## Written Testimony for Legislative Hearing – Steven Hammer, P.E. – April 26, 2023

My name is Steven Hammer. I have a degree in chemical engineering from the University of Illinois and have been an environmental consultant for the past 32 years. I have been a licensed professional engineer in the state of Oregon since 1996.

I have provided wastewater permitting and engineering services to seafood processors for the last 20 years. I have prepared technical comments to DEQ and agencies in other states on multiple wastewater discharge permits. In my professional opinion, there are three specific areas where DEQ has used its discretion inappropriately and where a course change is needed before significant harm is caused to the seafood industry – including the fishing fleet and not just processors – in Oregon.

#### 1. Metals

In 2022, DEQ suddenly added metals limits to new individual facility seafood wastewater discharge permits, which raises several concerns:

- Prior permits, including the current general permit, do not include metals limits, placing some processors at a competitive advantage to other processors;
- Seafood processors do not add metals to their wastewater, and the only metals in the wastewater are naturally occurring in seafood, seawater, and tap water (tap water can contain some metals at levels thousands of times higher than the proposed discharge limit); and
- Based on my 30+ years of experience as a chemical engineer, it will be impossible for seafood processors to meet these limits. The wastewater flow and quality are too variable and the treatment technologies that could possibly work if flow and quality are not so variable would require building entirely new buildings and treatment plants and the land required to do so is not available in coastal communities where seafood processors are located, for example, the boardwalk at Newport. The limits are simply not achievable.
- 2. Bacteria

Bacteria limits that DEQ is putting in seafood wastewater discharge permits are problematic because:

- DEQ regulates bacteria differently, and more stringently, than Washington State, by not allowing mixing zones, potentially placing Oregon processors at a competitive disadvantage to Washington processors. Oregon's Administrative Rules allow mixing zones around a discharger's outfall for the types of bacteria regulated by the seafood processing discharge permits, but DEQ has chosen to not allow them, even for facilities like seafood processors that don't discharge any human sewage;
- Bacteria in seafood processing wastewater comes from seagull droppings. Seagulls are everywhere on the coast, and measures to deter them are not 100% effective. One seagull dropping contains hundreds of millions of bacteria in a milliliter, and the effluent limit is only 14 bacteria per 100 milliliters.
- Test methods for bacteria were developed for fresh water and treated domestic sewage, not seafood processing wastewater, and the methods have been proven to be inaccurate for seafood processing wastewater.
- We test wastewater for bacteria to check for the potential presence of human pathogens related to human sewage. The bacteria that we test for (fecal coliform, enterococcus) are indicators of the potential presence of human sewage. Seafood processors are not discharging human sewage, so checking to see if human pathogens are present is not necessary. It's just bacteria from bird droppings.

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## 3. Federal Limits for Seafood Wastewater

In the 1970s, the EPA developed effluent limits for seafood processors based on the types of seafood processed. There are many problems with how DEQ uses EPA's limits:

- The limits for seafood have not been revisited in the 50 years since they were developed;
- The limits were developed over a short period of time with limited data from plants not in the Pacific Northwest;
- The limits were developed for plants processing just one kind of seafood, i.e. crab, shrimp, salmon, etc., but in Oregon most seafood processing plants process multiple kinds of seafood at the same time and at different times over the course of a year. For example, a plant may process crab in the winter, shrimp in the summer, and fish all year. The wastewater from "multi-species" plants is a mixture of wastewater from different kinds of seafood, and mixing those wastewaters can result in reductions in treatment efficiency.
- The limits were developed assuming wastewater treatment with a technology called dissolved air flotation (DAF) that was not at the time used in seafood plants, but that EPA thought could be used. Because DAF was not used at the time, EPA used assumed treatment efficiencies. Those efficiencies were based on the use of a class of treatment chemicals that we now know include extremely toxic acrylamide, such that the sludge left over after treatment must be landfilled. Non-toxic treatment chemicals are not as effective, and discharge limits cannot consistently be met with the non-toxic treatment chemicals.
- There are species and processing operations that EPA didn't consider 50 years ago that are being processed and used in Oregon in 2023. In these cases, EPA requires the development of limits by State agencies, but DEQ has dismissed this requirement multiple times.
- EPA's limits are based on how much raw material a plant processes. Seafood processing plants are very different from other industries. EPA assumes that production will be relatively steady, year in, year out, day in, day out, but seafood plants process a wild caught natural resource. The amount processed depends on how much the fishing fleet catches and can vary widely from day to day. The species processed depends on the season and varies from season to season. DEQ has attempted to fit a square peg into a round hole by basing effluent limits on an annual average production rate, which naturally results in production rates that exceed the value used to set the limits half of the time, and because production varies dramatically, maximum production rates often exceed the average by a factor of 5 (i.e. a maximum of 212,000 lbs of crab in one day versus an annual average of 42,000 lbs of crab per day) or more.

## What Do We Want?

- For the goal posts to stop moving;
- Permits that have limits that can be met;
- A thoughtful approach to how we are going to manage metals limits which are impossible to meet (benchmarks instead of limits, acknowledgement that variances will likely be required);
- Mixing zones for bacteria limits, which are allowed in the existing Oregon Administrative Code;
- Sampling and testing methodologies that are applicable to seafood processing wastewater; and
- Site-specific limits for species and processes that were not assessed by EPA, including a new limits for multi-species plants.