



August 23, 2023

Valerie Quinto, Executive Officer  
North Coast Regional Water Quality Control Board  
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Santa Rosa, CA 95403  
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*Submitted via email*

Re: Comments on the Draft Waste Discharge Requirements for the Nordic Aquafarms California, LLC, and Humboldt Bay Harbor, Recreation, and Conservation District, Humboldt County, ORDER R1-2023-0019 NPDES NO. CA1000003 WDID NO. 1B20161NHUM

Dear Ms. Quinto,

On behalf of Humboldt Baykeeper, Environmental Protection Information Center, Ecological Rights Foundation, and Surfrider Foundation, please accept these comments on the Draft Waste Discharge Requirements for the Nordic Aquafarms California, LLC, Humboldt County (“Draft Permit”). Nordic Aquafarms California, LLC, proposes to redevelop the site of the decommissioned Freshwater Tissue Samoa Pulp Mill facility (“pulp mill”) in order to construct a land-based finfish recirculating aquaculture system.

As co-permittees, Nordic Aquafarms, LLC and the Humboldt Bay Harbor, Recreation, and Conservation District propose to discharge 10.3 million gallons per day through an existing ocean outfall that was built for the pulp mill, which has been defunct since 2008. The pulp mill discharged toxic effluent that caused harm to various beneficial uses, such as surfing, diving, and fishing as well as numerous protected species and their designated critical habitat and/or Essential Fish Habitat. For these reasons, the potential impacts of the proposed ocean discharge are of great concern to our organizations and our many members who rely on the Regional Board to protect the many beneficial uses of Humboldt Bay, the Pacific Ocean, and the near-shore environment.

## **I. Ocean Discharge**

### New Project Description Requires Revisions to the Numeric Modeling Report (Dilution Study)

Since the draft Permit was circulated in 2021, the applicant has changed the Project considerably as a result of changing the species they plan to raise from Atlantic Salmon to Yellowtail Kingfish (*Seriola lalandii*), a warm-water species. The applicant has stated that this species will require primarily saltwater, reducing the need for freshwater, and that the Project footprint has been adjusted to accommodate the need for a brood facility, although no new Project Description has

been made available to the public. While we understand that the aquaculture permit from the CA Department of Fish & Wildlife is pending, these changes to the proposed Project may significantly affect the conclusions of the Numeric Modelling Report that was included in the Environmental Impact Report for the Project.<sup>1</sup> This model should be revised to accurately reflect higher salinity levels, which could result in significant differences in the predicted zone of water quality degradation than were originally calculated.

### Anti-Degradation Policy

The Draft Permit states that a complete antidegradation analysis is not required, due to a perceived low impact on water quality. However, the state's Antidegradation Policy is clear that, in high-quality waters, baseline water quality must be maintained unless it is demonstrated that any change in quality will (1) be consistent with the maximum benefit to the people of the state ("maximum benefit"); (2) not unreasonably affect present or probable future beneficial uses; and (3) not result in water quality less than that prescribed by state policies.<sup>2</sup>

Failing to complete a full antidegradation analysis falls short of state policies to preserve water quality and associated beneficial uses – such as the preservation of ecosystems for marine life – and a full antidegradation analysis must be completed in order to appropriately assign mitigation requirements for any harm to water quality or marine life caused by the project.

The Draft Permit relies in part on the evaluation of the construction of the facility (Draft Environmental Impact Report, State Clearinghouse No. 2021040532) to justify the sufficiency of a simple antidegradation analysis; however, the use of this documentation in lieu of a complete antidegradation analysis is flawed. In addition, the modeling used to support this finding is flawed due to its reliance on nutrient data from inside the Humboldt Bay entrance, rather than on data from closer to the discharge point.

Updating the model to include the current proposal to raise Yellowtail Kingfish is especially important because the original model developed for Atlantic Salmon was used to conclude that a simple antidegradation analysis is sufficient. According to the Fact Sheet (page 73), "Based on the level of treatment provided, the use of an approved BMP Plan and *modeling performed that shows the Ocean plan constituents of concern are below the water quality objectives within five feet of the diffuser*, the Regional Water Board finds that the proposed discharge will produce minor effects which will not result in a significant reduction in water quality." [emphasis added]

### Impacts to Sensitive Species

The Fact Sheet claims that several sensitive species' "exposure to the diffuser effluent prior to dilution to background ocean levels is unlikely. Any unlikely exposure prior to dilution to background ocean levels will be short term. Any potential impact would be less than

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<sup>1</sup> Nordic Aquafarms California LLC, Samoa Peninsula Land-based Aquaculture Project Numerical Modelling Report, Rev. 2. July 2021.

<sup>2</sup> 40 C.F.R. § 131.12.

significant.”<sup>3</sup> There is no discussion about what chemical or biological pollutants were considered, what the pollutant concentrations would be at the discharge location, whether a mixing zone is appropriate and if so the size of the mixing zone, and no discussion about localized impacts to benthic communities and potential food sources.

### Discharge Volume

According to the Fact Sheet, the proposed total water volume of effluent discharge is 10.3 million gallons per day (MGD), which would be comprised of 10 MGD seawater legally sourced from Humboldt Bay and 2.5 MGD of freshwater sourced from the Humboldt Bay Municipal Water District via the Mad River pumping station (page 5). It is unclear how the combined volume from the bay intakes and the freshwater from Mad River would result in a maximum discharge of 10.3 MGD.

### Effluent Limitations

The Permit contains a maximum daily effluent limitation for Biological Oxygen Demand (BOD) of 295 lbs/day, which is very high. A monthly average BOD effluent limitation should be adopted as well.

### Biocides, Disinfectants, Pharmaceuticals, and Other Potentially Harmful Substances

The Fact Sheet identifies an advanced wastewater treatment plant will treat the discharge water, including a Moving Bed Biofilm Reactor (MBBR), a membrane bioreactor (MBR) and UV-C disinfection (page 6). It is unclear whether this wastewater treatment plant will filter out any biocides or pharmaceuticals used to control diseases, maintain the aquaculture tanks, or preserve water quality. The Fact Sheet lacks an analysis of the potential impacts to aquatic life near the discharge point.

The Discharge Prohibition included in the Permit at 3.10 states that “The discharge of detectable levels of chemicals used for the treatment and control of disease, other than salt (NaCl), is prohibited.” But the Permit doesn’t require any monitoring of the various detergents, disinfectants, sanitizers, and aquaculture drugs that have been approved for use, which include chlorine, copper, potassium monopersulfate, formaldehyde, tricaine methanesulfonate, iodine, and pharmaceuticals. How will the Discharge Prohibition be enforced without monitoring the effluent?

### Monitoring

We support the inclusion of the Monitoring of Coastal Oceanography and Water Quality section (page 22). Both baseline monitoring and post-discharge monitoring are necessary to evaluate and

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<sup>3</sup> California Sea Lion, Stellar Sea Lion, Harbor Seals, Gray Whales, Harbor Porpoises, Green Sturgeon (Southern DPS), California Coast Chinook Salmon ESU, and Northern California Steelhead DPS (pages 19-23).

respond to impacts resulting from the Project. However, delaying post-discharge receiving water monitoring until completion of Phase 2 (full facility discharge) is wholly inadequate. It is critical that post-discharge monitoring commence when the facility begins to discharge to ensure that the discharge meets the requirements of the Ocean Plan and Thermal Plan and to document changes to water quality and biota in the Ocean Discharge Study Area so that well-informed modifications can be made to protect beneficial uses of the receiving waters.

### Socioeconomic Evaluation

The analysis of socioeconomic factors is vague and merely presents a list of factors considered, rather than presenting any meaningful or substantive analysis of impacts to beneficial uses related to socioeconomic features of the region, such as surfing and commercial, recreational, and tribal fisheries, all of which are important features of the region's economy and cultural identity. One of the documents considered is the Humboldt County Master Plan, which is not cited but appears to be a document relevant to Humboldt County, Nevada.<sup>4</sup> (Fact Sheet, page 76)

The socioeconomic analysis must consider potential impacts from nutrient levels in the discharge to the region's commercial, recreational, and tribal fisheries, including Dungeness Crab, Chinook Salmon, Razor Clams, and many others. In 2018, the gross revenue of Eureka and Trinidad area commercial fishing fleets was nearly \$23 million, with Dungeness Crab the top species by value.<sup>5</sup> And yet the Fact Sheet states that “[i]t is uncertain whether the discharge from the Facility will exhibit reasonable potential to cause or contribute to an exceedance of the water quality objectives in the Ocean Plan for ammonia. Therefore, this Order requires Nordic Aquafarms California, LLC to conduct monthly effluent monitoring for total ammonia nitrogen (as N) to collect sufficient data for conducting an RPA prior to the next permit renewal.” (pages 68-69). As noted above, post-discharge monitoring would not occur until full-build at Phase 2, by which point impacts will likely have occurred for years without remedy.

Given that the anti-degradation analysis fails to include an evaluation of nutrient concentrations of reduced inorganic nitrogen (NHX) or oxidized inorganic nitrogen (NOX), there appears to be a reasonable potential for exacerbating harmful algal blooms that have significant impacts on the Dungeness Crab fishery, as well as seabirds, marine mammals, and other marine life in the region.

The ocean outfall pipe is in the vicinity of some of the most popular surfing areas in Humboldt County, and is the same pipe the former pulp mill that occupied the project site used to discharge wastewater into the ocean. The mills discharged approximately 40 million gallons per day of untreated wastewater into the near-shore surf zone, which resulted in litigation under the Clean Water Act citizen enforcement brought by Surfrider Foundation in 1989. The resulting 1991 settlement required the pulp mill to construct wastewater treatment facilities to reduce toxic discharges to the ocean and extend the ocean outfall pipe. Due to this historic use of the outfall and the resulting water quality impacts, surfers and beachgoers are naturally concerned about potential impacts of the proposed discharge of 10.3 million gallons per day.

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<sup>4</sup> Humboldt County Master Plan. Humboldt County, Nevada. <https://www.humboldtcountynv.gov/192/Master-Plan>

<sup>5</sup> California Fisheries Data Explorer. California Ocean Science Trust. <https://mpahumanuses.com/data-viewer.html>.

The socioeconomic analysis provides weak justification for allowing degradation, and must be further examined in light of a complete antidegradation analysis and the socioeconomic factors described above.

## II. Bay Intakes

According to the Fact Sheet, “The maximum underwater noise that could be produced is estimated to be 145 dB within a distance of 1 m from the pumps, a level that may result in temporary threshold shifts for some species of marine mammals, however, the pumps will be encased within other structures that will not allow marine mammals to come within a meter of the pumps. The estimated noise is below levels that could result in injury to Marbled Murrelet and special status fish. The estimated distance for 120 dB harassment levels of noise from the pumps may extend to 45 m from the intakes but is likely to be masked by other noise sources including vessel traffic. A less than significant impact will occur.” (pages 31-32). This response lacks analysis. The intake noise is constant, unlike occasional vessel traffic. The Board is admitting that a “take” (harassment) will occur for listed marine mammals up to 45 meters from the intakes. No discussion of which marine mammals would be impacted, how they would be impacted, or any avoidance, minimization, or mitigation measures that were considered. The only species mentioned is Marbled Murrelet (not a mammal).

The Fact Sheet’s analysis of impacts to commercial and recreational fish species from the Humboldt Bay intakes appears to be based on an outdated (2021) report that was written prior to the 12-month survey that was conducted in 2022. On page 39, the Fact Sheet states that “The volume of water moving through the main channel, where the Humboldt Bay Intakes are located, can be compared to the Humboldt Bay Intake volume to understand the relative volumes removed by the intakes (Tenera Environmental 2021a). The volume of water moving through the main channel is dependent on the tidal cycle, but for the purposes of this simple comparison the volume of water exchanged between a mean high and mean low tide is approximately 279 million cubic feet per tide cycle (2,090 million gallons/tide cycle). The intakes would only remove 0.14 percent of the volume moving through the main channel over a 6 hour tidal cycle, an extremely small proportion of water compared to that exchanged in the bay over a tidal cycle. Effects of the intakes on commercial and recreational species would also be less than significant.” The impacts to commercial and recreational fish species cannot be based on the generalized percentage of water exchange in the main channel, in the absence of an analysis of which species are present near the intake structures. Humboldt Bay provides important habitat for juvenile Dungeness crab, and yet the Fact Sheet lacks an analysis of impacts to crab zoeae.

The Regional Board cannot rely on the outdated Tenera Environmental report that was included as Appendix P of the Draft EIR,<sup>6</sup> which was developed prior to the site-specific sampling and modeling study that was conducted to assess the potential for impacts to marine organisms that could occur due to the operation of two seawater intakes. The 2021 report states that “The only

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<sup>6</sup> Tenera Environmental. May 2021. Empirical Transport Modeling of Potential Effects on Ichthyoplankton Due to Entrainment at the Proposed Samoa Peninsula Master Bay Water Intakes.  
<https://humboldt.gov/DocumentCenter/View/102330/Appendix-P---Tenera-Final-Report-PDF>

currently available reference on larval fishes in Humboldt Bay is a study by Eldridge and Bryan (1972) that is based on a year-long study conducted in 1969.” (page 2-5)

The mitigation project for intake structures described in the Fact Sheet incorrectly states that approximately 200 Longfin Smelt larvae are likely to be entrained (page 35). According to Tenera Environmental’s May 2023 Intake Assessment Report, an estimated total of 28,013 larvae would be entrained annually at the intakes when operated at full capacity. The incorrect number appears to have been taken from Humboldt County’s Final Environmental Impact Report, which also proposed a mitigation measure that is no longer under consideration because it does not restore or create habitat for Longfin Smelt (Mitigation Measure BIO-6a, removal of four creosote pilings near Fields Landing). Appropriate mitigation measures must be developed that fully mitigate impacts to aquatic life from the intakes.<sup>7</sup> Such mitigation measures must be available for public review and comment, rather than deferred to a future mitigation plan that would be developed after permit approval.

We appreciate the opportunity to comment on this unprecedented proposal.

Sincerely,

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<sup>7</sup> Water Code Section 13142.5(b) requires that “For each new or expanded coastal powerplant or other industrial installation using seawater for cooling, heating, or industrial processing, the best available site, design, technology, and mitigation measures feasible shall be used to minimize the intake and mortality of all forms of marine life.”