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4 **BEFORE THE HEARING EXAMINER**  
5 **FOR THURSTON COUNTY**  
6 **STATE OF WASHINGTON**

7 In the Matter of the Appeal of:

8 Patrick Townsend, Kathryn Townsend,  
9 And Anneke Jensen

Appeal No. 16-106159 VE  
Project No. 2014108800

10 of the May 3, 2016 Mitigated  
11 Determination Of Non-Significance in  
12 The request of ChangMook Sohn for  
13 Substantial Shoreline Development  
14 Permit for an Intertidal Geoduck  
15 Aquaculture Operation

APPELLANTS' RESPONSE TO CLOSING  
ARGUMENTS OF APPLICANT AND  
THURSTON COUNTY

16 **A. Impacts on Eelgrass**

17 **1. Appellants' Expert David Batker is Qualified.** Applicant and the County  
18 argue that Appellants' expert David Batker is not credible, lacks experience, and had  
19 overt bias. As the County noted, however, Mr. Batker is well recognized and  
20 appreciated in his field. Mr. Batker has a B.S. in Geology as well as a Masters in  
21 Economics. He testified he is very familiar with NEPA and he is sought nationally and  
22 worldwide to help governments, and even other countries, to adhere to NEPA  
23 regulations, or regulations simulating NEPA, as SEPA does. Mr. Batker testified he has  
24 extensive experience evaluating environmental impacts. Much of his work has been  
25 reviewing EIS reports, going to sites, looking at environmental impacts, and listing  
environmental impacts. Mr. Batker worked extensively in the Louisiana and Northwest  
wetlands looking at everything from large dams to very small projects that might affect  
only an acre or a ten-foot canal. Mr. Batker testified he has experience with eelgrass  
and other sea grasses that are much more complicated than Z. Marina. Mr. Batker  
testified that not only does he have experience in environmental impact analysis, he

1 also has extensive experience evaluating significant environmental impacts. In addition  
2 to his extensive background in evaluating environmental impacts, Mr. Batker testified he  
3 can also quantify those impacts, if any. For this reason, Mr. Batker has been sought  
4 worldwide by national corporations (such as the World Bank), governments (including  
5 the US Government, FEMA, and Thurston County), and others for his unique expertise.  
6 Mr. Batker has also taught at Louisiana State University and he has been collaborating  
7 with the university since 1985 to review the value of wetlands, eelgrass, and seagrass  
8 through wetland complexes. Mr. Batker is clearly qualified to testify on the issues in this  
9 case.

10 Applicant fails to note that Applicant's experts, including Dr. Osborne, have  
11 testified regularly on behalf of the shellfish industry. This demonstrates inherent bias.  
12 These experts are paid repeatedly to testify on behalf of a private industry, whereas Mr.  
13 Batker has provided services to governments, nonprofit organizations, private citizens,  
14 and corporations, including the shellfish industry. Mr. Batker's diverse experience  
15 demonstrates that not only is he well respected, but that he holds no bias. Instead, Mr.  
16 Batker supports his opinions based on science and experience rather than having his  
17 opinions influenced by the highest bidder.

18 Mr. Batker has an extensive background and education in economics in  
19 conjunction with ecology. To determine the economics of ecology he studies ecology  
20 itself, which lends to his expertise. The County and Applicant argue their experts are  
21 more credible because they have done more "localized" studies. However, Applicant's  
22 experts are relying on studies conducted by individuals in Canada and outside Puget  
23 Sound, and their analysis of this project's impacts on Zangle Cove is based on research  
24 from other areas of Washington that are dissimilar to Zangle Cove.

25 **2. The Impacts on Eelgrass Are Real.** Applicant argues that Appellants  
rely on speculation regarding the proposed commercial operation's impact on eelgrass,  
and have failed to demonstrate there is any eelgrass in the area that could be impacted  
by the project. Eelgrass has been recognized by the Washington Court of Appeals as a  
"critical and fragile aquatic habitat." *Tienne v. Shorelines Hearing Bd.*, 196 Wn. App.  
1059 at 1 (Div. 1 2016)(Order to Publish entered January 9, 2017). The Shoreline  
Hearings Board has also noted that "[t]he Board has repeatedly acknowledged the vital

1 role of eelgrass to the health of the Puget Sound.” *Coalition to Protect Puget Sound*  
2 *Habitat v. Pierce County*, SHB Nos. 13-016c, 13-016, 13-018, 13-019 (Findings of Fact,  
3 January 22, 2014) at 4. Appellants’ and Applicant’s experts agree that the presence of  
4 eelgrass is dynamic and sediment transport is known to impact eelgrass.

5 Regarding sediment, Applicant also stated that the 48,000 geoducks on the  
6 proposed site will be “harvested by hand,” but this is a misleading description of  
7 commercial geoduck harvesting. Mr. Phipps testified that commercial geoduck  
8 personnel use stinger hoses to harvest over 400 geoducks per day, which causes the  
9 sediment in the entire area to be liquefied up to three feet in depth. Each harvester is  
10 waist-deep in the tideland. This is contrary to the notion of harvesting “by hand,” and it  
11 provides further evidence that sediment transport will occur and could impact eelgrass,  
12 including at the nearby eelgrass restoration site.

13 Appellants also provided testimony that eelgrass was on or adjacent to the Sohn  
14 site in 2006 and 2007 and Applicant acknowledges there is a federally-funded eelgrass  
15 restoration project in Zangle Cove. These are facts, not speculation. A commercial  
16 geoduck operation with its associated disruption to the substrate due to the initial  
17 harvest of native geoducks, planting, maintenance, and eventual harvest, will have a  
18 significant, adverse impact on eelgrass in Zangle Cove because these activities  
19 undermine the efforts of the eelgrass restoration project.

20 **3. History of Eelgrass in Zangle Cove.** Applicant argues that Appellants  
21 provided no credible evidence that the proposed geoduck operation could adversely  
22 impact eelgrass, and Appellants can only speculate that the proposed project, if  
23 permitted, will prevent eelgrass from establishing at the site. Appellants’ witnesses  
24 testified that eelgrass was on or adjacent to Applicant’s property in 2006 and 2007.  
25 Applicant’s witness Philip Bloch incorrectly testified that eelgrass was last observed in  
Zangle Cove in 2008. Eelgrass has been found in Zangle Cove as recently as 2009  
and 2013, which led to the DNR/Battelle/DOE eelgrass restoration project in 2013. This  
is also the furthest in South Puget Sound that eelgrass is known to have self-recruited,  
and its success in initial test plantings by DNR/DOE in 2013 are significant. Applicant  
speculates that there are numerous reasons the DNR/DOE test site will not be  
successful. However, DNR, Battelle and DOE clearly disagree since activity on this

1 project continues. Of all the initial planting in 2013, Zangle Cove and Joemma Park  
2 were the most successful according to DNR.

3 Both Philip Bloch and David Batker testified that eelgrass comes and goes.  
4 However, it is also clear that eelgrass is unlikely to return to a place where the substrate  
5 has been churned up by geoduck harvesting and the installation of 48,000 PVC tubes.  
6 Even if eelgrass could return, the eelgrass would be destroyed again during the harvest.

7 Mr. Bloch testified that, in one study, geoducks were planted and harvested  
8 within an existing eelgrass bed, and there was a reduction in eelgrass in the culture plot  
9 during harvest, but eelgrass subsequently recovered and the culture and "control" sites  
10 were indistinguishable 15 months later. However, this study took place in the eelgrass-  
11 rich tidelands of North Puget Sound, whereas Applicant's proposed project is in Zangle  
12 Cove in South Puget Sound, where eelgrass is virtually non-existent.

13 **4. Sediment Transport Can Adversely Impact Eelgrass.** Mr. Batker  
14 provided testimony on projects he has worked on involving sediment. He expressed  
15 concerns about "smothering" eelgrass with sediment. He testified that eelgrass is very  
16 dynamic and doesn't remain in the same place forever. He compared the impact of  
17 geoduck harvesting which churns up a lot more sediment in the water to what occurs  
18 naturally. Mr. Batker also testified that sediment can travel further than indicated by  
19 Applicant's experts. As the basis for their opinions, Applicant's experts relied on studies  
20 from British Columbia and Samish Bay, including a mock harvest where no geoducks  
21 were actually harvested. No one will know the impact of the proposed geoduck  
22 operation in Zangle Cove until studies specific to Zangle Cove are undertaken, which is  
23 why an EIS is necessary.

24 **5. A 16-Foot Buffer is Inadequate.** Applicant argues the DNR eelgrass  
25 restoration site is greater than 16 feet away from Applicant's proposed geoduck  
26 operation and will therefore not adversely impact eelgrass. It may be true that a 16-foot  
27 buffer is sufficient in some areas, but that is not always the case. See *Tienne v.*  
28 *Shorelines Hearing Bd.*, 196 Wn. App. 1059 at 20 (2016) (court found no error in  
29 concluding a buffer did not adequately protect eelgrass from adverse impacts).  
30 Appellants and their witnesses testified that eelgrass has been found on or adjacent to  
31 Applicant's property and Appellants presented evidence of eelgrass sightings in 2009

1 and 2013 along with the DOE/Battelle/DNR eelgrass restoration project which began in  
2 2013. These facts demonstrate that because of the federally funded-eelgrass  
3 restoration project, the entire cove should be off-limits to industrial aquaculture.  
4 Because eelgrass is “critical and fragile,” as noted by the Court of Appeals in *Tienne*,  
5 and because no study can conclusively say what an adequate buffer zone would be in  
6 Zangle Cove, an EIS is necessary for Zangle Cove specifically.

7 **B. Recreation and Aesthetics**

8 **1. Plastic Tubes, Netting and Rebar Are Dangerous to Recreation.** The  
9 County and Applicant continue to maintain that the geoduck plastic tubing is designed  
10 and conditioned to protrude only a few inches above the substrate. They argue that the  
11 tide is rarely at its lowest point and therefore it will usually be covered by water and not  
12 prevent any recreational activities. Essentially, they argue that when the water is not at  
13 its lowest tide the gear is difficult to see, since it is only a few inches above the  
14 substrate. What this really means is that it is more difficult for the recreationist to see  
15 the gear when it is covered with water. Although residents may know the geoduck  
16 operation is there, that does not mean others in the community will know to avoid the  
17 area, until it is too late. Recreationists like swimmers, kayakers, and paddle boarders  
18 can injure themselves on the tubes and rebar, or get stuck in the plastic netting. Once  
19 recreational users become aware of the hazard they will likely avoid recreating in  
20 Zangle Cove and look to another area, free of aquaculture, to recreate and enjoy the  
21 beauty of nature without commercial interference. Considering the County does not  
22 know how many aquaculture farms there are in Thurston County, it may mean that we  
23 are entering an era in which the only places free of aquaculture are city, county, and  
24 state parks. This would be tragic to the people and economy of the State of  
25 Washington which is heavily dependent on recreation. Appellants’ witness Kathy Knight  
26 testified that, in addition to boaters, kayakers, paddle boarders and others from the  
27 Boston Harbor Marina, there are at least 48 boats used regularly by the shoreline owners  
28 who live on Zangle Cove.

29 **2. Plastic Debris Will Create Litter.** The County and Applicant also  
30 contend the plastic gear will not cause significant impacts to other properties. This is  
31 false. Residents testified tubes and nets have washed up on their beaches even though

1 a geoduck operation is not in Zangle Cove. Plastics are known to get loose, which is  
2 why Taylor Shellfish monitors this. Taylor staff acknowledged they do not monitor  
3 everything. Otherwise, residents would not be finding plastics on Zangle Cove  
4 beaches.

4 **3. The Shoreline Master Program Encourages More Than Aquaculture.**

5 Applicant notes that the current 1990 Thurston County Shoreline Master Program (1990  
6 SMP) allows aquaculture, and the County notes the 1990 SMP encourages  
7 aquaculture. However, the County and Applicant fail to point out that the SMP provides:

- 8 • Aquaculture development should consider and minimize the detrimental  
9 impact it might have on views from upland property;
- 10 • Proposed surface installations should be reviewed for conflicts with other  
11 uses in areas that are utilized for . . . recreational boating, [and] sport  
12 fishing . . .; and
- 13 • Proposed aquaculture activities should be reviewed for impacts on the  
14 existing plants, animals and physical characteristics of the shorelines.

15 1990 SMP at 39-40, II B. 5, 6, 7 and 9. The “purpose” of the 1990 SMP states:

16 The local governments of Thurston County recognize that the Shorelines of the  
17 State and the Region are among the most valuable and fragile of our natural  
18 resources. There is great concern regarding their utilization, protection,  
19 restoration, and preservation. In addition, these local governments find that the  
20 ever-increasing pressures to accommodate additional uses on the shoreline  
21 necessitates increase management coordination in the development of the  
22 Shorelines.

23 1990 SMP at 19.

24 The “goal” of the 1990 SMP is “to preserve to the fullest possible extent the  
25 scenic, aesthetic and ecological qualities of the Shorelines of the Thurston Region in  
26 harmony with those uses which are deemed essential to the life and well-being of its  
27 citizens.” 1990 SMP at 19. Zangle Cove is designated for Conservancy Environment  
28 under the 1990 SMP. 1990 SMP at 28-29. The County and Applicant fail to note,  
29 however, that the proposed update to the SMP designates Zangle Cove as “Protected.”  
30 Final Draft of Updated SMP at 132 (June 30, 2013). This proposal indicates the County  
31 intends to preserve Zangle Cove in its present state. Although not yet bound by the  
32 draft update to the SMP, it is disingenuous for the County and Applicant to ignore the

1 proposed designation protecting Zangle Cove. Once a commercial geoduck operation  
2 is installed, it will be too late to “protect” Zangle Cove.

3 **4. Cumulative Impacts.** The County and Applicant assert that because  
4 there are already commercial activities in the area (such as Boston Harbor Marina to the  
5 west and existing geoduck operations to the east on Dana Passage), an additional  
6 geoduck operation in Zangle Cove is consistent with the character of the neighborhood.  
7 Appellants’ witnesses testified that Zangle Cove is a residential neighborhood that is  
8 valued for its natural beauty and there have been no commercial activities in Zangle  
9 Cove over their many long years as residents. Jack Marshall, a local historian who has  
10 lived on Zangle Cove for many years, testified there is no history of aquaculture in  
11 Zangle Cove and this is reflected in the deed conveying Zangle Cove from the State of  
12 Washington to the original owner in the early 1900’s.

13 The County and Applicant also contend that there are geoduck operations in  
14 other places, so new operations should be accepted. This position ignores the  
15 cumulative impacts of additional operations. There has been no study of the cumulative  
16 impacts of geoduck operations in South Puget Sound. In *Tienne* the court found that  
17 consideration of cumulative impacts was necessary, because the proposed project  
18 “would be the first commercial geoduck farm permitted in the area.” *Id.* at 22. The court  
19 also noted that the legislature recognizes the “necessity of controlling the cumulative  
20 adverse effect” of “piece-meal development of the state’s shorelines through  
21 ‘coordinated planning’ of all development, not only ‘substantial development.’” *Tienne* at  
22 21, citing *Hayes v Yount*, 87 Wn.2d 280, 288, 552 P.2d 1038 (1976) (quoting RCW  
23 90.58.020; 030(3)(e)). The explosion and rapid expansion of aquaculture operations in  
24 South Puget Sound that utilize thousands of PVC tubes per acre (approximately six  
25 miles of PVC pipes weighing approximately 16 tons) dictates the need for a judicious  
approach, especially in sensitive estuaries such as Zangle Cove. Thurston County  
Planner Tony Kantas testified the County is unaware of many geoduck operations in the  
county and the County does not monitor the ones they know about. It is impossible to  
determine cumulative impacts without knowing the extent of county tideland acreage  
that has been converted to a monoculture.

1 Applicant relies on Dr. Roser's testimony that he has seen an increase in wildlife  
2 use at his property since a geoduck operation was installed. Dr. Roser has no expertise  
3 in this area and is merely stating his lay opinion. Several of Applicant's witnesses claim  
4 geoduck operations do not cause reductions in wildlife but none of these witnesses  
5 presented specific evidence related to Zangle Cove and Dana Passage. This testimony  
6 is based on unqualified and unsupported opinions and should be disregarded. It is  
7 reasonable to conclude that barges, compressors, stinger hoses, rebar, labor crews,  
8 48,000 PVC pipes, disturbed sand, lights at night, monitoring activity, and removal of  
9 indigenous species in an estuarine location are a significant, adverse impact on the  
10 environment, thus necessitating an EIS.

11 **5. Aesthetic Impacts.** Applicant contends the proposed farm will be "limited  
12 to the tidal elevations between -4.5 and +3 mean lower low water" and that gear will  
13 only protrude "a few inches from the substrate" and will be in place for two out of six  
14 years. Applicant's witness Marlene Meaders opined that gear will be completely  
15 submerged over 81% of the daylight hours. This calculation includes winter months  
16 when the geoduck operation is rarely visible because extreme low tides in the winter are  
17 at night. These calculations also do not account for the fact that during 84% of the days  
18 between April and September the operation will be visible some portion of the day  
19 because extreme low tides in the summer are mid-day. By including winter hours in her  
20 calculation and by including up to 16 hours per day for summer months, Ms. Meaders  
21 skews the issue of visibility. The relevant statistic, as Appellant Patrick Townsend  
22 testified, is that the PVC tubes will be visible approximately 84% of the days during the  
23 summer months from April through September, for 1-6 hours per day, when the cove is  
24 at peak use. Applicant attempts to argue that Mr. Townsend reported each exposure as  
25 a full day, but that an incorrect statement of his testimony.

Because Zangle Cove is small, the proposed project will significantly impact the  
aesthetics of waterfront neighbors at low tide when tubes, netting, and rebar are in  
place. Barges and harvesting will also affect the view for neighbors and create sounds  
and light that were not previously in the cove, especially at night. The County and  
Applicant do not address these issues in the MDNS, but rather take an overall stance  
that aesthetics will not be affected. The fact that Taylor Shellfish double insulates their



1 motor boxes does not change the fact that the motors and the people harvesting will still  
2 make noise and produce light 24 hours a day while working both day and night.

3 Applicant argues aesthetic impacts should not be determined by gauging the  
4 community's reaction to the project. The argument demonstrating economic impacts on  
5 real estate was rejected as a basis for quantifying aesthetic impact. Accordingly, the  
6 community testimony is the only reliable alternative for gauging the aesthetic impact.  
7 The shellfish industry should not be allowed to define what adversely impacts aesthetics  
8 for Zangle Cove residents. Puget Sound has dramatic variation in its shorelines, from  
9 the narrow, straight shorelines along deep water to the sandy muddy flats of estuaries.  
10 It is not possible for any scientist or expert to generalize regarding beaches, currents,  
11 eelgrass, and recreation in Puget Sound. What might be true in one area might not be  
12 true in another. Zangle Cove is a small estuary that widens into the deep, swift currents  
13 in Dana Passage. These currents circulate within Zangle Cove. The V-shape of Zangle  
14 Cove means Applicant's geoduck operation will be in full view of all Zangle Cove  
15 residents; i.e., in everyone's front yard.

16 Applicant claims the operation will incorporate numerous measures to minimize  
17 potential aesthetic impacts, such as routine site inspections, patrols and maintaining  
18 gear. However, these very measures, along with harvest routines with associated  
19 boats, barges, workers, lights and noise—all of which Applicant fails to consider—will  
20 increase the aesthetic impact rather than minimize it. Contrary to Applicant's assertion  
21 that people are interested in and attracted to farming activities to learn about the  
22 process, the County received over 100 comments from community members opposing  
23 this project.

## 24 **6. Operational Management**

25 No agreement has been made with any geoduck operator to manage this project.  
Diane Cooper gave a confused explanation regarding the fact that Applicant Sohn may  
manage the project himself. Applicant is an economist whose only experience in  
aquaculture has been infrequently monitoring his 8-10 oyster bags on his tideland.  
Applicant testified that it is his dream to grow nutritious food to add to the world's food  
supply. However, it is common knowledge that geoducks are air-freighted live to the  
Asian markets immediately after harvest. Geoducks are not cultured to feed the poor

1 and the hungry. They are cultured as incredibly high-priced culinary aphrodisiacs. This  
2 reality does not fit the “dream” testimony Applicant provided.

3 **9. Public Comment**

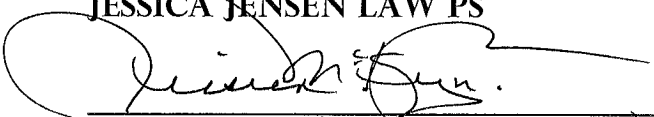
4 Applicant states the County reviewed extensive materials and site-specific  
5 reports pertaining to geoduck aquaculture in general, and this project specifically, and  
6 that public comments were solicited. However, the County’s characterization of  
7 “extensive” refers to reviewing documents utilized by the shellfish industry. The review  
8 did not include the 2015 University of Washington Ferriss study, which found that  
9 commercial planting and harvesting of geoducks at a certain acreage will have  
10 predictable impacts on the food web. Again, the County received over 100 comments  
11 from the community objecting to Applicant’s geoduck operation. Contrary to Applicant’s  
12 assertion, detailed responses addressing the concerns raised were never made.

13 **C. Plastics**

14 Applicant argues that geoduck gear is designed and maintained to minimize  
15 degradation. Applicant provided no testimony regarding the long-term consequences of  
16 the degradation of PVC and plastic netting. Witnesses for Taylor Shellfish testified the  
17 plastic gear has been used repeatedly since 1997-1998. This was long before geoduck  
18 operations began proliferating in Puget Sound. Contrary to testimony by Applicant’s  
19 witness Phipps, the PVC plastic tubes and nets could not have been designed with  
20 geoduck aquaculture in mind, and there remains a strong likelihood of degradation.

21 Applicant argues that “plastic gear has been tested and none has been found to  
22 leach chemicals that have estrogenic activity.” However, the 1.1 acre of predator  
23 netting is composed of HDPE plastic which has been implicated in the release of  
24 estrogenic activators (CZ Yang, National Institute of Health, 2011). The absence of  
25 testing for the predator netting is concerning. Applicant did not address the cumulative  
effects of plastic pollution in a small, contained estuary such as Zangle Cove or in South  
Puget Sound.

1 / 27 / 17  
Date

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