2022. The permit issued in 2022 (the 2022 permit) remains effective for Clean Water Act (CWA) purposes.

On October 24, 2024, the EPA released for public notice and comment a draft modified NPDES permit and other associated documents for the modified project. The public comment period lasted for 30-days and ended on November 25, 2024. The public was able to submit comments in writing to EPA.

1.2 Federal Coordination

The proposed federal actions are the issuance of permits under the respective authorities of the EPA and the USACE as required to operate the facility. The EPA's proposed action is the issuance of a modified NPDES permit that authorizes the discharge of pollutants from an aquatic animal production facility that is considered a point source into federal waters of the United States. The USACE's proposed action is the issuance of a Department of Army Standard Permit pursuant to Section 10 of the Rivers and Harbors Act (RHA) that authorizes anchorage to the sea floor and structures affecting navigable waters.[1]

Given that the facility authorized to discharge by the modified NPDES permit remains subject to multiple federal actions, EPA elected to maintain the lead federal agency roles for Endangered Species Act (ESA),[2] the Essential Fish Habitat (EFH) provisions of the Magnuson-Stevens Act,[3] and the Fish and Wildlife Coordination Act (FWCA). The USACE was a co-federal agency for each consultation process and jointly developed the consultation documents to satisfy the EPA's and USACE's authorization obligations. This consultation coordination allowed the permitting agencies to create one consultation record for the entire proposed project, rather than submitting separate consultation requests to the NMFS and USFWS, thereby streamlining the process for the federal actions and consultation agencies.

Additionally, EPA elected to act as the lead agency for any necessary changes to the Environmental Assessment (EA) under the National Environmental Policy Act (NEPA). NMFS and USACE were cooperating agencies under NEPA due to their jurisdiction by law and special expertise with respect to any environmental impact involved in

[1] The proposed action requires the issuance of a USACE Department of the Army (DA) permit pursuant to Section 10 of the Rivers and Harbors Act approved March 3, 1899, (33 U.S.C. 403). Pursuant to 33 CFR 320.2(b), Section 10 prohibits the unauthorized obstruction or alteration of any navigable water of the United States (U.S.). The construction of any structure in or over any navigable WOTUS, the excavating from or depositing of material in such waters, or the accomplishment of any other work affecting the course, location, condition, or capacity of such waters is unlawful unless the work has been recommended by the Chief of Engineers and authorized by the Secretary of the Army. The instrument of authorization is designated a permit. The authority of the Secretary of the Army to prevent obstructions to navigation in navigable waters of the United States was extended to construction of artificial islands, installations, and other devices located on the seabed, to the seaward limit of the outer continental shelf, by section 4(f) of the Outer Continental Shelf Lands Act of 1953 as amended (43 U.S.C. 1333(e)). See 33 CFR part 322.3(b).

[2] 50 CFR 402.07 allows a lead agency: "When a particular action involves more than one Federal agency, the consultation and conference responsibilities may be fulfilled through a lead agency. Factors relevant in determining an appropriate lead agency include the time sequence in which the agencies would become involved, the magnitude of their respective involvement, and their relative expertise with respect to the environmental effects of the action. The Director shall be notified of the designation in writing by the lead agency."

[3] 50 CFR 600.920(b) allows a lead agency: "If more than one Federal agency is responsible for a Federal action, the consultation requirements of sections 305(b)(2) through (4) of the Magnuson-Stevens Act may be fulfilled through a lead agency. The lead agency should notify NMFS in writing that it is representing one or more additional agencies."

a proposed project as allowed under 40 Code of Federal Regulations (CFR) 1508.5.[4] Both agencies provided scientific expertise and support in their areas of expertise and jurisdiction, and were involved in making a determination that modifying the EA was not necessary under the NEPA implementing regulations. NEPA requires EPA to respond to all substantive comments received on the EA (40 CFR 6.206(f)); however, the EA was not revised for the modified NPDES permit.[5]

The NMFS and USACE were provided an opportunity to review this Response to Comments (RTC) specific to issues within the purview of their agency and/or permitting processes. This RTC document presents EPA's responses to significant public comments received on the draft modified NPDES permit, fact sheet, and modification rationale. EPA has addressed or responded to all significant issues raised during the public comment period.

1.3 EPA's Permit Decision

A draft permit contains the information described in 40 CFR 124.6 and is accompanied by the documents referenced under 40 CFR 124.6. The draft permit indicates EPA's tentative decision to issue a modified permit and is based on the administrative record used to support EPA's decisions related to the draft permit. After consideration of all comments received for the draft modified NPDES permit, the requirements under the CWA, and other appropriate regulations, EPA made a final decision to issue a modified NPDES permit.

[4] 40 CFR 1508.5: Cooperating agency means any Federal agency other than a lead agency which has jurisdiction by law or special expertise with respect to any environmental impact involved in a proposal (or a reasonable alternative) for legislation or other major Federal action significantly affecting the quality of the human environment. The selection and responsibilities of a cooperating agency are described in 1501.6. A State or local agency of similar qualifications or, when the effects are on a reservation, an Indian Tribe, may by agreement with the lead agency become a cooperating agency.

[5] The NPDES permit at issue is exempt from NEPA requirements, but EPA elected to voluntarily prepare an environmental assessment of impacts and alternatives in accordance with its Policy for Voluntary Preparation of NEPA Documents, 63 FR 58045 (Oct. 29, 1998).

2 Revisions Made to the Draft NPDES Permit and Supporting Documents

2.1 Response to Comment Summary

EPA received less than 200 written comments from interested individuals and national, regional, and local non-governmental organizations.[6] In accordance with 40 CFR 124.17, EPA must create a RTC document at the time of the final permit decision and make it available to the public. The RTC is required to have certain information: 1) it must specify any provisions of the draft permit that have been changed in the final permit and the reason for the change; and 2) it must briefly describe and respond to all significant comments on the draft permit and supporting documents raised during the public comment period including the public hearing.

When a NPDES permit is modified, only the conditions that are modified are reopened for public comment when a modified draft permit is prepared. All other aspects of the currently effective permit remain in effect for the duration of the unmodified permit. EPA solicited comments from the public on the revised conditions of draft modified permit and the administrative record that was prepared to support the draft modified NPDES permit. Given that a NPDES permit for this facility was previously issued during 2022, only comments that are related to the revised conditions within the draft modified permit are considered in this RTC pursuant to 40 CFR 122.62. EPA did receive many comments that relate to the 2022 permit but do not relate to the revised conditions in the draft modified permit. Our responses to those comments simply note that those comments are outside the scope of the modified permit conditions.

The RTC document is organized by the comments received from each interested party. Excerpts from all comments received were copied and included herein with limited edits (e.g., footnotes were removed if provided). All comments were considered and are included in the NPDES permit administrative record.

2.2 Changes to the Draft Permit and Fact Sheet

Gulf of Mexico was changed to Gulf of America pursuant to Executive Order 14172 ("Restoring Names that Honor American Greatness"). Minor typographical errors were corrected within the draft and final permit record. In addition, the modified permit contains five revisions compared to the currently effective permit:

1. the maximum fish production level has been reduced from 88,000 lbs to 55,000 lbs on the cover page of the draft permit;
2. the cultured fish species (red drum) has been included in Part II.A of the permit;
3. effluent monitoring for total copper has been removed from Table 1 of Permit Part II.A.1 in light of the permittee's decision to use a material other than copper for the net pen;
4. a provision clarifying that the intentional or negligent release of produced fish is prohibited has been included in Permit Part II.B.15; and
5. a condition was added to Part II.B.16 to require the permittee to conduct and provide to EPA a site-specific dynamic analysis of the SeaProtean pen and mooring system at least 60-days prior to installation of any equipment. No other substantive revisions were made to the draft modified permit based on the comments received during the public notice period.

2.3 Changes to the Modification Justification Memorandum

The modification justification memorandum contains the rationale for modifying the permit and explains how the modification complies with various laws and regulations. The modification justification memorandum was revised to include information that developed after the draft permit modification was public noticed. EPA

[6] Commenting entities included: Friends of Animals, Don't Cage Our Oceans, Healthy Gulf, Sierra Club Florida, Center for Food Safety, Food and Water Watch, Recirculating Farms, GreenJustice, Suncoast Waterkeeper, Animal Legal Defense Fund, Sanibel-Captiva Conservation Foundation, Siesta Key Association, and Siesta Key Condominium Council.

updated information within the memo regarding compliance with the ESA, FWCA, Coastal Zone Management Act (CZMA), and Marine Mammal Protection Act (MMPA). These revisions were not made because of any comment made during the public notice period, rather, the record was updated to reflect new information that was developed between the draft permit public notice and the final modified permit. The Gulf of Mexico was changed to Gulf of America pursuant to Executive Order 14172 ("Restoring Names that Honor American Greatness"). Minor typographical errors were corrected within the draft and final memo.

2.4 Changes to Consultation and Environmental Review Information

Supporting documents were created during the process of issuing the 2022 permit and modified permit to document interagency consultations and environmental reviews to comply with EPA's implementing regulations and other statutory obligations. Decisions related to these consultations and reviews for the modified permit are documented in the final permit record. The following information summarizes any revisions to the consultation record between the draft modified and final modified permit action.

- ESA: After the draft modified permit was public noticed, EPA and USACE reinitiated expedited informal consultation with NMFS under ESA Section 7. The final permit record contains the updated information regarding ESA consultation.
- Essential Fish Habitat (EFH): The EFH consultation record was not revised between the draft and final permit.
- FWCA: EPA initiated consultation with NMFS under the FWCA after the draft modified permit was public noticed. The final permit record contains the updated information regarding ESA consultation.
- National Historic Preservation Act (NHPA): The NHPA consistency record was not revised after the draft modified permit was public noticed.
- CZMA: EPA received concurrence from FDEP regarding CZMA after the draft modified permit was public noticed. The final permit record contains the updated information from the State of Florida regarding CZMA.
- National Environmental Policy Act (NEPA): The EA that accompanied the 2022 permit was not revised. The reasons for not revising or supplementing the EA are included in the final permit record.

3 Responses to Comments from Friends of Animals

3.1 EPA failed to address the conservation concerns and applicable regulations imposed by both federal and state entities

Comment: In EPA's analysis supporting the draft modified permit, EPA failed to consider the impacts of breeding red drum who have been "caught in the Gulf of Mexico in the Sarasota region." All of the fish raised in the VE facility will be offspring from wild-caught fish. EPA should have analyzed the effects of catching wild fish as part of issuing this NPDES permit. These effects could include additional vessel traffic, increased, and accidental bycatch (including ESA-listed species who reside in the area). However, it is currently unknown how dangerous and impactful these effects will be, because EPA did not include any such analysis in its support documentation. This is a violation of NEPA's requirement to analyze "reasonably foreseeable environmental effects."

Of course, even if this species had no protection and were plentiful in the Gulf of Mexico, NEPA would still require EPA to conduct this analysis. But that is not the case. There are federal and state protections that limit the catch of red drum in the area where Ocean Era seeks to collect them. The protections described below make it even more important that EPA consider the potential effects of taking red drum.

Due to severe overfishing of red drum, the United States prohibited any directed commercial harvest of the species in 1986. In 2007, President Bush issued a presidential order directing the Secretary of Commerce to create regulations that "include prohibiting the sale of striped bass and red drum caught within the Exclusive Economic Zone [EEZ] of the United States off the Atlantic Ocean and the Gulf of Mexico."

Currently, federal regulations prohibit harvesting or even possession of red drum from the Gulf of Mexico EEZ. In fact, the regulations state that any red drum "caught in the Gulf EEZ must be released immediately with a minimum of harm." While the regulations contemplate issuing permits for "a dealer to . . . receive Gulf red drum harvested in or from the EEZ," there is not one mention of this permit, whether it has been issued, or any environmental analysis of the effects of issuing such a permit in this situation. The 2023 management for red drum makes this crystal clear when it states that "All EEZ waters in the U.S. Gulf of Mexico are closed for Red Drum and harvest is prohibited to commercial fishermen and recreational anglers."

Yet, EPA states that the "red drum brood stock will be sourced from wild fish caught in the Gulf of Mexico in the Sarasota region." Red drum raised for slaughter in the VE facility will be sourced from offspring of red drum commercially caught in the Gulf EEZ, in apparent violation of federal regulations. While regulations contemplate a license to receive red drum, no such license was mentioned or discussed in EPA's analysis.

State-level regulations further prohibit what Ocean Era plans to do, and EPA also failed to consider this. Presumably, Ocean Era or its surrogates will be extracting red drum from the Gulf of Mexico at a greater level than "1 fish per person per day; 2 fish vessel limit," which the Florida Fish and Wildlife Conservation Commission has set as the limit for the Sarasota region.

EPA has thus not taken a "hard look" at how authorizing this NPDES permit modification (1) violates federal regulations that prohibit the commercial taking of red drum directly from the Gulf EEZ, or (2) how Ocean Era will abide by Florida's catch limits.

Again, even assuming that the capture of red drum from the Gulf EEZ complies with both federal and state law, EPA did not analyze the environmental effects of extracting this protected species from the wild. This failure directly contrasts with NEPA's requirements to analyze all reasonably foreseeable effects. EPA should not issue this permit before analyzing all of the environmental effects of the proposed project.

Response: NPDES permits authorize the discharge of pollutants from point sources into waters of the United States; NPDES permits do not regulate the management of fisheries within these waters. EPA does not have input on the type of fish that is cultured within the aquaculture facility by a permittee. EPA acts upon the information received by the permittee in the NPDES application. Impacts on the Red Drum fishery, however, are considered in connection with the NMFS and state consultations and NEPA review.

Red drum, as well as the cultured fish species authorized in the 2022 permit (almaco jack), are State federally managed fish in the Gulf of America. The red drum fishery in the Gulf of America is regulated by NMFS under the Magnuson-Stevens Fishery Conservation and Management Act (MSA). EPA developed an EFH assessment and conducted an EFH consultation under MSA with NMFS for the 2022 permit. On September 25, 2024, EPA requested guidance from NMFS about whether a supplemental EFH consultation is necessary for the modified project. On September 25, 2024, NMFS determined that the proposed revisions to the facility would only have minimal effects on marine fishery resources, no EFH conservation recommendations were necessary, and that a supplemental EFH consultation is not necessary.

On October 24, 2024, EPA provided the draft modified permit to multiple State of Florida agencies - FDEP's Florida State Clearinghouse, FDEP's NPDES program, and the Florida Department of Agriculture and Consumer Services (FDACS) - to allow these agencies to provide comments on the modified aquaculture project. The Florida State Clearinghouse reviewed the project under multiple authorities: Presidential Executive Order 12372; § 403.061(42), Florida Statutes; the CZMA, 16 USC §§ 1451-1464; and NEPA, 42 USC §§ 4321-4347. On December 16, 2024, the Florida State Clearinghouse documented that "the State has no objections to the subject project."

In accordance with the implementing regulations for NEPA, EPA and USACE evaluated, in coordination with NMFS, whether a supplemental EA was necessary within the memo. It was determined that the changes to the modified federal action and new circumstances relevant to environmental concerns do not indicate the potential for significant effects and therefore do not require a supplement. In this connection, we note that this relatively small facility will only operate for a single production cycle.

With respect to the commenters concern regarding Red Drum catch limits, wild harvest regulations (commercial and recreational) are not applicable to the collection of a limited number of fish for aquaculture broodstock purposes. State and/or federal permits to collect aquaculture broodstock exempt individuals from those regulations and are evaluated on a case-by-case basis. The applicant would have to comply with any applicable state or Federal regulations if the collection of broodstock was necessary.

3.2 EPA failed to sufficiently analyze the likelihood of parasites and diseases in red drum, the resulting need for therapeutants, and the corresponding threats therein.

Comment: More than 30 families of marine fish are susceptible to parasites such as iridovirus, which causes lymphocystis disease, and red drum "are no exception." The scientific literature available regarding red drum susceptibility to diseases demonstrates that several parasites (*Amyloodinium,*

Trichodina, and *Ambiphrya*), bacterial infections (*Vibrio, Aeromonas, Cytophaga columnaris*, and *Eubaterium tarantellus*), and fungus (*Saprolegnia*) can occur in red drum cultivation.

Somehow, even though red drum represents an entirely new species from the previously planned amberjack species, "Ocean Era is not proposing any changes to the drugs or therapeutants used during fish production." It is illogical for Ocean Era to rely on the same therapeutic regime for an entirely new species. In its analysis, EPA failed to meaningfully analyze the expected use of pharmaceuticals, antibiotics, or other therapeutants at the VE facility. Basing the likelihood of pathogens entirely on the words of Ocean Era, EPA merely re-states Ocean Era's assertion that "red drum are naturally more tolerant to skin flukes." EPA does not analyze the likelihood of any other disease common among red drum and the corresponding likelihood that Ocean Era will need to use pharmaceuticals.

This lack of analysis conflicts with the Gulf of Mexico Fishery Management Council's management profile for red drum. As stated there, "Red Drum carry numerous infections and parasites both internally and externally from a wide variety of vectors that lead to a broad spectrum of diseases. Infections may affect the brain, skin, fins, digestive tract, and other internal organs." In fact, the management profile lists 16 bacterial infections, 3 viral infections, 11 parasites, and 18 worms, and 14 copepods that can affect red drum. Yet, among this broad spectrum, only skin flukes were mentioned in EPA's analysis.

Currently, "Ocean Era does not intend to use therapeutants for the modified action, but use of therapeutants is authorized." Simply put, there is no reason to believe that the VE facility will be entirely free from therapeutants. The lack of analysis, or even mentioning, of a single pathogen other than skin flukes, shows how little EPA looked at this possibility.

This is no small failure, either, as pharmaceuticals and related maladies implicate all three federal statutes at issue here. Under NEPA, this is a clear failure to take a "hard look" at the effects, as EPA does not even consider what impacts are likely to occur from the use of therapeutants.

Under the CWA, an NPDES permit should not be issued without ensuring that no unreasonable degradation will occur. In assessing whether a discharge will cause unreasonable degradation of the marine environment, the director must make the determination based on consideration of ten specific factors. This is a lose-lose situation for the Gulf of Mexico. If the VE facility discharges therapeutants and antibiotics into the ocean, that will likely cause unreasonable degradation. Conversely, if chemicals are not used to control parasites and other diseases, the introduction of parasites will implicate multiple of these factors of unreasonable degradation.

For example, factor number two lists the "potential transport of such pollutants by biological, physical, or chemical processes." Transport of parasites or antibiotics could easily be spread from the facility to native red drum or other species through the net pen system. Factor number three requires the director to consider the "vulnerability of the biological communities" of the receiving waters, including "species identified as endangered or threatened pursuant to the Endangered Species Act." The Gulf of Mexico and its biological communities are already vulnerable: a 2023 study from NOAA found that "all species in the Gulf of Mexico" will experience high or very high exposure to climate-driven change." The study further found that 48% of the species were moderately vulnerable, highly vulnerable, or very highly vulnerable. This factor too suggests that the VE facility will cause unreasonable degradation, as the species in the area are already vulnerable. Even a relatively small amount of disease proliferation or therapeutants added to the Gulf of Mexico could affect vulnerable species. Factor number six, potential impacts on human health, is also a concern with this project. If parasites or diseases spread to wild populations, humans could easily consume tainted fish or invertebrates who are affected by the

pathogens. Likewise, antibiotic resistance due to the use of therapeutants is already a threat to human health, and we simply don't need another pathway for more drug-resistant pathogens to spread.

Together, these three factors suggest that the discharges from the VE facility will qualify under all three factors of the regulatory definition of "unreasonable degradation," including significant adverse changes in the ecosystem; threats to human health; and loss of esthetic, recreational, scientific or economic values."

EPA has not looked at how this new species, and the likely requirements of therapeutants involved, would affect the marine environment. Even if Ocean Era can control the spread of parasites and diseases via the use of therapeutants, the negative impacts of the therapeutants themselves have likewise not been analyzed by EPA.

Lastly, under the ESA, EPA must ensure that issuing the NPDES permit is "not likely to jeopardize the continued existence of any endangered or threatened species or adversely affect its critical habitat." Without analyzing further the possibility of parasites or infections, EPA cannot say that this action won't jeopardize one of the numerous endangered and threatened species in the area by dumping antibiotics and other therapeutants into the water. Additionally, the spread of disease remains likely. As a baseline, captive aquaculture systems negatively impact the health of the fish within the system, causing an overall decrease in health and immune responses. Stress from the initial transfer and increased noise from vessels further impacts fish immune systems. This baseline, combined with a net pen system specifically designed to have water flow through it, means that the spread of disease is very likely. Wild red drum are particularly susceptible, as some parasites and diseases are species-specific. However, any of the dozens of potential pathogens that affect red drum also affect other fish species. Lastly, the possibility of a fish escape event significantly raises the chance that any disease in the net pen will spread beyond the control of EPA or Ocean Era.

The lack of significant analysis for parasites and other diseases represents a gross failure by EPA to abide by federal law. EPA should not issue the permit without conducting an analysis of parasites and infections in red drum.

Response: Regarding the comments related to pathogens, almaco jack, the fish authorized under the 2022 permit, and red drum are wild fish species native to the Gulf of America. The cultured red drum will be the first-generation progeny from wild caught fish in the Gulf of America. Red drum and almaco jack are susceptible to many of the same pathogens.[7] EPA evaluated the direct and indirect potential impacts from pathogens and parasites in the 2022 permit record, and the analysis regarding such risks presented by raising almaco jack is generally relevant to raising red drum species. EPA also responded to comments related to the discharge of pathogens in the 2022 permit's RTC document, and the potential impact from pathogens and parasites is not significantly altered by the change in species in the modified permit.

Additionally, the 2022 permit and modified permit requires Ocean Era to follow specific best management practices (BMPs) for fish health management to prevent and minimize the transfer of pathogens. The implemented BMPs must include fish inspection, fish sampling, or a fish monitoring program to allow for early detection of potential fish pathogens. This could include sampling wild fish near the facility to provide a reference of potential parasites that could cause infection. Ocean Era must

[7] Patrick, G. 2019. Health and disease management of Almaco Jack (*Seriola rivoliana*) [Master's Thesis]. University of Florida. Available at: < https://original-ufdc.uflib.ufl.edu/UFE0056202/00001 >

develop BMPs that are facility-specific, and must be reviewed and approved by EPA prior to the commencement of discharge.

Regarding the drug related comments, EPA considered the discharge of pharmaceuticals the 2022 permit record. For example, EPA assessed drug usage in the 2022 permit's ODC evaluation and concluded that the NPDES permit conditions will ensure no significant environmental impacts and that the discharges from the facility will not cause unreasonable degradation of the marine environment. Furthermore, the use of drugs was contemplated for the modified action in EPA's memo and within the expedited informal consultation that was reinitiated under ESA Section 7 and FWCA.

Ocean Era indicated that FDA-approved antibiotics will not likely be used during the proposed project due to the strong currents expected at the proposed action area. The need for drug treatment is mitigated by the strong open ocean currents that will constantly flush the fish culture area, operational practices such as regular maintenance and cleaning of the cage, the anti-biofouling properties of the net mesh material,[8] and the lack of nearby aquaculture facilities that can spread diseases and pathogens. Additionally, the risk of disease transmission is mitigated by a NPDES permit condition that requires a health certificate from a licensed veterinarian prior to stocking to ensure that the fish are healthy and free from certain pathogens and diseases.

In the event that therapeutants are used, the NPDES permit has conditions that will protect the marine environment: 1) administration of drugs will be performed under the control of a licensed veterinarian; 2) the environmental monitoring plan requires the use of any medicinal products including therapeutics, antibiotics, and other treatments are to be reported to the EPA; 3) reporting requirements include the types and amounts of medicinal product used and the duration it was used; 4) all drugs, pesticides, and other chemicals must be applied in accordance with label directions; and 5) the permit includes a prohibition on causing unreasonable degradation to the marine environment.

3.3 The net pen construction raises additional entanglement and oceanic pollution concerns.

Comment: The modified NPDES permit seeks to authorize the use of a polyethylene terephthalate monofilament (KikkoNet) for the net pen instead of woven copper alloy wire, which was the material authorized in the original permit.

As with the analysis of parasites, EPA simply defers, without conducting any analysis of its own, to Ocean Era's assertions: "Ocean Era reported that there is no functional difference between the two cage materials in terms of entanglement risk or other concerns." But EPA cannot simply rely on the permit applicant in issuing a NPDES permit; EPA must conduct its own analysis.

According to the National Oceanic and Atmospheric Administration (NOAA), "entanglement of marine life is a global problem that results in the death of hundreds of thousands of marine mammals and sea turtles worldwide every year." Around the world, waste monofilament from fishing entangles these animals, often slowly killing them by preventing them from swimming, foraging, or defending themselves against predators.

[8] One study found that the biofouling properties of Kikkonet were greater than braided nylon but less than copper alloy mesh, likely due to the smooth surface of monofilament which reduces the available surface area for biological community settlement.
Lowell, J.M.S. 2012. Effect of netting materials on fouling and parasite egg loading on offshore net pens in Hawaii. Final Report, Blue Ocean Mariculture (2012), pp. 1-5. < https://internationalcopper.org/wp-content/uploads/2017/05/Trematode-Study.pdf >

For example, when monofilament line entangles bottlenose dolphins—as one study demonstrated specifically in the Gulf of Mexico—this led to starvation, systemic infections, and debilitation from severe tissue damage, pain and distress, and in some cases, death. In that study, the dolphin at issue was even disentangled by a multi-agency team yet died only a couple years later. The study concluded that damage to breathing and eating abilities contributed to the animal's "failure to thrive."

Another study, this time focusing on sea turtles, mentions at least three ESA-protected species who became wounded by marine debris entanglement. After noting that marine debris ingestion and entanglement "have caused morbidity and mortality in multiple marine species, including all seven species of sea turtles," the study showed what great lengths are necessary to attempt to save an entangled animal. Some combination of radiography, ultrasonography, and endoscopy were necessary to save the life of the sea turtles in question. Without such an intensive and invasive procedure, the turtles would have died.

When sea turtles become entangled, the material cuts into their bodies, making it difficult to swim and potentially leading to suffering and death. This raises serious concerns for the five ESA-listed sea turtle species which are found in the vicinity of the VE facility: green turtle, hawksbill turtle, leatherback turtle, Kemp's ridley turtle, and loggerhead turtle. Sadly, entanglements involving sea turtles are so common that NOAA maintains a "Sea Turtle Disentanglement Network" specifically to address this problem. NOAA states that "entanglements may prevent the recovery of endangered and threatened sea turtle populations."

Even enormous marine mammals such as whales are at risk: "Entanglement is considered a primary cause of human-caused mortality in many whale species, especially right whales, humpback whales, and gray whales."

The amount of monofilament line in U.S. waters has already spurred NOAA to provide grants for programs such as Boat U.S. Foundation's fishing line recycling program. EPA must do proper environmental analysis on the effects of adding additional monofilament into the sensitive Gulf of Mexico on the environment, wildlife, and compliance with federal statutes.

Additionally, EPA has stated that instead of biodegrading, plastic waste often breaks down into tiny pieces known as microplastics (less than 5 mm in size), which are nearly impossible to clean up once they are in the environment. Microplastics can contain or absorb toxic chemicals potentially presenting toxicological risks for organisms that ingest them. When aquatic organisms eat these plastic particles, microplastics – and the chemicals they carry – can make their way up the food chain. In fact, researchers have found microplastics in a variety of the fish and shellfish that people consume.

EPA has submitted a draft NPDES permit with this net modification included, yet somehow failed to analyze the effects of this new netting material, including entanglements and microplastics. This represents yet another way in which the VE facility will constitute unreasonable degradation of the marine environment. As mentioned above, unreasonable degradation has three regulatory definitions. Qualifying for any one of these definitions means unreasonable degradation exists. Risks from entanglements and microplastics meet at least two of these definitions. Entanglements threaten a wide variety of species, including fish, sea turtles, marine mammals, and birds, the killing of which would cause "significant adverse changes in ecosystem diversity, productivity, and stability." Meanwhile, microplastics are already known to bioaccumulate in fish, with one meta-study showing that 60% of fish worldwide had microplastics in them. This means that the VE facility, as an additional source of microplastics, represents a "threat to human health" through consumption of fish.

This lack of analysis of entanglement and pollution also violates NEPA. EPA failed to take a hard look at reasonably foreseeable effects from the use of the new net pen material, notably entanglements and pollution.

The increased risk of entanglement is likely to jeopardize numerous ESA-listed animals, in violation of the ESA. Several ESA-listed species reside in the vicinity of the VE facility, including fish (smalltooth sawfish, giant manta ray, and oceanic whitetip shark), marine mammals (manatees, sperm whales, Rice's whale, Atlantic spotted dolphin, and common bottlenose dolphin), sea turtles (green sea turtle, hawksbill, Kemp's ridley, leatherback, and loggerhead), and birds (piping plover and red knot).

All of these species can be killed or negatively impacted by the threat of entanglements. These species are attracted to aquaculture facilities both due to the high concentration of fish in the net pen and/or due to the resulting fish who aggregate around the facility. Much like the sea turtles described above, entanglements threaten all of these species by making it more difficult to eat, swim, escape predators, and by opening up the possibility of infections from wounds caused by entanglement or ingestion of hooks and other debris.

It is up to EPA to ensure that its actions do not jeopardize ESA-listed animals, and it has not done so here.

Response: The risk of entanglement from the revised cage material, additional cable and anchors, material and marine debris was considered in EPA's final modification justification memorandum, and within the reinitiated consultation with NMFS for ESA and FWCA. On December 23, 2024, EPA reinitiated an expedited informal consultation under FWCA and ESA Section 7 based on new information that became available from Ocean Era making modifications to the aquaculture facility. EPA and USACE determined that the modifications to the proposed activity are "not likely to adversely affect" some species and critical habitats, and have "no effect" to other species or critical habitats that are relevant to the proposed action under ESA in the action area. On February 18, 2025, NMFS issued an ESA concurrence letter that stated, "the proposed action is not likely to adversely effect the NMFS ESA-listed species and/or designated critical habitat." On February 18, 2025, NMFS also determined under the FWCA that adverse effects that might occur on marine and anadromous fishery resources would be minimal and NMFS did not object the issuance of the permit under FWCA.

Regarding the comments received about ocean pollution related to microplastics, a "marine aquaculture monofilament net microplastic" refers to tiny plastic particles that are released into the marine environment when a plastic gear used in aquaculture degrades over time. For example, the small plastic fibers from the breakdown of net fibers can contribute to microplastic pollution within the aquaculture area and wider ocean ecosystem. To help mitigate the risk of microplastic pollution from the proposed facility, Ocean Era has proposed to regularly monitor the strength of the net pen material and measure the width of the netting. When any netting is measured to be less than 1.4 mm due to degradation or material elongation, the fish will be removed, and the net pen will be retired. Net pen material replacement is unlikely given the short duration (~1-year) of cage deployment. The short duration of the facility within federal waters, replacement of net material as necessary, and the large amount of dilution available in the Gulf of America adequately mitigates any risk of microplastics.

The use of Kikkonet netting material instead of copper alloy mesh may introduce plastic particles into the marine environment due to the natural wear and tear of the mesh netting over time. While the

Kikkonet mesh is known to be very durable for extended periods of time, there is the potential for some amount of wear and tear which may lead to plastic leaching into the water column. However, due to the durability of the netting, regular netting inspections, and the short time span of the project (only 1 year), the effects from natural wear and tear of the KikkoNet to ESA-listed species is expected to be insignificant. On February 18, 2025, NMFS issued an ESA concurrence letter that stated, "the proposed action is not likely to adversely effect the NMFS ESA-listed species and/or designated critical habitat." On February 18, 2025, NMFS also determined that under the FWCA that adverse effects that might occur on marine and anadromous fishery resources would be minimal and NMFS did not object the issuance of the permit under FWCA.

3.4 The baseline environmental conditions of the Gulf of Mexico, which have changed since EPA last conducted its analysis of the Permit, indicate that the VE facility is likely to lead to unreasonable degradation and jeopardize threatened and endangered species.

Comment: As EPA itself admits, "[c]limate change is happening." The Summer of 2023 was Earth's hottest summer on record, and several of the other hottest years have occurred in the last decade. Climate change is thus a reality, and EPA must analyze its effects. Somehow, the word "climate" does not appear once in EPA's analysis document.

Common impacts of climate change include more frequent and intense floods, droughts, heat waves, and extreme cold events such as what NOAA called "The Great Texas Freeze." In fact, it was the latter event which caused Ocean Era's hatchery partner to suffer a power failure, causing the "total loss of the conditioned almaco jack broodstock." Ocean Era intends to use this same hatchery for its red drum broodstock.

With climate change continuing, "hurricanes will become stronger and more intense." This could be seen in 2024, as multiple massive hurricanes struck Florida within two weeks of each other. In fact, 2024 is now tied for the year with the most hurricanes to make landfall in Florida. And while climate change may not lead to more frequent hurricanes, hurricanes are already getting more powerful and dangerous.

This presents several issues that EPA should analyze in conjunction with the modified NPDES permit. For starters, a hurricane could wreak havoc on the VE facility, causing it to unmoor or break open, and allowing fish to escape. EPA's statement that "the [incidental] release of red drum due to fish escapes is not authorized under the current permit" does nothing to ensure that fish escapes won't occur.

Living organisms are pollutants under the CWA's definition of biological materials. Under the CWA, EPA must affirmatively find that any of the VE facility's discharges will not cause unreasonable degradation of the marine environment. Yet that is exactly what would occur if a fish escape were to happen, and issuing this NPDES permit is likely to result in a fish escape. Climate change makes it more likely that such an event will occur, and that any hurricane will intensify more rapidly, limiting the response time to avoid catastrophe.

Similarly, the VE facility will rely on land-based remote operations. Because extreme hot, cold, or flooding events are more likely with continuing climate change, this makes it more likely that the land-based operations will be unable to fully control the VE facility 45 miles out in the ocean. Whether it is the raising/lowering of the net pen due to storms, automated feeding systems, or other "best practices" to avoid pollution and comply with the NPDES permit, climate change has the potential to throw a wrench in any of these processes. EPA must analyze climate change's potential to affect this project, rather than ignore climate change altogether in its analysis.

Lastly, climate change in general will continue to negatively impact the Gulf of Mexico. In one 2023 study, NOAA found that the waters of the Gulf of Mexico have increased at double the rate of the global ocean between 1970 and 2020. An unprecedented heat wave in July 2023 "caus[ed] unprecedented heat stress conditions in the Caribbean Basin, including waters surrounding Florida and in the Gulf of Mexico."

As it gets warmer, the Gulf will continue to be a more sensitive body of water. Specifically, climate change will also exacerbate HABs. EPA has known about this connection for a long time. In 2013, an EPA fact sheet admitted that "much of the evidence presented in this fact sheet suggests that the problem of harmful algal blooms may worsen under future climate scenarios." Since then, including since EPA last conducted analysis on this issue, climate change has continued, and more studies have linked climate change with HABs. For example, a study from 2020 that EPA has not mentioned found that "HABs display expansion in range and frequency in response to climatic and non-climatic drivers."

A 2023 study conclusively linked climate change to the rise in cyano-HABs, a subset of HABs. That study found that warming waters increased both the frequency and intensity of cyano-HABs. Another study released just this year found that the combination of increased discharge of nutrients coupled with climate change, "significantly affects the growth, species composition, toxin production, and toxicity of HAB-forming species." This study specifically mentioned nutrients such as nitrogen and phosphorous fuel HABs, which are the main nutrients the VE facility will discharge.

A 2023 review of climate change's impact specifically on the Gulf of Mexico found that climate change "is poised to exacerbate impacts of coastal eutrophication" in the Gulf of Mexico. Eutrophication just means an overabundance of nutrients in the water, and all sources agree this fuels HABs. In fact, "[m]any of the fundamental elements that regulate algal development, such as water temperature, nutrients, light, and grazers, are controlled by climate." Another study has shown that, new HAB-causing species have become more prominent in the Gulf of Mexico in the last decade, and stated that that "improved identification of HAB species" is needed in the Gulf of Mexico. Collectively, this portrays an enormous threat that, while already existing, is exacerbated both by continuing climate change and the additional nutrients discharged by the VE facility. EPA should analyze these impacts before issuing the current NPDES permit.

Another 2023 study by NOAA found that "[a]ll species in the Gulf of Mexico are projected to experience high or very high exposure to climate-driven change in environmental variables." Almost half (48%) of species are moderately or highly vulnerable. Warmer waters can negatively impact factors such as population growth rate, early life stage survival, and spawning. This means that any pollution from the VE facility is discharging into an already highly-sensitive body of water.

Given that climate change has changed baseline conditions, it is much more likely that pollution from the VE facility will trigger HABs that jeopardize threatened and endangered species in the Gulf of Mexico. HABs usually result in "massive fish kills, deaths of marine mammals and seabirds, and alteration [i.e., degradation] of marine" environments. The phytoplankton that comprise these HABs release a toxin, stab other organisms with their shells, or deplete dissolved oxygen in the water, causing marine animals to suffocate. Animals who don't reside in the water, such as seabirds, can become sick and die due to ingesting contaminated fish. EPA should ensure that these effects of climate change and increased threats from HABs are taken into consideration before issuing the modified permit.

Response: Climate change and extreme whether events were considered in the 2022 permit record. The potential impact of HABs was considered in many documents for the 2022 permit (see the EA, ODC

evaluation, RTC, and BE) and the 2022 letter of concurrence (LOC) from NMFS. When comparing the project authorized in the 2022 permit to the project authorized under the modified permit, the potential for nutrient related contribution to HABs from the revised project is less because it will contribute less nitrogen load (28%) and phosphorus load (40%) due to culturing substantially less fish (a maximum of 55,000 lbs vs 80,000 lbs).

The 2022 EA considered the potential impacts of the proposed project on climate and how extreme weather and hurricanes could impact the project (see EA section 5.4.6). As correctly referenced by the commenter, the NPDES permit requires a facility-specific plan that minimizes the potential for the facility to be damaged during a storm-event and cause significant impact to the environment. Specifically, the permittee will be required to create facility specific BMPs, and a facility damage prevention and control (FDPC) plan, to ensure the facility is being operated and maintained to mitigate environmental impacts during any disaster and prevent the release of commercial aquatic animals. Requiring mitigation in the permit is an appropriate way to lower the level of significance of the action due to extreme weather events. The EPA is acting on an NPDES permit application, and including appropriate permit conditions, in accordance with applicable CWA requirements and implementing regulations. The USACE, a cooperating agency on the EA, may also require RHA Section 10 permit conditions that may mitigate climate change impacts from the proposed operation.

Although the comment cites to post-permit information relating to climate change, the climate issues raised by the commenter do not relate to the changes effected by the permit modification. The permit modification does not extend the 2022 permit's five-year term or its limitation to one production cycle, so there is no increased permit term, and no increase in nutrient discharge, that would warrant a new consideration of climate-based changes to baseline-conditions. Climate change considerations were adequately considered in the 2022 permit record.

3.5 The permit should be revoked, and that EPA should not issue a modified permit, because the VE facility will act as a fish-aggregating device, raising numerous concerns for ESA-listed species.

Comment: EPA did not fully consider the significant threats that the VE facility poses as a fish-aggregating device (FAD). EPA acknowledged that the VE facility will attract marine life and generate increased traffic by acting as a FAD. This means that many species, including ESA-listed species, will congregate near the facility. Furthermore, as Ocean Era has touted in the past, recreational and sports fishers will congregate around the facility due to the FAD causing a concentration in fish. Often, fishers will construct their own FADs to take advantage of this phenomenon, going so far as to construct biodegradable FADs.

FADs present multiple concerns. First, ESA-listed animals are likely to become entangled or injured by the net pen and mooring system. Second, ESA-listed animals could be struck by either Ocean Era vessels or recreational vessels attracted to the grouping of fish. Lastly, these recreational vehicles could easily catch or harm ESA-listed animals who happen to be in the area.

The VE facility will still act as FAD under the proposed modification. The associated concerns remain and are exacerbated by the additional entanglement and oceanic pollution concerns related to the use of a polyethylene terephthalate monofilament (KikkoNet) for the net pen, as discussed above.

Response: This comment does not appear to raise any concern related to the changes to the permit described in the draft modification, but is a repeat of concerns raised in connection with the 2022 permit. The USACE Section 10 permit does not authorize the use of the proposed mooring system as a

FAD and the installation will be limited to an 18-month maximum deployment cycle within any Section Permit issued. However, potential adverse impacts from the facility functioning as a FAD are considered in consultations and reviews in connection with other statutes such as the ESA and NEPA. Interactions with marine mammals, birds, and other wildlife are considered and discussed in the EA. Based on literature reviewed relating to aquaculture operations and FADs, the majority of the research has focused on listed species and marine mammals. It is reasonable to assume that native fish will be attracted to the pen system; however, EPA has received no evidence though our analysis, consultations, and public input that leads us to conclude that the VE project will have a significant impact on native fish or other marine species because of the facility functioning as a FAD.

Following the final NPDES permit issuance in 2022, NMFS issued a LOC that amended the consultation record to add a late-arriving action agency and to include additional relevant information related to the project's potential impacts. Among other additional considerations, the LOC included an additional analysis on the potential effects of the aquaculture facility acting as a FAD that could lead to behavioral changes, increased predation, and increased bycatch. Because all potential project effects to listed species were found to be extremely unlikely to occur, NMFS reiterated their concurrence with the EPA and USACE assessment that the proposed action is not likely to adversely affect any listed species or designated critical habitat. The LOC did not change NMFS's determination that the Ocean Era project is not likely to adversely affect any listed or proposed species or designated or proposed critical habitat.

Additionally, fish aggregation was considered in EPA's modification justification memorandum, and within the reinitiated ESA and FWCA consultation with NMFS. On December 23, 2024, EPA reinitiated an expedited informal consultation with NMFS under FWCA and ESA Section 7 based on new information that became available from Ocean Era making modifications to the aquaculture facility. EPA and USACE determined that the modifications to the proposed activity are "not likely to adversely affect" some species and critical habitats, and would have "no effect" for other species or critical habitats that are relevant to the proposed action under ESA in the action area. On February 18, 2025, NMFS issued an ESA concurrence letter that stated, "the proposed action is not likely to adversely effect the NMFS ESA-listed species and/or designated critical habitat." On February 18, 2025, NMFS also determined that under the FWCA that adverse effects that might occur on marine and anadromous fishery resources would be minimal and NMFS did not object the issuance of the permit under FWCA.

3.6 The permit should be revoked, and that EPA should not issue a modified permit, because the VE facility will likely contribute to more intense and more frequent harmful algal blooms.

Comment: Harmful algal blooms (HABs) can be incredibly destructive events, decimating local wildlife of all types and causing respiratory issues for humans. These HABs already form and bloom off the coast of Florida. Excess nutrients such as nitrogen and phosphorous feed these HABs, and that is exactly what the VE facility will dump into the ocean. Nitrogen and phosphorous mainly come from excess fish feed and fish waste that flow through the pen.

EPA even stated that HABs in southwestern Florida are "on the rise in frequency, duration, and intensity in the gulf," and that HABs generally start offshore and make their way inland. The additional fuel that the VE facility will provide to HABs in the form of nitrogen and phosphorus only makes this threat worse.

In the past three years, after the majority of EPA's analysis of the VE facility took place, the Gulf of Mexico continues to degrade due to multiple effects. Overall, the content of nitrogen and phosphorus inflow into the Gulf has increased. As discussed above, climate change has warmed and altered the ecosystem, leading to instability and unexpected effects. HABs have already existed in the Gulf, but

"appear to be expanding and intensifying," In 2022, scientists encountered the toxic dinoflagellate *Pyrodinium bahamense* in the Southeast Gulf of Mexico for the first time. In short, the existing baseline conditions of the Gulf of Mexico are worse than when EPA conducted its original analysis. By all accounts, climate change is not going to stop, meaning the conditions will only continue to worsen. This means HABs will continue to have an even stronger impact in the Gulf of Mexico.

EPA stated that existing studies do not "document a clear effect," but the scientific literature (see section B above) shows that this link is in fact clear. EPA's apparent misunderstanding of the science is even more reason for EPA to analyze the effect of climate change on HABs. Instead, EPA failed to abide by its duty to affirmatively find that the discharges will not cause an unreasonable degradation. If EPA is unable to obtain sufficient information on any proposed discharge to make a reasonable judgment as to its environmental effect, "no permit shall be issued."

Response: See EPA's response in item 3.4. Although the comment cites to post-permit information, this comment does not relate to any of the permit terms changed by the modification, which actually reduces the potential for contributing to HABs as a result of the reduced fish production amount and associated reduction in nutrient-related discharge.

3.7 The permit should be revoked, and that EPA should not issue a modified permit, because the VE facility still presents the potential for fish escapes.

Comment: The new modifications to the net pen system do not eliminate the possibility of fish escapes. Open-net pen systems are "the most vulnerable to escapes" of aquaculture systems. The fact that red drum is native to the Gulf of Mexico does not address these concerns, either, as it did not with the previously permitted species. Several risks from fish escapes of even native fish still exist with the VE facility. EPA did not discuss the possibility of, or harms stemming from, fish escapes in its most recent analysis.

Fish escapes, even from native species present many concerns for the receiving waters. For example, they can "mask wild stock overexploitation, confound stock assessments, alter genetic diversity, increase the risk of spreading pathogens and parasites, and compete with wild conspecifics."

Disease transfer is one of the largest threats that fish escapes present. Disease transfer is the transfer of diseases to endemic populations. For example, it has been suggested that the particular strain of *Streptococcus iniae* isolated from wild fish (*Pomadasys stridens and Synodus variegatus*) collected in Israel may have been an exotic strain originating from red drum being reared in nearby cages.

This is particularly true given the likely application of antibiotics and other pharmaceuticals, which could help spur antibiotic-resistant forms of bacterial infections. These could spread to local populations, whether or not they are other members of the red drum species. The escaped fish could then compete with wild stocks of fish or decimate local populations with the spread of disease.

As long as aquaculture facilities like the VE Facility are not fully contained, it is impossible to prevent the escape of farmed fish into the wild. Since it is such a new and untested industry in federal waters, there are serious risks that EPA failed to consider. For example, EPA did not discuss how the prevalence and distribution of pathogens in wild populations could be better characterized to understand the risks of disease transmission to farmed fish. EPA also failed to analyze the potential population level impacts of offshore escapes on marine ecosystems. Finally, EPA did not consider the impacts of constant, low-level "leaks" compared to one massive escape event. These are threats that EPA has not analyzed, making it

likely that any one of these serious risks could devastate wildlife and the marine environment in violation of multiple federal statutes.

Together, these effects of fish escapes form a distinct possibility of degradation of the marine environment. Under the CWA, EPA must find that any discharge (including biological materials such as fish) will not cause unreasonable degradation. Without having dealt with the numerous concerns raised by potential fish escapes, EPA cannot meaningfully say that no unreasonable degradation will occur. Therefore, EPA should not issue the modified permit until it can comply with the CWA.

Response: Red drum are wild fish species native to the Gulf of America. The cultured red drum will be the first-generation offspring from wild caught fish in the Gulf in the vicinity of the proposed facility. Only first-generation progeny from those wild caught brood stock will be stocked into the net-pen for the modified project. Neither the red drum brood stock, nor the first-generation fingerlings from that brood stock, will undergo any genetic modification or selective breeding, and would not likely pose a competitive risk to wild stock. It's also not likely that there would be any genetic weakening if escaped fish from the facility spawned with wild fish as the Florida Fish and Wildlife Conservation Commission also uses wild caught red drum as brood stock for release into Florida's coastal waters as part of its marine fisheries stock enhancement program.[9] There are other examples of stock enhancement or research programs releasing aquaculture-raised red drum in Florida coastal waters in 2022[10] and 2023.[11]

Fish escapes were analyzed in the 2022 permit record, and the same analysis applies even though the fish species has changed. There is not an appreciable difference in fish escape impacts posed by the change in species. The risks that escaped farm fish pose to wild populations are a function of the probability of escape, and the magnitude of the event that could cause an escape event. The cage system is designed to survive storm events by lowering the cage, which will be completely submerged during storms. The EPA has determined that the operational design will result in a low probability of escape. Furthermore, as with the original permit, the modified permit contains conditions requiring structural maintenance and a FDPC plan to mitigate the risk of disasters that may cause fish escapes.

[9] The Florida Fish and Wildlife Conservation Commission marine fisheries stock enhancement program for red drum uses brood stock from fish captured in the wild that are raised in captivity in indoor aquaculture systems. This breeding program using wild brood stock are Information available at: < https://myfwc.com/research/saltwater/stock-enhancement/general-information/raising-red-drum/ >

[10] https://mote.org/news/mote-raises-and-releases-largest-number-of-hatchery-reared-red-drum-in-its-history/

[11] https://www.observerlocalnews.com/news/2022/feb/12/whitney-laboratory-releases-100-000-juvenile-redfish-into-local-waters/

4 Response to Comments from Multiple Entities[12]

4.1 Red tide events and fish waste

Comment: The proposed facility will add nitrogen pollution from fish waste and uneaten feed to a region that already suffers from devastating red tide events, often linked to nitrogen. A reduction in the number of fish and the species raised under the draft modified permit does not change this in any significant way.

Scientists have found that red tides can last longer in coastal waters due to additional nitrogen from human activities. The complex conditions offshore that lead to the start of red tide events are still being studied, but this proposed fish farm would be located within the offshore area where red tide events usually begin, leading to concerns that it could contribute to the formation, extent or duration of red tide events. According to the FL Fish and Wildlife Conservation Commission:

> "We now know that Florida's red tides begin in nutrient-poor water 18 to 74 kilometers (11 to 46 miles) offshore." This proposed facility would be 45 miles off the coast of Florida.

The state of Florida is acting to reduce the flow of nutrients into coastal waters through basin management action plans (BMAP) for specific water bodies that outline actions to reduce nutrients. This includes a number of bodies of water that, while not immediately adjacent to the project area, are along Florida's west coast in the region of the proposed facility.

Florida is acting to reduce nutrients in coastal waters due to their negative impacts on water quality and ecosystem health. Florida's actions provide further evidence that any proposed open water finfish aquaculture project that could increase nutrients in surface waters, as the proposed facility would do, is contrary to these efforts and should not be permitted.

Response: The modified facility will have a lessened nutrient discharge compared to the originally permitted facility (see responses to comment 3.4 and 3.6). Thus, the comment does not relate to impacts from the modified provisions of the permit. The potential impacts of the original permit on nutrient impacts and algal blooms are fully addressed in the record for the 2022 permit.

4.2 Prohibition on the intentional or negligent release of produced fish

Comment: While the draft permit forbids the intentional or negligent release of farmed fish due to the potential harm to wild fish, this permit condition cannot be met in an area so highly subject to hurricanes and tropical storms. Such storms are likely to damage or destroy cage systems and cause the release of farmed fish. These escapes of farmed fish are so common to fish farms worldwide as to be considered ubiquitous to the industry.

A European study showing the impact and breadth of various farmed finfish escapes over a 3-year period in Europe. A total of 8,922,863 fish were reported to have escaped during 242 incidents in 6 countries.

[12] Comments were submitted by multiple entities together: Don't Cage Our Oceans, Healthy Gulf, Sierra Club Florida, Center for Food Safety, Food and Water Watch, Recirculating Farms, GreenJustice, Suncoast Waterkeeper, and Animal Defense Fund.

Recognizing the regularity of fish escapes from ocean-based net pens, the U.S. Council on Environmental Quality has stated that it "must be assumed that escapes will occur" from net pens."

Farmed fish are raised in hatcheries and are widely known to be genetically distinct from fish hatched in the wild, including the fact that the hatchery fish reproduce at lower rates than wild fish. This phenomenon of reduced fecundity of hatchery-raised fish in the wild has been reported for multiple species. Therefore, escaped fish could breed with wild fish and reduce the ability of wild fish populations to sustain themselves.

For example, scientists studying wild and hatchery salmon have found that "when hatchery fish are released into the wild, they generally have reduced reproductive success and decreased survival rates compared to their wild counterparts. This poses a risk to wild populations if hatchery-reared individuals interbreed with wild individuals."

Additionally, the release of hatchery fish could contribute to the spread of disease in native fish populations. As can occur in finfish aquaculture with any species, the red drum proposed for culture are known to be subject to disease caused or exacerbated by the unnatural conditions inherent to industrial-scale fish farms like that proposed, and such disease has been noted in red drum aquaculture in the Gulf of Mexico.

There is no doubt that the proposed facility will increase nutrient flows into adjacent surface waters, which could potentially exacerbate red tide events. It's also true that harm to wild fish from hatchery fish is probable due to the high likelihood of fish escaping from the facility and interbreeding with wild fish. For these reasons we ask that this permit be denied.

Response: The permit revision regarding the prohibition on the intentional or negligent release of fish cultured at the facility was a clarification that makes more explicit the permittee's obligation, based on the proper operation and maintenance requirement and other conditions of the 2022 permit, to manage the facility in a way that minimizes the escape of cultured fish. Under the 2022 permit, multiple standard permit conditions prohibit fish releases except under certain situations: pursuant to requirements for proper operation and maintenance of a facility, releases that are the result of negligent operation or maintenance under 40 CFR 122.41(e) are prohibited. In addition, the deliberate release of fish is prohibited except in circumstances that qualify as an allowable "bypass" under 40 CFR 122.41(m), or as an "upset" under 40 CFR 122.41(n). The revised permit language simply clarifies releases that would be prohibited under the more general language of the proper operation and maintenance, bypass, and upset provisions.

The commenters concerns relating to the impacts of fish escapes and increased nutrient discharge have already been addressed in connection with the 2022 permit issuance and do not relate to any changed effects from the permit conditions being modified. In addition, the modified permit contains a new condition requiring an engineering analysis prior to placement of the facility in federal waters to confirm that it can withstand expected conditions in the environment of the project.

5 Response to Comments from Suncoast Waterkeeper

5.1 Location and Red Tide Risk

Comment: The proposed site is within an area known as a red tide initiation zone. Adding nutrients to these waters could significantly increase red tide concentrations, intensifying its severity and environmental impact.

Response: The location of the facility will not be changed from the permit issued in 2022. For risks related to red tide, see response to 3.4 and 3.6. The red tide concerns were addressed in the original permit record and do not relate to any changed conditions in the permit. To the extent there is any red tide concern related to nutrient discharge from the facility, that potential impact has been lessened by the reduction in fish production volumes that will occur as a result of the modification.

5.2 Monofilament Line Hazards

Comment: The farm's use of monofilament lines poses a serious threat to marine life. These nearly invisible lines can entangle dolphins, sea turtles, and other species, leading to injury or death.

Response: See response to comment 3.3.

5.3 Hurricane Vulnerability

Comment: The offshore facility's location in hurricane-prone waters presents a high risk of catastrophic damage, leading to pollution and the release of farmed fish, which could disrupt local ecosystems.

Response: The location of the facility is the same as the currently effective permit and therefore this comment is not related to the revisions in the modified permit. See response to 3.4.

5.4 Threat to vulnerable marine species

Comment: Florida’s biologically sensitive areas, as well as its endangered and threatened species, must be protected from the risks posed by floating fish farms. Preserving the productivity of our offshore and estuarine ecosystems is critical, as these areas provide invaluable environmental and economic benefits that far outweigh the potential harm caused by industrial fish farming.

Response: This general comment does not identify any concern attributable to the changed conditions in the NPDES permit.

5.5 Lack of Necessity for Red Drum Farming

Comment: There is no shortage of red drum. This species is already successfully farmed on land, making the offshore operation unnecessary and redundant.

Response: The EPA’s NPDES permit process does not consider the business wisdom of the facility but rather focuses on the environmental impacts. The USACE’s Section 10 RHA permit issuance does consider business aspects of the activity. For example, 33 CFR Part 320.4(q), which addresses the ‘economics’ topic in the USACE’s public interest review, says “When private enterprise makes application for a permit, it will generally be assumed that appropriate economic evaluations have been completed, the proposal is economically viable, and is needed in the market place. However, the district engineer in appropriate cases, may make an independent review of the need for the project from the perspective of the overall public interest.”

5.6 Harm to Local Fishermen

Comment: Pollution and potential disease spread from the facility threaten local fisheries, harming small-scale fishermen and the communities that depend on them.

Response: This comment is outside the scope of the four permit provisions that are changed by the modified NPDES permit. Also see response to item 3.2.

5.7 Unfair Burden on Locals

Comment: This industrial-scale pilot project imposes external costs on local residents, who neither want nor benefit from it.

Response: This comment is outside the scope of the four permit provisions that are changed by the modified NPDES permit.

6 Response to Comments from Sanibel-Captiva Conservation Foundation

6.1 Nutrients and HABs

Comment: The additional nutrients are likely to cause macroalgae and phytoplankton blooms, including the harmful algae bloom caused by the dinoflagellate *Karenia brevis*. The proposed marine net-pen facility 45 miles southwest of Sarasota, FL is directly in the initiation and intensification zone for Florida Red Tide (Weisberg et al. 2019). Florida Red Tide (*K. brevis*) is known to use many sources of nutrients as it forms and intensifies on the west Florida shelf (Heil et al. 2014). Furthermore, researchers have recently demonstrated that overgrowth of macroalgae on the benthos can fragment and use nitrate to grow and become stranded on our pristine beaches (Milbrandt et al. 2019). These stranding events have become more common in the past decade and large piles of seaweed can rot and stink, impacting the main source of economic revenue for southwest Florida, tourism. There is also evidence from 2018 that despite being wide and shallow, the west Florida shelf in this area stratified and created a layer of hypoxic water that was at least 600 square kilometers (Kelble et al. in prep). The area was likely much larger but the sampling effort was insufficient to find the edges and extent of the "dead zone."

Additional nutrient sources should be denied and existing sources, especially those from people and land use need to be reduced. This is Gov. DeSantis main focus of Executive Order Number 19-12 to fight algae and red tides. The history of red tide observations demonstrates that blooms occur every year (Brand and Compton 2007).

Response: The original permit authorizes a greater level of nutrient pollution than the modified permit. The modified permit reduces the nutrient discharge because of the lower fish production volume. Accordingly, this comment is outside the scope of the four permit revisions that are changed by the modified NPDES permit. Also see responses to items 3.4 and 3.6.

6.2 Solids and Dissolved Wastes

Comment: Waste food, and feces will be released into the water. Red Drum are carnivores, and so must be fed a protein rich diet, which they use inefficiently compared with the herbivores and omnivores that are farmed on land. Consequently, they excrete dissolved compounds of nitrogen (especially, ammonia) and phosphorus (especially, phosphate) by way, mainly, of their gills. The problems due to these wastes arise from intensive or semi-intensive farming, which takes in food from an extensive region and concentrates the waste in a much smaller area around a farm. These concentrated wastes are in the initiation and intensification zone for harmful algae blooms on the west Florida shelf and could lead to macroalgal overgrowth as the wastes sink to the relatively shallow depth (130 ft) proposed by Ocean Era, LLC.

Most human and industrial wastes are now, in cities in the developed world, collected and treated before discharge, this Ocean Era LLC farm waste will enter directly into the Gulf of Mexico. Although such wastes are in themselves natural, and so harmful only in excess, mariculture and open net pens results in the production of a second category of wastes. These are the man-made chemicals used to treat fish for disease, to make them grow faster, or to prevent seaweeds, sea squirts and barnacles from growing on net pens. Copper plating is used to prevent fouling but copper is expensive and can cause problems due to electrolytic corrosion. The anti-fouling compound tributyl tin, or TBT, is widely used and it is harmful to marine invertebrates. Thus, nutrients, harmful algae blooms, organic matter and toxic pollutants have the potential to do harm to marine organisms on the benthos. Antibiotic resistant bacteria result from the over use of antibiotics to treat disease. Infections of bacteria are common in the Gulf of Mexico because of warm ocean waters where Vibrio vulnificus thrives. Adding antibiotics to treat fish diseases directly into the Gulf of Mexico waters through disposal of industrial waste by Ocean Era,

LLC would increase the antibiotic-resistant bacteria and become more difficult to treat if an infection was contracted.

Response: Apart from the concern identified with respect to the change from almaco jack to Red Drum, the concerns raised in this comment are predominantly not related to the provisions being changed in the modified permit. The commenter does note specific concerns related to the Red Drum species that will be produced pursuant to the modified permit: specifically, "that Red Drum are carnivores, and so must be fed a protein rich diet, which they use inefficiently compared with the herbivores and omnivores that are farmed on land. Consequently, they excrete dissolved compounds of nitrogen (especially, ammonia) and phosphorus (especially, phosphate) by way, mainly, of their gills."

The fish feed contents (protein, phosphorus, and nitrogen) for almaco jack and red drum are compared in EPA's permit modification justification memo. For feeding while the fish are considered juvenile, the feed protein and nitrogen amounts for almaco jack and red drum are the same. The amount of protein for adult almaco jack and red drum are 41% and 44%, respectively. The phosphorus amount for juvenile red drum is 0.4% less; for adult fish the phosphorus amount is 0.2% less for red drum. The nitrogen and phosphorus load are less for the modified permit due to the maximum amount of fish production being reduced by 33,000 lbs.

6.3 Damage to the facility during a storm event

Comment: The potential for the Kampachi Farms LLC net pen and vessel to be in the path of a hurricane or major tropical storm is high. While there may be sufficient warning prior to a storm because of improved forecasting, tropical storms and hurricanes can be unpredictable such as Hurricane Harvey. Harvey intensified within 24 hours from a tropical depression to a Category 4 storm that hit Port Aransas TX. The fish in the pens will produce waste but the pens themselves will also become marine debris that could harm our sea turtles and marine mammals.

Response: The permittee is responsible for ensuring the structural stability of the facility during all times of operation, including storm events. The permittee will lower the cage during storm events to lessen the threat of damage to the facility due to increased water current velocities. Prior to commencing operations, Ocean Era will detail protectionary measures within their BMP and FDPC plans. These risks were addressed in the original permit issuance, but the facility described in the original permit was designed differently and used different materials. The change in cage materials and design do not appreciably change the level of risk of structural failure. As noted in the permit modification justification memo, the new design has more attachment points to the ocean floor that should minimize the risk of structural failure. In addition, the modified permit contains a new condition requiring an engineering analysis prior to the facility being placed in federal waters to confirm that it can withstand expected conditions in the environment of the project. Moreover, risks posed by storms were addressed in the record for the 2022 permit, and the risks posed by storms are not appreciably different as a result of the changed conditions in the modified permit. Also see response to item 3.4.

7 Responses to Comments from Siesta Key Association

7.1 Why is the location of the proposed test sites still in the currents going toward the coast of Florida which carries the Karena Brevis?

Comment: These currents carry the Karena Brevis, which excites the Red Tide. The additional pollution these currents would carry would cause a reduction in the population of the Horseshoe Crab which is on a path toward extinction and is sensitive to infection. In addition, Mote Marine has Sea Turtle nesting areas that this would adversely affect.

Response: The location of the facility was not revised in the draft modified permit. This comment is outside the scope of the four permit provisions that are changed by the modified NPDES permit.

7.2 Why are nonnative fish under consideration to be used in the test sites?

Comment: Nonnative fish can bring disease and parasitic infections which local marine life is not immune to, which can cause large problems.

Response: The 2022 permit authorizes the production and associated discharges from culturing Kampachi (i.e. almaco jack). The draft modified permit authorizes discharges associated with Red Drum. Both fish are considered native to the Gulf of America. The diseases that the cultured fish are exposed to are from the Gulf. Also see response to item 3.7.

7.3 What would be the benefit of introducing these negative elements into the Gulf Coast Area, when the possibility of detection is unknown until destruction is well underway?

Comment: Two examples of negative elements being destructive are [Nutria] Rats that were brought to New Orleans for weed control along the canals and bayous. They were not native to that area of the country, nor did they have any enemies or predators to help control the population. The [Nutria] Rats ended up going after the homeowner's vegetation, after eliminating the weeds, which caused an erosion problem all along the bayous. Kudzu was tried to beautify highways and reduce mowing costs in Georgia. Instead, the Kudzu covered everything (ground, buildings, trees, and utility poles). At present the Kudzu covers about 7.4 million acres and is out of control. Both negative elements commenced about 3 decades ago BUT continue to be devastating and not under control today.

Response: This comment is outside the scope of the four permit provisions that are changed by the modified NPDES permit.

7.4 Who is going to make sure that landowners will not be "stuck" with the costs of correcting the destruction to property?

Comment: Look at what happened in New Orleans, Georgia and around the Gulf of America with the [Nutria] Rats and Kudzu.

Response: This comment is outside the scope of the four permit provisions that are changed by the modified NPDES permit.

7.5 What will be done to protect the areas from invasive fish, like Lionfish and Arapaima?

Comment: These two fish are known to be moving into the Gulf of Mexico. They are very destructive to local fish and the fish that are in the farm cages. Lionfish prey on all fish and marine life. The Arapaima

grows to be about 10' long and will eat anything it can get to, including Horseshoe Crab, shore birds, turtles, shrimp, lizards and other fish and mammals.

Response: EPA is unable to determine the context of this comment, or it's relevance to the original permit or the modified draft permit that is subject to public comment. Both fish species (almaco jack and red drum) are considered native to the Gulf of America. This comment is outside the scope of the four permit provisions that are changed by the modified NPDES permit.

7.6 What is being done to protect the Manatees now and in the future?

Comment: Manatees are already threatened on the Endangered Species List. The additional pollution that would be added now and, in the future, could cause problems for these gentle giants. The clouding from the pollution would shade the sea grass, which is the manatees' main source of food, therefore they would starve to death.

Response: Pursuant to 50 CFR 402.02, the term action area is defined as "all areas to be affected directly or indirectly by the federal action and not merely the immediate area involved in the action. EPA and USACE defined the proposed action area as a 1,000 meter radius measured from the center of the proposed project in the 2022 permit's ESA Biological Evaluation (BE). EPA and USACE considered certain endangered and threatened species within the original BE due to certain species that may occur near the action area and for which there are potential routes of effects. Certain ESA-listed species like the manatee were not discussed because their behavior, range, habitat preferences, or known/estimated location do not overlap or expose them to the activities within the proposed action area.

Later, NMFS redefined the project's action area in it's LOC to include any Ocean Era vessel route in addition to the radius around the project location. This expansion of the action area by NMFS did not alter the species that were considered or the effects determination by NMFS that the proposed facility is not likely to adversely affect listed species. Ocean Era is responsible for implementing a protected species monitoring plan to ensure that all marine mammals, reptiles, sea birds, and other protected species are not impacted by Ocean Era's vessels in the action area.

On February 18, 2025, NMFS issued an ESA concurrence letter that stated, "the proposed action is not likely to adversely effect the NMFS ESA-listed species and/or designated critical habitat." This concurrence letter also stated that "As explained in our 2019 concurrence letter, we do not believe any ESA-listed marine mammal species will occur in the action area for this project or be close enough for there to be any potential routes of effects to these species. Given that the action area includes Ocean Era's vessel routes to and from the facility location, and the fact that manatees were not added as an ESA-species of concern by NMFS, NMFS does not believe that manatee's will be impacted to a degree that warrants analysis.

Moreover, this comment is outside the scope of the four permit provisions that are changed by the modified NPDES permit.

7.7 What precautions would be taken to protect and correct damage to the Gulf Sand Shelf?

Comment: Damage can come from trash and pollution as well as displaced anchors of the Fish Farm. Pollutants would end up on the shores of the Gulf's beautiful beaches. A tropical storm/hurricane, such a Helene and Milton, could dislodge the Fish Farm, damage the Sand Shelf, and damage/clutter the shoreline. Barnacles attaching to the Fish Farm cages would cause pollution and problems for the Gulf Sand Shelf.

Response: This comment is outside the scope of the four permit provisions that are changed by the modified NPDES permit.

7.8 How will commercial and fishing for sport be protected?

Comment: The Fish Farm Project claims that all kinds of fishing will be improved. Initially that does occur, however shortly after, the fishing deteriorates worse than it was before the project had begun.

Response: This comment is outside the scope of the four permit provisions that are changed by the modified NPDES permit.

7.9 What has been written regarding issues with experimental fish farms in Federal Waters?

Comment: In January 2020, the Washington Post published an article indicating that nations/states such as Canada; Chile, Denmark; Scotland: Norway; Seattle, Washington; and Alaska have begun to move away from open water/net pen aquaculture to land based closed containment farms. Some of the reasons include excessive pollution which causes algae blooms, Introduction of non-native fish (Almaco Jackfish) which could present problems with infections, disease and they have no natural enemies in the Gulf. Finally, with longer and stronger hurricane seasons, dead zones and rising water temperatures, many more problems would exist.

Response: This comment is outside the scope of the four permit provisions that are changed by the modified NPDES permit.

7.10 What is put in place to protect the tourist economy along the coastline of the Gulf of Mexico?

Comment: For example, Siesta Key Beach has been named the #1 Beach in the United States and #16 in the world, by Trip Advisor. While the proponents of the Fish Farm project state that more jobs would be brought into the area, the numbers are misleading. The number of jobs that are advertised are temporary jobs for the construction of the project. When a negative issue arises, with the Fish Farm, (pollution, killing off marine life, etc) all the jobs in the area (restaurants, small businesses, food suppliers, bars, souvenirs, hotels/condo, gas stations, maintenance, boating, etc.) would be negatively affected as tourists could not/would not be spending their money in the area.

Response: This comment is outside the scope of the four permit provisions that are changed by the modified NPDES permit.

8 Responses to Comments from Siesta Key Condominium Council

8.1 Red drum potential hazards

Comment: Farmed red drum face a number of potential hazards, including disease, parasitic infections and cannibalism. They are also subject to temperature fluctuations. In addition, cultured fish are weaker than wild fish and prone to parasites, so escapes endanger wild fish health and survival. Fish farms also historically reduce populations of native fish, negatively affecting the marine environment and professional and recreational fisherman.

Response: See response to item 3.2.

8.2 Suitability of red drum to off-shore aquaculture

Comment: According to Seafood Watch, cultured red drum are more suitable for land-based farmed fish ponds where they do not discharge feces, waste, and disease into open federal waters; where antibiotics, chemicals and food are not openly discharged into the marine environment. Fish farm pollution is a danger to marine ecology, native species, the recreational fishing industry, and tourism, which sustains Sarasota and vicinity.

Response: The concerns regarding fish farm pollution impacts to marine ecology, native species, the recreational fishing industry and tourism were addressed in the 2022 permit record and those issues are not appreciably affected by the changed permit conditions in the draft modified permit. The comment that cultured red drum are more suitable for land-based facilities is unrelated to the changed conditions in the draft permit modification and is not within EPA's purview, as EPA must act on the application for a modification that is before it. EPA's focus is on the environmental impacts of the request for permit modification and not an applicant's business decision to seek a permit in the gulf environment as opposed to on land. The draft permit modification does not change the location of the facility.

8.3 Cage material

Comment: The cage material has been changed and the mooring system, to a four-point system with eight cables. This design is more subject to fish escapes and accidents, which could affect native populations negatively and block the narrow and shallow boating channels in the Gulf of Mexico. It is untested in the Gulf environment and extremely vulnerable to hurricanes. Ocean Era's judgment in cage selection is flawed: they could not even find a company to build the previously proposed cage.

Response: See response to items 3.7 and 6.3. Concerns regarding potential hurricane impacts and fish escapes were addressed in the 2022 original permit record and the risks of those impacts are not materially affected by the permit conditions that are being changed in the draft modified permit.

8.4 Fish release

Comment: Intentional and negligent release of fish is prohibited. Given the high probability of increasingly severe and frequent hurricanes and the resultant high possibility of fish release, to build a farm in this area 45 miles southwest of Sarasota is in itself negligent. The recent cyclonic Hurricanes Helene and Milton indicate how dangerous a fish farm would be. These hurricanes powerful enough to open Midnight Pass, which is near the proposed farm and has been closed for over 40 years, would surely have destroyed the cage, causing a catastrophic event for the Gulf and marine environment. According to The Lutz Report, Louisiana State University, "Unfortunately, the most suitable sites also tend to be highly vulnerable to damage from cyclones and tropical storms in regions where they are common." Submersing the cage in the relatively shallow Gulf during a cyclonic hurricane is unrealistic and would not provide adequate protection.

Response: See responses to items 3.7, 4.2, and 6.3. Concerns regarding potential hurricane impacts were addressed in the 2022 permit record and the risks of those impacts are not affected by the permit conditions that are being changed in the draft modified permit.

8.5 Susceptibility of cultured fish to red tide

Comment: The fish farm would also be susceptible to massive fish kills from Red Tide, which originates in the area of the proposed farm, and recently returned to offshore Sarasota in large blooms. Dead fish trapped in the cage would add substantial pollution to the Gulf and further degrade water quality and the environment.

Response: See response to item 4.1.

8.6 Fish farm pollutant sampling

Comment: Measuring pollution from one small farm is inadequate and misleading, so it should not even be permitted. The levels of added pollutants, chemicals and nutrients would have to be multiplied by at least a factor of sixteen. The project is merely a test proposal to turn over public Gulf waters to private corporations. The Aqua Act proposed nine areas to be farmed in the Gulf of Mexico, including three near Sarasota, with a goal of multiple farms, and another large farm already in the permitting phase. The SKCC has warned since the outset, this is a test case to advance the proliferation of fish farms throughout the Gulf, and the cumulative environmental damage to the Gulf and marine environment would be substantial.

In conclusion, please deny the modified draft permit as the requested changes have not been tested and pose potential danger of discharge pollution and fish escapes, through design and susceptibility to hurricanes and red tide. No evidence suggests the modified choices are capable of preventing discharge pollution in the Sarasota environment. On the contrary, Hurricanes Helene and Milton, as well as the Red Tide bloom illustrate the real danger the fish farms pose to the environment and wild species.

Response: This is not a comment related to the four permit revisions that are subject to the modified permit because pollutant sampling was included in the 2022 permit, and those provisions are not changed in the draft modified permit, nor is the potential for cumulative impacts changed by the draft permit modification.

9 Responses to Comments from Mass Email Campaign[13]

9.1 General Comment

Comment: I am writing to express my opposition to a draft NPDES permit (EPA–R04-OW-2024-0113) that would allow Ocean Era, LLC to discharge waste from a fish farm off the coast of Sarasota, FL. While the draft permit notes a small reduction in the volume of fish raised by the farm, it will still add excess nutrients to coastal waters that are already suffering from nutrient pollution and has no place next to coastal communities that depend on clean water and beaches to drive their economies.

The proposed farm will add nitrogen pollution from fish waste and uneaten feed to a region that suffers from devastating red tide events linked to nitrogen pollution. Scientists have found that red tides can last longer in coastal waters due to additional nitrogen from human activities. The complex conditions offshore that lead to the start of red tide events are still being studied, and this proposed fish farm would be located within the offshore area where red tide events begin. Adding any additional nitrogen to that area could contribute to the formation of red tides or extend the duration of a red tide event, so EPA should not be granting permits that would do so.

While the draft permit forbids the intentional or negligent release of the farmed red drum due to the potential harm to wild fish, this permit condition cannot be met in an area so highly subject to hurricanes and tropical storms. Such storms are likely to damage or destroy cage systems and cause the release of farmed fish. These releases of farmed fish are common in fish farms worldwide, and have occurred even in the absence of storms.

Farmed fish raised in hatcheries and are widely known to be genetically distinct from fish bred in the wild, including the fact that hatchery fish reproduce at lower rates than wild fish. Therefore, escaped fish could breed with wild fish and reduce the ability of wild fish populations to sustain themselves, harming populations of wild fish.

I urge you to reject this permit due to its documented threats to water quality and wild fish populations.

Response: Regarding red tide and nutrients, the changes to the permit reflected in the draft modification will reduce the discharge of nutrient pollution volumes. To the extent nutrient pollution will still be discharged, concerns regarding that pollution were fully addressed in the record for the 2022 permit. Regarding the potential releases of cultured red drum, see response to items 3.7 and 6.3.

[13] The mass email campaign came from numerous emails containing substantially the same content based on a comment template.

10 Responses to Other Comments

10.1 General Comment

Comment: Given the serious issues with red tide, which as you know are exacerbated by lack of state regulation and oversight on things like phosphogypsum from phosphate mining, spillover of sewage and chemicals from ever worsening tropical storms and increased precipitation from climate change, with all that the Gulf of Mexico offshore of central / south Florida simply does not need more pollution than it already has. Totally disagree with this one.

Response: This comment is outside the scope of the four permit provisions that are changed by the modified NPDES permit. The changed conditions in the modified draft permit actually result in a reduced volume of nutrient discharge due to the lower volume of fish production that is authorized.

10.2 General Comment

Comment: As a local homeowner and business owner, I again object to this project being done offshore from where I live and work. We already deal with pollution and red tide in our waters, and don't need this to add to it. The frankenfish that has been created with Atlantic Salmon does not need to be repeated in the Gulf of Mexico with this project. Given that the company is from Hawaii, doesn't anyone find it questionable on why they aren't doing this in that area? Likely because they don't want to pollute the waters where they live. I urge you to please use common sense and reject this entire proposal, or move it back to the businesses home state of Hawaii.

Response: The commenter's reference to "frankenfish" seems to relate to a concern that non-native or genetically modified fish will be released to interbreed in the Gulf of America. However, the red drum that will be cultured are native to the Gulf of America, and will be raised from fingerling offspring of wild caught fish. See response to item 3.7. The remainder of the comment is outside the scope of the four permit provisions that are changed by the modified NPDES permit.

10.3 General Comment

Comment: Thank you for the information and keeping up with your excellent work to protect our planet Earth.

Response: This comment does not appear to seek a response or raise any concerns relevant to the four permit provisions that are changed by the modified NPDES permit.

10.4 General Comment

Comment: Can't do anything until after election.

Response: This comment does not appear to seek a response or raise any concerns relevant to the four permit provisions that are changed by the modified NPDES permit.

10.5 General Comment

Comment: Please, we must stop making our seas toxic. And infectious. They are the life of our planet. Thank you for the information. May we stop destroying our own lives. And our grandchildrens'.

Response: This comment is outside the scope of the four permit provisions that are changed by the modified NPDES permit.

10.6 General Comment

Comment: Go ahead and let the ocean be destroyed by these big polluters since the only thing that matters is money!

Response: This comment is outside the scope of the four permit provisions that are changed by the modified NPDES permit.

10.7 General Comment

Comment: I am very opposed to permitting marine pen aquaculture in the Gulf of Mexico off the coast of Sarasota County. The Sarasota area has just experienced 3 major tropical storms resulting in a tremendous amount of pollution washing into the Gulf. In addition to the storm debris, fertilizer, vegetation, and animal waste, millions of tons of raw or insufficiently treated sewage were discharged into the Gulf. This pollution extended from the Tampa-St Peterburg area south to Charlotte County. These pollution events have happened repeatedly and are likely to continue into the future. The Gulf of Mexico is already overstressed and can not afford any additional pollution from aquaculture.

Response: This comment raises concerns that were fully addressed in the 2022 permit record and is outside the scope of the four permit provisions that are changed by the modified NPDES permit.

10.8 General Comment

Comment: I am strongly against this project to protect the waters and current fish populations from disease and contamination and to protect local fishing jobs and recreational businesses plus the overall environment in a Hurricane and red tide prone Gulf of Mexico area!

Response: This comment is outside the scope of the four permit provisions that are changed by the modified NPDES permit.

10.9 General Comment

Comment: Good for benefit of society. Approve!

Response: This comment is outside the scope of the four permit provisions that are changed by the modified NPDES permit.

10.10 General Comment

Comment: I am writing in SUPPORT of EPA plan to issue a modified NPDES permit to Ocean Era, LLC (current permit number FL0A00001). In the 1980s, I worked as a commercial salmon troller in Oregon & Washington, and as a fish buyer in Alaska. I value wild caught seafood. I later went to earn a PhD in Environmental Sciences & Resources (Portland State University, 1995), then taught in the fish & wildlife management program at Northeastern State University (Oklahoma). Mariculture can be, and is globally, a sustainable industry providing valuable protein when properly managed. I feel that the US is one of the few nations that can responsibly supervise an environmentally safe mariculture industry. Sarasota, where I now live, is an excellent location as we have a large cadre of professional marine biologists to ensure proper monitoring.

Response: This comment is outside the scope of the four permit provisions that are changed by the modified NPDES permit.

10.11 General Comment

Comment: I'm writing to request another hearing for the Ocean Era aquaculture project, which would raise red drum fish in an offshore net pen 45 miles off of Sarasota. Our sensitive offshore areas and endangered and threatened species must not be put at risk by floating fish farms.

Response: EPA considered this public hearing request. EPA has discretion to hold a public hearing based on the requests for a public hearing when EPA finds that there is a significant degree of public interest in the draft permit or when a hearing will clarify the issues involved in the permit decision (see 40 CFR 124.12). The changes to the permit effected by the modification are relatively minor. While there has been a significant degree of public interest in the facility as a whole, EPA already held a public hearing on the 2022 permit and the changes effected by the draft permit modification have not attracted substantial comments. Many of the comments made on the draft modification relate to the facility generally and not to the conditions being changed. Therefore, EPA is not holding a public hearing for the draft modified permit.

10.12 General Comment

Comment: The Ocean Era aquaculture project has been around for some time, and is just as dreadful as before as it is now. These "fish farms" result in concentrated fecal matter, diseased fish, and parasite laden fish. In Maine, residents [illegible] because it was easier to do that then go for the fish farm owners. Freshwater fish farms are easier to culture and don't destroy the environment as much. No on Ocean Era aquaculture!

Response: This comment is outside the scope of the four permit provisions that are changed by the modified NPDES permit.

10.13 General Comment

Comment: Please do not approve the permit for Ocean Era to do off-shore net-pen fish farming off of Sarasota Florida. Industrial offshore fish farms contaminate our marine waters with drugs, chemicals, and untreated wastes, and create a breeding ground for pests and diseases. This causes wild-caught fish and wildlife populations to decline, affecting endangered and threatened species, undermining historic fishing communities, and offering the public low-quality fish.

As the pests develop resistance to certain chemicals, the companies use more toxic solutions. A 2021 study found that as the sea lice become resistant to organophosphates (OPs) used in fish farms, they spread into the ocean and flourished into stronger, OP-resistant populations far away from the fish farms. This OP-resistance leads industrial-scale fish farmers to use cypermethrin, a cancer-causing insecticide 100 times more toxic than OPs to aquatic animals like lobsters, crabs, shrimp, and oysters. Industrial aquaculture is conducted solely for the profits of big conglomerates without having to factor in the costs (which they don't pay) for damage to the environment – the ocean, the wild fish, and the public. Please deny the Ocean Era permit.

Response: This comment is outside the scope of the four permit provisions that are changed by the modified NPDES permit.

10.14 General Comment

Comment: I live just north of Sarasota along the coast of Anna Maria Island. We are plagued with red tide, hazardous algae blooms, and bacterial infections. Another source of pollution is NOT WELCOME!

The water is not safe now and the risk of waste contamination, escape of the proposed farmed fish to disrupt local fisheries and hazard during storms is too much. I ask you to not allow this permit and close this operation.

Response: This comment is outside the scope of the four permit provisions that are changed by the modified NPDES permit.

10.15 General Comment

Comment: 1. The ocean is public property and should if permitted be only to entities that are us national corporations or business entities owned by 100% US citizens. 2, The farm should be on private land with controlled ocean water pumping in and filtered water back out in the same condition as when pumped in. A scheduled testing of samples should be done regularly as it is done for drinking water wells. 3, Feed used should be of an approved form and sample testing of fish should be done on a regular basis prior to being commercialized, 4. Under no circumstances should this fish farm be allowed in public ocean waters. Other countries that allow this type of fish farming are experiencing a number of pollution problems. 5. we should not set a precedent as it would open the door to more farms and larger problems in the future and only require us citizen tax burden to increase to resolve the issues and clean up.

Response: This comment is outside the scope of the four permit provisions that are changed by the modified NPDES permit.

10.16 General Comment

Comment: Sarasota just suffered 3 major hurricanes, devastating barrier islands, and causing inland flooding which resulted in millions of gallons of raw sewage being pumped into the petri-dish that is Sarasota Bay. We also have a massive raft of red tide fed by sugar farm discharges from Okeechobee. The last red tide event cost our local economy over 100M. There is no defensible reason to allow this fish farm here.

Response: See response to items 3.4, 3.6, 3.7, and 6.3.

10.17 General Comment

Comment: By changing the net from copper to monofilament will cause more harm to the ocean. In the event of hurricane, if it gets dislodged or deteriorates. Please do not allow this fish farm to pollute our waters that we use for recreation and commercial use.

Response: See response to 3.3.

10.18 General Comment

Comment: What can possibly be learned from this small test project? At this scale, it is unlikely that the pollution will do enough damage to significantly harm the ecosystem. Yet we know that the factory farming of fish has repeatedly been shown to be an environmental nightmare. If larger projects are allowed because this tiny project is deemed successful, they will create massive levels of pollution. Will the diseases and parasites, common occurrences in crowded pens, be spread to wild fish? How will the pesticides and antibiotics used to control those diseases and parasites impact local species and water quality? Most importantly, will the high level of excrement intensify future episodes of red tide? Will the cages themselves become incubators for red tide? A Sarasota Herald Tribune article noted that "the purpose of operations like this is to create a sustainable source of seafood." That’s not true. The purpose is actually for a Limited Liability Company to make millions of dollars. Fish factory farming, like all factory farming, is the antithesis of sustainability. When we raise animals for food, we put many more

calories of food into them than we get in return. Mostly what we get back in massive amounts of excrement. I am not a scientist, but I do read what the scientists have to say. Many have spoken out against fish factory farming for some of the reasons I noted. Many also concur that a primary cause of red tide is excessive nutrients in the water, so why on earth would we add so much fish excrement? Let's say no to fish factory farming. It is an especially bad idea in the Gulf of Mexico. I lived near Venice Beach in 2018 and I witnessed the incredible, horrific devastation of red tide. It killed tens of millions of fish as well as causing health, economic, and quality of life issues for residents and tourists. It was awful, a walk along the beach witnessing the countless dead animals that had washed ashore made me feel like I was living in a dystopian novel. We should be doing everything we can to avoid a recurrence. This would be a giant step backwards.

Response: Regarding red tide, see response to 4.1. This comment is outside the scope of the four permit provisions that are changed by the modified NPDES permit.

10.19 General Comment

Comment: I am writing in support of the proposed permit modifications for the Ocean Era aquaculture project. I am a retired food scientist specializing in food safety and have worked for companies engaged in seafood processing, as well as other segments of the overall food industry. Originally from Maine, I have witnessed the decline of many fish stocks due to overfishing above all else. I believe aquaculture offers a better way to ensure a supply of seafood products than simply taking what is there, as man has done for hundreds of years. I note that opponents of aquaculture point out potential harm to the ocean environment due to concentration of wastes, marine diseases and other concerns; however, we have already seen extreme harm, such as depletion of species and ocean floor damage from dragging, caused by conventional fishing methods. It does not make sense to me that aquaculture, which eliminates at least some of the problems of conventional fishing, should be held to a higher standard with the insistence that there be no negative consequences whatsoever. Given that the very purpose of the subject project is to study effects on a small scale, I see no justification for not allowing the project to go forward. If monitoring shows a potential for significant harm, that would be the time to modify or cancel the project, but certainly not at this early stage when any harm is apt to be short-term and very minor. I have faith that the EPA can evaluate the project and qualified experts can make the best decision. Aquaculture should be compared to conventional fishing in its potential harm to the environment and not be held to some higher, and possibly unattainable, standard of no harm whatsoever.

Response: This comment is outside the scope of the four permit provisions that are changed by the modified NPDES permit.

10.20 General Comment

Comment: Please block/deny this request in order to preserve the quality of the Gulf waters in the Sarasota area. The potential of increasing red tide, release of biological and non-biological debris due to hurricanes and the sub-standard product are three reasons to deny this request.

Response: This comment is outside the scope of the four permit provisions that are changed by the modified NPDES permit.

10.21 General Comment

Comment: Strongly opposed to the fish farm in the gulf 40 miles from Sarasota. Between red tide, algae blooms and hurricanes, this farm only introduces more environmental risk. NO FISH FARM

Response: This comment is outside the scope of the four permit provisions that are changed by the modified NPDES permit.

10.22 General Comment

Comment: What is the procedure for monitoring intentional or unintentional release of farmed fish? This should be stated, and ways to detect release must be described in a way that allows them to be followed through. Also, what are the legal consequences for fish being released? Otherwise, saying release is prohibited is of no use.

Response: Cultured fish are considered pollutants under the CWA, which includes "biological material" in the definition of pollutant. A condition has been added to the draft modified permit that prohibits the intentional or negligent release of cultured fish into the ocean. While this requirement was not specifically included in the 2022 permit, the prohibition is included as a clarification that makes more explicit the permittee's obligation, based on the proper operation and maintenance requirement and other conditions of the 2022 permit, to manage the facility in a way that minimizes the escape of cultured fish during normal operations or emergency event. For example, the prohibition is consistent with the 2022 Permit's structural maintenance conditions (see Permit Part IV.A.6), the proper operation and maintenance provisions (see Permit Part VIII.B.1), and the FDPC plan requirements (see Permit Part VI).

Monitoring for fish releases can be performed by the permittee using methods like underwater video cameras, regular visual inspections, acoustic telemetry, tagging with passive integrated transponders, and specialized software that analyzes data monitoring for water quality and fish movement with the cage.[14] Fish escapes are only anticipated to be associated with structural failure of the cage or other facility damage. Permit Part III.A.2 requires Ocean Era to report all fish escapes including an estimate of the material or pollutant released. Therefore, Ocean Era must develop the appropriate monitoring process to estimate the magnitude of fish released.

Additionally, Ocean Era is required to develop and implement a project-specific monitoring plan that provides details on all monitoring required by the permit. Prior to the placement of fish within the cage, EPA will review the permittee's monitoring and reporting plan to confirm that fish escapes are appropriately reported.

Furthermore, the permit's standard conditions require the prompt reporting of any noncompliance which may endanger health or the environment, and the reporting of other violations in regular monitoring reports. Any violations of the permit are subject to potential enforcement. EPA may use a variety of enforcement tools to ensure that Ocean Era complies with its permit, including penalty assessment actions for any violations and suits to compel compliance. Also see response to item 4.2.

10.23 General Comment

Comment: ManaSota-88, Inc. (hereinafter, "ManaSota-88") is a public interest conservation and environmental protection organization, which is a Florida not-for-profit corporation and citizen of the State of Florida. The corporate purposes of ManaSota-88 include the protection and preservation of water quality and wildlife habitat in Florida and, therefore, commenting on the Ocean Era Modified Public Notice falls within ManaSota-88's general scope of interest and activity. Since the 2022 permit has been issued, the area has experienced numerous tropical weather systems, significant storms and extensive red tide outbreaks. ManaSota-88 recommends the EPA resend their previous permit approval for the Ocean Era, LLC Industrial Fish Farm. The value of Florida's biologically sensitive areas and endangered and threatened species should not be put at risk for floating fish farms. We should not risk the productivity of our offshore or estuarine areas, which will ultimately prove to be more important for

[14] English G, Lawrence MJ, McKindsey CW, et al. 2024. A review of data collection methods used to monitor the associations of wild species with marine aquaculture sites. *Reviews in Aquaculture*. 16(3): 1160-1185. doi:10.1111/raq.12890

our future than harmful industrial fish farming. Existing state and federal regulations do not address the significant damage fish farming has on the environment. There is no reason to believe that the EPA will protect Florida's economy and environment from the potential serious environmental damage associated with industrial fish farming. Industrial fish farming will place Sarasota's coastal waters, an area of high environmental sensitivity and marine productivity, at risk. Presently the region supports numerous species of wildlife, major commercial and recreational fisheries, and several species of endangered animals. The potential to exacerbate red tide blooms by fish farms in our region cannot be ignored.

Response: The comment does not specifically address any of the changes to the permit effected by the draft permit modification. To the extent the commenter is concerned that tropical storms and red tide outbreaks have occurred since the 2022 permit was issued**,** See response to item 3.4. The 2022 permit record fully addressed concerns related to tropical storms and red tide, and the potential that the facility will contribute to red tide outbreaks or suffer from tropical storm impacts have not appreciably changed as a result of the conditions that will be changed by the permit modification.

10.24 General Comment

Comment: In an area already brutally affected by Red Tide, adding a fish farm is environmentally unsound. Hurricanes have increased recently - as you know since Charlie there's been dozens ripping through the gulf. Those specifically aimed at the normally placid west coast: Irma, Idalia, Ian, Helene, Milton.... all majors within just the last few years! Waters outside Sarasota, Charlotte and Tampa are home to an array of endangered marine life which are already under too much pressure. If a farm is placed somewhere - let it be far away from the estuaries and homes of so many millions. Development like this is what leads to degradation which our children and grandchildren will certainly shame us for. The west coast doesn't deserve such poor treatment! Please don't spoil these waters by industrializing what little natural life is left. This is a horrible and precarious spot to place a watery version of a CAFO Concentrated Animal Farm Operation in the bulls eye of hurricanes, red tide, and dump more foul waste into one of America's most beautiful "backyards" our precious coast. Its unnatural. Just don't do it.

Response: See response to items 3.4 and 10.23.

10.25 General Comment

Comment: Unless the project owner requested the down rating, the proposed change in the permit for this very small pilot system from 88,000 to 55,000 lb seems insane. If anything you should change the permissions to allow 10,000 tons/yr of production and make it economical. Note 40 tons/yr is not enough fish to pay for the fuel and crew of a commercial fishing boat. This down rating can be a sign of continuing anti-aquaculture, anti-business bias by the EPA. Having read the ODC on this project, I was surprised to find that a lot of the data used on the Feeds and Bottom Impacts was almost half a century old, when aquaculture was starting to grow around the world outside the US. This was before the common use of extruded diets, which have controllable sinking or floating characteristics with better digestabilities compared to the pelleted diets of the 1970s and 1980s. I designed, built, and owned a recycled fish hatchery selling 20 million fish per year to a variety of international markets in research and specialty markets and operated consistently at FCR (food conversion ratios) of 1.0 to 1.1 kg of feed/kg of live fish on several species. In that early era of aquaculture operation of net pens in shallow water did create bottom impacts showing H2S, etc. However, the move to deeper water and higher currents as the technology evolved the anaerobic bottom problems disappeared (hence little recent literature on a non-significant problem).

For data on real farms in deeper water. https://doi.org/10.1016/j.jenvman.2021.113712 and note the low impacts on the ecology and bioturbation (ie O_2 transfer in sediments).

Sea Grant had funded studies on Cobia pens near Puerto Rico and found no impacts for a huge amount of money (about 2000). Like almost all other aquaculture projects, they gave up on the US as the bureaucracy kept blocking the project and moved to Central America just like what happened to the startup shrimp businesses in the 1970s and 1980s as the best and brightest left the US. Note outside the regulatory systems of the US, with all of our delays and anti-aquaculture regulatory biases, aquaculture world-wide has increased 50X and is now larger than ocean fisheries. Only the US is insignificant in aquaculture, even when we started much of the technology. I had a fully computerized fish hatchery in 1980 with an Apple 2e running all the auto feeders and filter systems. All we lack is permission. We have the largest EEZ in the world and we used to be technologically dominant in aquaculture. I sold my technology to companies outside the US and consulted outside the US in my semi-retirement. I didn't build my aquaculture Apple equivalent. This was the crime of the century when we look at the 3 billion more people on the way and the 2 billion that want more meat on the table. Using aquaculture and producing meat using animals that don't waste tissue standing up (non-editable tendon and bone) or energy keeping warm, the food conversion from soy/corn/etc to meat on the table is 2 to 3 times better that land animals like pigs and chickens (cows are in a different playing field). That Atlantic salmon dinner used a feed with mainly soy with fishmeal flavoring at 1.0 or less per kg live wt. fish with a > 65% filet yield. We are using 2 to 3 time more land, water, fertilized and CO2 and N2O (ecological resources) to make feed for pigs and chickens than it would have taken if our activists and regulators had allowed aquaculture to mature in the USA.

Response: Apart from the comment regarding the proposed change in the permit reducing the volume of production from 88,000 to 55,000 lb, the comment is outside the scope of the four permit provisions that are changed by the modified NPDES permit. The reduced volume of the discharge is a function of the change in species selected by the applicant for this project which is slower growing than the previously species and will be smaller at harvest. The commenter's focus on the lack of profitability of the project seems to reflect a lack of awareness that the project was designed by the applicant to be a small, pilot-scale demonstration project that would help to assess the viability of aquaculture in the Gulf of America on a larger scale.