

June 28, 2019

Via Email to https://pebbleprojecteis.com/publiccomments/neweiscomment

Program Manager U.S. Army Corps of Engineers 645 G St. Suite 100-921 Anchorage, AK 99501

Re: **Comments on the Pebble Project Draft EIS**

Dear Program Manager:

The Pacific Seafood Processors Association ("PSPA"), 1 Icicle Seafoods Inc. ("Icicle Seafoods"), Ocean Beauty Seafoods LLC ("Ocean Beauty Seafoods"), and Silver Bay Seafoods LLC ("Silver Bay Seafoods") request that the U.S. Army Corps of Engineers ("Corps") withdraw and revise the draft environmental impact statement for the proposed Pebble Project ("DEIS"). The DEIS is deficient, both in what it omits and how it analyzes the material it does discuss, such that the true environmental and socioeconomic impacts of the proposed mine cannot be assessed by the reader. The DEIS does not disclose the actual planned scope and duration of the Pebble Project, and therefore cannot properly discuss or analyze the actual risks to fish, water, and the people of Alaska from the mine. Moreover, the analyses that are provided are inaccurate, incomplete and misleading. Because of the fundamental deficiencies of the DEIS, any further agency action on the Pebble Project taken in reliance on this DEIS would violate the National Environmental Policy Act ("NEPA").

NEPA has two principal purposes: (1) to ensure that the decision makers will have available, and will carefully consider, detailed information concerning significant environmental impacts; and (2) to guarantee that the relevant information will be made available to a wider audience. The DEIS meets neither purpose. It does not provide accurate and complete information for either the public or decision makers. For the reasons outlined below, we strongly urge the Corps to withdraw the DEIS and reinitiate an analysis of the Pebble Project of the appropriate scope and depth, as required by NEPA. When, as here, a draft statement "is so inadequate as to preclude meaningful analysis, the agency shall prepare and circulate a revised draft". 40 C.F.R. §1502.9. PSPA, Icicle Seafoods, Ocean Beauty Seafoods, and Silver Bay Seafoods request the Corps to do so here.

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PSPA's corporate members are Alaska General Seafoods, Inc.; Alyeska Seafoods, Inc.; Golden Alaska Seafoods, LLC; North Pacific Seafoods, Inc.; Peter Pan Seafoods, Inc.; Phoenix Processor Limited Partnership; Trident Seafoods Corporation; UniSea, Inc.; and Westward Seafoods, Inc.

I. Interests of PSPA, Icicle Seafoods, Ocean Beauty Seafoods, and Silver Bay Seafoods.

PSPA is a nonprofit trade association which has represented seafood processing companies in the regulatory arena since 1914. We focus on federal and state fisheries management and sustainability, access to seafood markets and consumers, seafood tracing and labeling systems, tax and trade, labor and workforce management and environmental regulation. Our nine processing company members purchase and process 25% – 30% of the seafood produced in the United States. Our members, along with our harvesting partners and hundreds of support sector businesses, are heavily dependent on the wild salmon populations in Bristol Bay, one of the world's most abundant and valuable fisheries. We support the sustainable use of natural resources, and are by no means anti-development as a general matter. More detail about PSPA's members and our processing colleagues can be found in the attached Appendix A.

Alaska's seafood processors operate at the center of a global supply chain, enabling 5 to 6 billion pounds of seafood harvested every year in Alaska to go from thousands of fishermen to millions of consumers around the world. In 2016, processors created Alaska seafood products worth \$4.2 billion in first wholesale value.

The seafood industry, including our members and our harvesting partners, directly employs more workers than any other private sector industry in Alaska. Rural areas such as Bristol Bay are the most economically dependent on the seafood industry. The seafood industry directly employs 56,800 people and creates an additional 10,000 secondary jobs in Alaska. Harvesting 5 to 6 billion pounds of seafood each year produces significant economic benefits for Alaska coastal communities, hundreds of support businesses, and thousands of Alaskans.

PSPA, Icicle Seafoods, Ocean Beauty Seafoods, and Silver Bay Seafoods have followed the various proposals for the Pebble Project closely, and are well informed about the work done by others, such as The Nature Conservancy and the Bristol Bay Regional Seafood Development Association, to evaluate the environmental risks from the project. The focus of our comments is on the DEIS analyses of the potential socio-economic impacts of the current proposal, particularly those related to the seafood industry and seafood markets. The inadequacy of the analysis of these adverse socio-economic impacts is directly related to the inadequacy of the analysis of substantial, unavoidable adverse environmental impacts.

II. The Bristol Bay Salmon Fishery is a Unique and Irreplaceable Global Resource.

Bristol Bay is home to one of the last great salmon fisheries on earth. Nearly half the world's wild sockeye salmon comes from this one area. All five species of Pacific salmon return to Bristol Bay to spawn in its rivers, including pink, chum, sockeye, coho and king. Bristol Bay is the most productive salmon ecosystem in North America. For example, the average annual sockeye run in Bristol Bay for the last twenty years was 36.9 million fish, with a record-breaking run of 62.3 million sockeye in 2018.

Numerous freshwater lakes and shallow estuaries make Bristol Bay the largest commercial sockeye salmon producing region in the world. The commercial fisheries management area of Bristol Bay includes eight major river systems: Naknek, Kvichak, Egegig, Ugashik, Wood, Nushagak, Igushik and

Togiak. The Kvichak River, which runs from Lake Iliamna (the largest freshwater body in Alaska) to Bristol Bay, is home to the single largest wild salmon run on the planet. The Nushagak River hosts the largest wild king salmon run in Alaska. The unmatched productivity of the Kvichak and the Nushagak rivers is directly threated by the Pebble Mine proposal.²

Commercial fishing in Bristol Bay began over 130 years ago. In 2018, the Bristol Bay harvest of all salmon species was 43.5 million fish, the second largest in the history of the fishery, and the value of the 2018 commercial catch was a record \$281 million. In 2018, the Bristol Bay region comprised 48% of Alaska's total salmon ex-vessel value. Commercial fishing-related jobs in the region account for nearly 75 percent of local employment. The Bristol Bay salmon industry is estimated to directly employ approximately 14,800 people, including 4,537 Alaska residents. The Bristol Bay processing sector alone employs approximately 5,600 workers in seasonal jobs, and the companies signing onto this letter each employ 400 to 900 people annually in Bristol Bay. In addition to participants in the commercial fisheries, over 4,000 local residents, including many Yup'ik, Dena'ina, and Alutiq people, rely on fish as well as moose and other subsistence foods from the region, for 80% of their protein.

The DEIS affirms that "[t]he harvest and processing of salmon in the Bristol Bay region provides millions of dollars in tax revenues to federal, state, and local governments." See DEIS at 3.6-16. The DEIS also recognizes that the fiscal contributions of the Bristol Bay salmon fishery to the general socio-economic situation in Alaska, as well as across the United States, depend on the long-term health of the fishery. See DEIS at 3.6-16. But, as discussed in detail below, there is a fatal disconnect between that general recognition of the socio-economic importance of the fishery and the DEIS' inadequate and incomplete analyses of the potentially devastating impacts of the mine on this globally significant, irreplaceable fishery. The DEIS does not meet NEPA's mandate to provide "full and fair discussion of significant environmental impacts" or to "inform decisionmakers and the public of the reasonable alternatives which would avoid or minimize adverse impacts or enhance the quality of the human environment." 40 C.F.R. §1502.1.

III. The DEIS Fails to Accurately Present the Proposed Action Under Consideration.

The DEIS fails to disclose and analyze the entire scope and duration of the Pebble Project. Therefore, the DEIS cannot accurately and completely disclose the potential impacts of the project. This failure prevents an accurate analysis of any of the potential adverse impacts from the project, let alone the impacts on the Bristol Bay salmon fishery and the socio-economic benefits that flow from it.

A. The actual Pebble Project is much larger than the area analyzed and its operations will last longer than 20 years.

The Corps does not forthrightly disclose and analyze the entire scope and duration of the Pebble Project in the DEIS, which is geographically larger and will operate longer than any of the action

² See DEIS at 4.24-36 (potential adverse effects listed such as "altering flow regimes and drainage patterns; direct habitat loss; diminishing water quality from riverbank erosion, turbidity, and sedimentation; changes in water chemistry; fish displacement and injury; and degrading the extent of productive habitat conditions.").

alternatives presented in the DEIS. In reality, the 20-year timeline proposed by the Pebble Limited Partnership ("PLP") is simply the first, interdependent step of a much larger project, which is projected to operate for approximately 78 years and which will leave behind tailings and other mine waste in perpetuity. NEPA requires that the entire interdependent project, not just this first phase, be analyzed now in the DEIS. See 40 C.F.R. § 1508.25(a)(1); Sierra Club v. U.S. Army Corps of Engineers, 803 F.3d 31, 49–50 (D.C. Cir. 2015) (providing that actions must be analyzed together in the same assessment if they are "independent parts of a larger action and depend on the larger action for their justification").

PLP has made no secret that the mine's operation is not intended to be limited to twenty years. The "base case" of a 1.5-billion ton, 20-year mine that underlays each of the DEIS' action alternatives is significantly smaller than any plan proposed by PLP over the past decade. PLP has stated numerous times that its goal is to mine the entire 11 billion tons of ore believed to be present in the deposit. As the DEIS acknowledges, mine development for a 78-year time period has previously been identified as an option in both a 2011 report commissioned by PLP (the Waldrop 2011 Preliminary Assessment of the Pebble Project Southwest Alaska) and in a 2014 EPA report (titled An Assessment of Potential Mining Impacts on Salmon Ecosystems of Bristol Bay, Alaska – Volume 1). DEIS at 4.1-8. In an August 8, 2018 Request for Information ("RFI") to PLP, the Corps specifically asked PLP to provide more details of the 78-year resource case and PLP readily provided a conceptual mine facility layout and written description for the expanded buildout scenario. PLP Response to RFI 062.³ In fact, PLP already has permits for resource exploration that would take the Pebble Project well past the initial 20-year period considered in the DEIS. DEIS at 4.1-8.

The DEIS highlights the likelihood of Pebble Project expansion when it explains how the expansion "could use and expand on the project mine site and transportation infrastructure that would be in place, similar to what has happened with other Alaskan mines where adjacent reserves are commonly owned." DEIS at 4.1-8 – 4.1-9. The DEIS recognizes that expansion in situations like the Pebble Project is usually expected, given that "most of the large operating mines in Alaska have been successful in finding additional reserves adjacent to their mine, extending their operating life and postponing a potential 'bust' cycle." DEIS at 3.3-2. Based on PLP's statements and the Corps' own analysis, the expanded 78-year mining timeframe, with up to another four decades of processing and a substantially larger footprint, is the actual proposal before the Corps.

Yet the DEIS incorrectly and misleadingly analyzes the potential impacts from only a fraction of this larger proposal, presenting a proposal that would mine only about 10% of the estimated ore, even though fragmented information in the DEIS shows that the scope of the Pebble Project is clearly much larger and of longer duration than the purported 20-year horizon analyzed in the document. For example, in Table 4.1-1, expansion of the mine is listed as a "reasonably foreseeable" future action "for continued exploration and development." DEIS at 4.1-8. According to the DEIS,

³ PLP's responses to the Corps' many RFIs can be found at https://pebbleprojecteis.com/documents/library.

⁴ The schematic drawing PLP provided to the Corps in response to RFI 62 suggests that the 78-year footprint would encompass over 42 square miles. *See* PLP Response to RFI 062 at 5.

expansion of the Pebble Project would result in an additional 58 years of mining and then another 20-40 years more of post-mining processing. Under this planned expansion scenario, the DEIS admits that the Pebble Project would require significantly more infrastructure, including "additional tailings storage, additional water storage, new waste rock storage facilities, additional processing facilities, a concentrate pipeline and a deepwater loading facility." DEIS at 4.1-8. This infrastructure is not described beyond this passing reference, nor are its substantially expanded impacts on the environment disclosed. The DEIS is deficient because the impacts from these continued operations and expanded infrastructure are not adequately disclosed and analyzed. NEPA regulations state that proposals "which are related to each other closely enough to be, in effect, a single course of action shall be evaluated in a single document." 40 C.F.R. § 1502.4(a); see also 40 C.F.R. § 1508(a)(1) (defining scope of connected actions).

B. The cumulative impacts from the entire proposed action are not presented.

Similarly, because the actual proposed action to be considered is not presented, the cumulative impacts analysis in the DEIS is meaningless. When the Corps considers a proposed action, NEPA requires that the agency consider impacts on the environment which result from "the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions." 40 C.F.R. § 1508.7. Without a complete and accurate disclosure of the true scope of the Pebble Project, the cumulative impacts on the Bristol Bay fishery and its participants cannot be assessed. The Corps identifies the expansion of the Pebble Project as "reasonably foreseeable", but then does nothing more than offer extremely cursory and conclusory statements about the cumulative effects of the expansion. See, e.g. DEIS at 4.27-128 ("[T]he cumulative effects of unintentional releases associated with Pebble mine expansion would be similar to those discussed previously in this section, but potentially involve larger volumes over a slightly larger geographic area."). The Corps simply did not fulfill NEPA's requirements with respect to cumulative impacts analysis.

IV. The DEIS Does Not Present the Risks Posed by an Expanded Mine.

In general, the larger the mine footprint and the longer its operation, the more the risks of substantial, unavoidable adverse environmental impacts increase. These adverse impacts have corresponding substantial socio-economic impacts, but none of these impacts are adequately discussed in the DEIS. NEPA requires that agencies take a "hard look" at all foreseeable environmental consequences, including those to the human environment. See Robertson v. Methow Valley Citizens Council, 490 U.S. 332, 350 (1989). General statements such as those in the DEIS about "possible" effects and "some risk" do not constitute a "hard look" absent a justification regarding why more definitive information could not be provided. See Blue Mountains Biodiversity Project v. Blackwood, 161 F.3d 1208, 1213 (9th Cir. 1998).

The three most glaring and significant defects of the DEIS risk analyses are discussed below.

A. The DEIS fails to analyze the risk of a catastrophic tailings storage facility failure.

The DEIS omits any discussion or analysis of the risk of a catastrophic failure of the mine's tailings storage facility ("TSF"). NEPA requires an evaluation of the environmental impacts of "low

probability, high risk" events. See Metropolitan Edison Co. v. People Against Nuclear Power, 460 U.S. 766, 773 (1983); San Luis Obispo Mothers for Peace v. Nuclear Regulatory Comm'n, 449 F.3d 1016, 1029-1030 (9th Cir. 2006). A comprehensive failure of the TSF is a classic example of a low probability, high risk event. The recent history of tailings impoundment failures demonstrates the probability of such an event is not low.

The DEIS dismisses the potential for comprehensive failure of the TSF as something remote and speculative. This is simply not the case. For example, as the Corps itself recognized, the proposed construction method for the TSF – the centerline construction method – is an inferior method. DEIS at 4-27-73. Yet the DEIS makes no attempt to analyze the relative and presumably lesser risks from the more reliable downstream construction method but dismisses it in a single sentence. The more reliable downstream construction method is a reasonable and feasible alternative that clearly should have been considered and analyzed.⁵

In addition, the released volume analyzed in the DEIS' discussion of a TSF failure is roughly 10,000 times smaller than the historical trend line would predict based on past tailings storage failures worldwide. This makes little sense in light of PLP's chosen inferior design for the TSF. As the DEIS explains, "[d]ata on dam failures around the world demonstrate that dams designed with downstream construction methods are less likely to fail that dams using centerline construction methods, especially under seismic shaking." DEIS at 4-27-73. Yet the DEIS does not analyze comparative risks associated with the choice of the centerline construction method instead of the downstream method.

Most importantly, the DEIS does not model a complete failure of the TSF. This is an egregious omission for many reasons. The firm designing the Pebble Project TSF is the same one that designed the Mt. Polley tailings dam in British Columbia, which failed catastrophically in August 2014, releasing 7.3 million cubic meters of tailings, 10.6 million cubic meters of water and 6.5 million cubic meters of interstitial water into critical waterways, severely damaging important sockeye salmon habitat. The investigation of that catastrophic tailings dam release cited a design failure as the dominant cause of the disaster, noting that the design did not take into account the complexity of the environment. It concluded that the firm involved did not conduct the proper due diligence on the underlying geology, resulting in a failure in the foundation of the embankment. This is sobering, given the proposed Pebble Project TSF is approximately ten times larger than the facility that failed at Mt. Polley. The DEIS does not discuss any of this information. Consequently, its conclusion that "[t]he probability of

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⁵ The alternatives analysis "is the heart of the environmental impact statement." 40 C.F.R. §1502.14. It "sharply define[s] the issues and provid[es] a clear basis for choice among options by the decisionmaker and the public." The analysis must "[r]igorously explore and objectively evaluate all reasonable alternatives, and for alternatives which were eliminated from study, briefly discuss the reasons for their having been eliminated." *Id.* at §1502.14(a). The DEIS does neither with respect to a downstream construction alternative.

⁶ See January 30, 2015, Independent Expert Engineering Investigation and Review Panel, Report on Mount Polley Tailings Storage Facility Breach ("Mt. Polley Report"), available at https://www.mountpolleyreviewpanel.ca/sites/default/files/report/ReportonMountPolleyTailingsStorageFacilityBreach.pdf.

a full breach of the bulk or pyritic TSF tailings embankments was assessed to be extremely low" is unsupported and irrational. DEIS at 4.27-72.

Risks due to construction failure, earthquakes, or significant rain events are also not assessed over the long-term. The Pebble site receives more than 52 inches of precipitation each year, which suggests that the tailings and dam are likely to remain wet and unstable after mine operations cease. The DEIS does not adequately analyze whether or how Alaska's high levels of precipitation would impact the stability of the TSF. Nor does the DEIS take an in-depth look at how plate tectonic activity in Alaska, which suggests the possibility of nearby earthquakes, could affect the Pebble Project and the TSF. The possibility of earthquakes is not remote in Alaska. For example, as of late June, Alaska has experienced 22,651 earthquakes in 2019 alone.⁷

Instead, the DEIS deems the catastrophic releases "extremely unlikely" and simply rules them out from any analysis. DEIS at 4.27-75. But the underlying assumptions that led the Corps to this conclusion are false. First, the Corps assumes there will be no human error at all. See DEIS at 4.27-72. Second, the Corps assumes that the operations and maintenance of the TSF will be perfect and fully funded for the life of the project. See DEIS at 4.27-72. Both of those assumptions seem baseless in light of the long history of tailings dam failures due to human error and lack of funding from companies in the boom and bust cycle of the mining industry. For example, the World Information Service on Energy has compiled a list of over 130 major tailings dam failures in the last 60 years, including 22 distinct failures in the last five years.⁸ The DEIS even notes that "[t]he only common factor in all major TSF failures has been human error, including errors in design, construction, operations, maintenance, and regulatory oversight." DEIS at 4.27-71. Yet the DEIS proceeds with its impact analysis under the assumption that there will be no human error.⁹

This failure to analyze the risk of a catastrophic failure is inexcusable, given the potential risk to the environment and the unique salmon habitat of Bristol Bay and its watershed. While the DEIS notes that "recovery of a massive release, especially one that reaches flowing water, would be extremely difficult," nowhere does it discuss how much this recovery activity would cost or analyze whether a full recovery is even possible. See DEIS at 4.27-65.

⁷ See University of Alaska – Fairbanks, Alaska Earthquake Center, available at https://earthquake.alaska.edu/.

⁸ See WISE Chronology of major tailings dam failures, available at http://www.wise-uranium.org/mdaf.html, last updated May 8, 2019.

⁹ This does not make sense. As the independent Mt. Polley TSF breach investigators explained: "Tailings dams are complex systems that have evolved over the years. They are also unforgiving systems, in terms of the number of things that have to go right. Their reliability is contingent on consistently flawless execution in planning, in subsurface investigation, in analysis and design, in construction quality, in operational diligence, in monitoring, in regulatory actions, and in risk management at every level. All of these activities are subject to human error. Human error is often, if not always, found to play a key role in technological failures. And human error will always be with us, as much as we might wish it to be otherwise." Mt. Polley Report at 119.

B. The DEIS fails to consider the risks of TSF failure and spills after 20 years.

In addition to dismissing the risk of a TSF failure within the initial 20-year period, the DEIS does not analyze the increased likelihood of failure of the mine's TSF that results from longer mine operation and larger tailings impoundments. The Corps did not consider the risk of TSF failure during the anticipated 78-year project or the probability of additional spills during a longer operational period.

Expanded mining operations (both geographically and temporally) lead to an increased likelihood of impacts from spills and TSF failure. The Corps recognizes as much at one point in the DEIS, noting in a discussion of cumulative impacts that extending the operation life of the mine by another 78 years would result in "extending ongoing impacts" and "increasing the likelihood of impacts from spills." See DEIS at 4.24-38. Similarly, the chances of failure of the TSF go up over time and as the footprint of the TSF increases. Under the more realistic expanded Pebble Project scenario, PLP would have to add two more TSF impoundments, one bulk and one pyritic, which only increases the risk of failure. See DEIS at 4.1-23. Also, the overall probability of a dam failure increases with dam lifetime. The DEIS explains that estimates of the probability of failure because it artificially constrains the analysis by looking only at the first 20 years of operations. See DEIS at 4.27-70.

Because the risk analysis in the DEIS is based on an incorrect timeline, its accuracy is therefore extremely suspect and the Corps cannot rely on it to properly assess the environmental risks inherent in the Pebble Project. A conclusion that a full tailings breach is remote during the first 20 years that the mine is operational is already based on little analysis, but then the Corps goes on to ignore the fact that project proponent intends to expand the mine and operate it for another 58 years.

The Corps provides no justification in the DEIS of why more definitive information about the risks of TSF failure after the first 20 years of operations could not be provided. NEPA requires more. NEPA prohibits <u>uninformed</u> agency action. See Robertson, 490 U.S. at 350-51. NEPA requires an evaluation of "reasonably foreseeable significant adverse impacts" of the proposed action, which includes "impacts which have catastrophic consequences, even if their probability of occurrence is low, provided that the analysis of the impacts is supported by credible scientific evidence, is not based on pure conjecture, and is within the rule of reason." See 40 C.F.R. § 1502.22(b).

C. The DEIS fails to analyze the long-term impacts of tailings storage.

Even in the unlikely event that PLP were to only operate the mine for 20 years, the TSF will be there in perpetuity. The DEIS wholly neglects to analyze the risk of TSF failure post-operations. The proposed Pebble Project TSF, under either the 20-year or 78-year scenarios, is a permanent source of risk to downstream fisheries and the socio-economic benefits they provide, and as such is clearly a "reasonably foreseeable significant adverse impact" of the Corps' proposed action. The DEIS conveniently ignores the fact that the massive amount of tailings that would be produced by the Pebble Project will need to be stored in perpetuity.

The DEIS rules out a full TSF breach as remote during the first 20-year period of operations, ignoring the fact that the tailings dam will be present indefinitely after the mine closes. The DEIS tries to dance around this fact by noting that the Pebble Project would not need a traditional tailings pond

that would exist in perpetuity. See DEIS at 4.27-62.¹⁰ But the DEIS discloses that the Pebble Project would still require a permanent storage vehicle for 1.1 billion tons of bulk tailings, along with an operating supernatant pond and additional freeboard, even under a 20-year scenario. See DEIS at 4.27-63. The reasonably foreseeable extension of the mine for an additional 58 years would generate significantly more toxic bulk tailings that would also need to be segregated from the environment in perpetuity. The DEIS impermissibly fails to analyze risks and potential impacts of either scenario.

V. The DEIS Risk Analysis is Legally Deficient.

Significant adverse impacts to the Bristol Bay salmon fishery from the catastrophic failure of the Pebble Project TSF are "reasonably foreseeable." The DEIS is incomplete because it does not include this information and analyze these impacts. The Corps is required to explore the risk of a catastrophic TSF failure because a "reasonably close causal relationship" exists between the Corps' issuance of the permit, the construction of the TSF, and the attendant increased risk of releases into the environment due to a TSF failure. See Ocean Advocates v. U.S. Army Corps of Eng'rs, 402 F.3d 846, 868 (9th Cir. 2004) (agency failed to adequately evaluate impacts of risk of oil spill associated with approval of dock extension at refinery). The Corps' failure to consider the full scope and timeline is "an error about the fundamental nature and severity of the impact" of the proposed permitted activity." See Ocean Advocates, 402 F.3d 846 at 868.

NEPA requires that the Corps obtain such incomplete information "if the incomplete information relevant to reasonably foreseeable significant adverse impacts is essential to a reasoned choice among alternatives and the overall costs of doing so are not exorbitant." See National Mining Ass'n v. Zinke, 877 F.3d 845 (9th Cir. 2017). Here, information about potential significant adverse impacts to the Bristol Bay salmon fishery is essential to a reasoned choice among the alternatives. In addition, the costs of obtaining that information are not exorbitant. In fact, much of the information was already available to the Corps in the public domain and could have been analyzed in the DEIS.

This is made evident by a recent report commissioned by The Nature Conservancy ("TNC") and other partners (the "TNC Report"), which took existing data and constructed a hydrologic model to gauge the potential impacts of a TSF failure. The TNC Report includes an analysis of flow and deposition from a tailings dam failure that is based on 28 actual failures and the detailed hydrological model provides an estimate on where the material would be deposited downstream across a range of failure scenarios. The Corps did none of this analysis in the DEIS.

82d/1553360795911/Lynker TSF Pebble Model+-+Final+Report.pdf.

¹⁰ The DEIS states: "PLP is proposing a method of tailings storage for the proposed project that would eliminate the need for a traditional tailings pond that would exist in perpetuity." *Id*.

¹¹ As are impacts from smaller-scale, chronic leaks over time.

¹² That report, A Preliminary Model Analysis of Flow and Deposition from a Tailings Dam Failure at the Proposed Pebble Mine, is available at https://static1.squarespace.com/static/56b0dfb660b5e98b87fc3d52/t/5c9667624e17b612dddce

PSPA, Icicle Seafoods, Ocean Beauty Seafoods, and Silver Bay Seafoods encourage the Corps to review the full analysis contained in the TNC Report, but we take this opportunity to highlight two important points. First, the TNC Report points out that the DEIS' conclusion that the probability of a full TSF failure is low was entirely based on the outcome from a workshop that the Corps' third-party contractor hosted with two representatives from the Corps, one engineer from Alaska, and four representatives from PLP. TNC Report at a. The DEIS does not disclose or discuss the key role of PLP representatives in crafting the underlying assumptions that drive the Corps' risk assessment. Further, as discussed previously, artificially constraining the analysis of TSF failure to the first 20 years of operations ignores the fact that failure can occur at any time during the lifespan of the TSF itself.¹³

Second, the results of the analysis in the TNC Report show that there is still analysis that needs to be done to determine the true potential effects of a TSF failure on Bristol Bay and the other surrounding watersheds around the Pebble Project. TNC's experts found that in all of the scenarios they modeled, a TSF failure would travel more than 50 miles downstream and directly impact hundreds of miles of critical waters for salmon. TNC Report at b. The TNC Report does some of the analysis that the DEIS does not, predicting that hundreds of miles of river reaches could become inaccessible to salmon as an indirect result of a TSF failure, as well as the direct impacts of water quality contamination from increased copper in the water. See TNC Report at 41.

While the TNC Report is not a complete analysis of the potential risks associated with the potential impacts of a tailings dam failure at the Pebble Project, it clearly highlights that the information to conduct an analysis is available and should have been done. The Corps must conduct an in-depth analysis of the "reasonably foreseeable" risk of a catastrophic TSF failure.

VI. The DEIS Inaccurately Presents the Socio-Economic Impacts of the Proposed Action.

The Corps is required under NEPA to evaluate the socio-economic impacts of the suite of alternatives it identifies, including both direct and indirect effects and their significance. See 40 C.F.R. §§ 1502.8, 1502.16. "Indirect effects" include those effects "what are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable." 40 C.F.R. § 1508.8. The DEIS wholly fails to properly analyze these effects. The DEIS also improperly downplays and underestimates the socio-economic importance of the Bristol Bay commercial salmon fishery and the possible market impacts to seafood harvested in region and across Alaska in a variety of ways.

A. The DEIS frequently omits Bristol Bay from the analysis area.

First, the geographic scope of the DEIS is insufficient, and therefore the DEIS' impact analysis is similarly deficient. 40 C.F.R. §§1500.1(b); 1508.8; see, e.g., Native Ecosystems Council v. U.S. Forest Service, 418 F.3d 953 (9th Cir. 2005). As an initial matter, the DEIS fails to fully forthrightly and transparently acknowledge that Bristol Bay and its tributaries are within the geographic area that

¹³ In addition, the DEIS fails to adequately analyze the potential impacts of smaller, chronic leaks or spills.

may be impacted by the proposed project. Many of the maps used in the DEIS focus solely on Cook Inlet, misleading the public as to the true scope of the area that would be affected by the Pebble Project. At the most basic level, this omission means the public cannot gain a true picture of the potential impacts to Bristol Bay from the proposed Pebble Project.

40 C.F.R. § 1502.22(a) requires agencies to include information relevant to an adverse impact where the "information is essential to a reasoned choice among alternatives and is not known and the overall costs of obtaining it are not exorbitant." The Corps has not done this in the DEIS. For example, consider the DEIS' analysis of the potential effect of the Pebble Project on fish values. The DEIS analysis area for fish values should include Bristol Bay if the analysis area is truly supposed to include "watersheds and downgradient aquatic habitats that could be affected by project components from streams to marine waters." See DEIS at 3.24-1, 4.24-1. But the Corps constricted its analysis of the potential effects of the Pebble Project on fish values to just the three basins immediately adjacent to the footprint of the Pebble Project. See DEIS at Figure 3.24-1, Figure 4.24-1. Because it does not include Bristol Bay in the analysis area, the DEIS' analysis of the affected environment and environmental consequences of the Pebble Project on fish is fatally deficient.

B. The DEIS ignores important impacts to fish populations.

The DEIS ignores or omits altogether discussions of a number of key impacts to fish populations. Many other groups share PSPA, Icicle Seafoods, Ocean Beauty Seafoods, and Silver Bay Seafoods' concerns about these issues, including the Bristol Bay Regional Seafood Development Association. We use this comment opportunity to highlight three of the DEIS' most glaring omissions: (1) lack of analysis of the impacts from selenium; (2) lack of discussion of the potential changes to water temperature and baseline water quality; and (3) lack of consideration of the impacts of fugitive toxic copper dust.¹⁴

First, the DEIS does not consider the impact of selenium on fish populations. Selenium cannot be effectively treated or managed using current technology and it bioaccumulates up the food web. It is considered one of the most hazardous trace elements for fish. The DEIS notes that modeling results indicate that concentrations of selenium (along with a number of other metals) exceeding applicable Alaska water quality standards would be found in both the bulk tailings supernatant and pyritic supernatant produced by the Pebble Project. See DEIS at 4.27-63 – 64. However, while the DEIS acknowledges that selenium bioaccumulates in aquatic habitats and may be harmful to avian species, it does not address the impacts of selenium to fish. See DEIS at 4.27-124. The DEIS should analyze the potential impact of selenium on fish populations, including salmon in Bristol Bay.

Second, the Pebble Project will impact water temperatures and baseline water quality. According to EPA's 2014 assessment of the potential impacts from mining on the salmon ecosystems of Bristol Bay, "[s]tream and wetland water temperatures could be affected by the capture, storage, use,

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¹⁴ The DEIS also fails to fully analyze the potential cumulative effects of smaller, chronic leaks or spills on these and other impacts to fish populations.

treatment, and discharge of water throughout the mining process." 2014 EPA Assessment at 6-38. 15 Changes in water temperature affect fish habitat and fish development. Headwater streams, such as those in the South and North Fork Koktuli River watersheds within the EIS analysis area, are especially important, as they may provide a temperature-moderating effect and help keep downstream water temperatures cooler in the summer and warmer in the winter. See 2014 EPA Assessment at 7-32. But the DEIS does not consider this more interconnected potential temperature effect in its truncated discussion of water temperature and quality. See DEIS at 4.24-23.

Third, the Pebble Project will primarily mine a copper ore deposit. The mine is expected to generate 8,300 tons of fugitive dust annually, in addition to the 5,700 tons of dust created by the construction of the main road to Cook Inlet and the 1,500 tons of dust that the 35 daily round trip truck trips on that road will produce each year. Particles from mining operations, including copper, which can critically impact salmon, will be contained in that dust. The fugitive dust will blow across the landscape surrounding the mine and come to rest in the wetlands, streams, and rivers that make up critical habitat for Bristol Bay salmon. The DEIS analyzed fugitive dust impacts based on a 330 foot zone of influence. See DEIS at 322-1. This woefully underestimates the area potentially impacted by fugitive dust, based on the widespread impacts from fugitive dust found at the Red Dog Mine near Kotzebue, Alaska. Starting in 2007, the State of Alaska required the Red Dog mine owner to take substantial monitoring and remedial actions for dust, including in areas almost two miles from the mine operating site. Yet the DEIS contains no discussion or analysis of the potential effect of copper and fugitive dust on salmon and other aquatic life.

C. The DEIS contains no meaningful consideration of the importance of the Bristol Bay fishery.

Throughout the DEIS, the Corps consistently downplays the importance of the Bristol Bay fishery, both to Alaska and the broader United States. The Bristol Bay fishery is a keystone U.S. fishery that is sustainably managed and has been around for more than 130 years. As discussed further in section I, Bristol Bay is the largest producing wild sockeye fishery in the world. The commercial fishery has posted three straight seasons of historically large runs, including 2018's most valuable catch in the fishery's history. The sustainable nature of this fishery, and the cumulative socio-economic benefits it can provide into perpetuity, must be included.

The DEIS improperly pays only lip service to the Bristol Bay salmon fishery, devoting a mere four paragraphs to a discussion of its importance. See DEIS at 3.6-2 – 3.6-3. The DEIS fails to take into consideration that the Bristol Bay commercial fishing industry requires a large investment to enter and remain in the industry. A recent evaluation of Bristol Bay commercial salmon fishing and processing assets places their collective value at \$1.2 billion. Bristol Bay processors have invested hundreds of millions in the region and are reliant upon a long-term, sustainable resource and a strong consumer brand related to abundance, quality, and a pristine source.

EPA's report – An Assessment of Potential Mining Impacts on Salmon Ecosystems of Bristol Bay, Alaska, is available at https://www.epa.gov/sites/production/files/2015-05/documents/bristol bay assessment final 2014 vol1.pdf.

The Corps' consideration of the consequences to the Bristol Bay salmon fishery as a result of the Pebble Project is similarly sparse and ignores or omits pertinent information. See DEIS section 4.6. For example, the DEIS erroneously claims that Bristol Bay salmon "does not have cohesive brand identification as the Copper River fishery does to help drive prices higher." DEIS at 4.6-2. The perceived value of Bristol Bay sockeye salmon brand at the consumer, retail, food service and industry level continues to grow. 16 The DEIS then glosses over the impacts to the commercial fishery with no thorough analysis or consideration of the portfolio effect, indirect effects, or direct negative impacts to the Bristol Bay salmon brand and overall Alaska seafood brand.¹⁷ Recent economic research has shown that retail prices for wild sockeye salmon are nearly \$3.00 per pound greater than farmed salmon filets, and half of the wild sockeye salmon is harvested in the Bristol Bay salmon fishery.¹⁸ Both the state of Alaska and the commercial salmon industry have poured millions of dollars into defining and developing these brands in the marketplace, and that investment is at risk if mine tailings or waste water were to contaminate the watershed. Alaska's salmon fisheries have built a reputation with retailers and restaurants that relies on the pristine nature of the habitat from which the fish are harvested. Toxic waste from a massive mining operation poses a direct threat to this market share.

The DEIS also underestimates certain key factors in its analysis and cherry-picks data to support its tenuous claims. For example, when discussing the value of the Bristol Bay salmon fishery, the DEIS uses drift net and set net permit values that are highly underestimated. In the DEIS, the Corps claims that drift net permits have an estimated value of over \$103,000 and that set net permits have an estimated value of roughly \$40,000. See DEIS at 3.6-8. But a cursory review of nearly any brokerage website would have shown the Corps that drift net permits regularly go for \$175,000 - \$180,000 and set net permits for anywhere from \$58,000 all the way up to \$110,000.

In another instance of cherry-picking data to produce misleading claims related to fisheries, the DEIS selectively uses only one or two years of stream productivity studies and makes no mention of the

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The DEIS does not take into account sustained marketing efforts aimed at furthering brand identification for Bristol Bay salmon. See, e.g., https://www.bbrsda.com/s/RTC-PME-BBRSDA-Member-Meeting-Pres-Nov2018.pdf, as well as the DEIS comment letters submitted by Jonathan W. Dettmann on behalf of the BBRSDA and Andrew Wink, Executive Director of the BBRSDA, which contain additional information on investment in premium processing capacity for Bristol Bay salmon, Bristol Bay salmon branding and retail efforts, consumer preferences for Bristol Bay salmon.

¹⁷ The State of Alaska and others have made substantial investments in promoting the value of the Alaska seafood brand. *See, e.g.,* https://www.alaskaseafood.org/about/.

For an in-depth analysis of the economic benefits of the Bristol Bay salmon industry, PSPA, Icicle Seafoods, Ocean Beauty Seafoods, and Silver Bay Seafoods point the Corps to the July 2018 Economic Benefits of the Bristol Bay Salmon Industry report prepared for the Bristol Bay Regional Seafood Development Association, available at https://www.bbrsda.com/updates/2018/8/1/economic-benefits-of-bristol-bay-salmon.

fact that stream productivity for salmon varies tremendously over tens of years. For example, one Nushagak basin creek used to produce 1,000-2,000 fish, but in the past few years it has produced 30,000 - 40,000. These watersheds represent a mosaic of stream habitats and the fish choose the best ones in any given year. Thus, the true effect of taking some of these streams out of circulation through the direct or indirect effects of the Pebble Project cannot be judged off one year of data. Rather, the effect can only be judged by analyzing the long-term productivity of the streams, which is entirely absent in the DEIS.

D. The DEIS erroneously promotes the mine as a huge socio-economic benefit to Alaska.

The Corps' myopic consideration of the Pebble Project is on full display in the DEIS' perfunctory treatment of the likely adverse socio-economic impacts of the mine, in contrast to the clear, detailed optimism with which the DEIS promotes the purported socio-economic benefits of the mine.

First of all, the DEIS attempts to tip the scales in favor of the mine by downplaying the important role of the Bristol Bay commercial salmon fishery to the overall economy. For example, the DEIS uses old and currently inaccurate data for its estimates of the number of jobs directly created by the Bristol Bay fishery. See DEIS at 3.6-5. More recent data from the McDowell Group/Alaska Dept. of Labor shows the fishery directly employs 14,765 people (a total of 12,537 U.S. jobs on an annualized basis), which is an increase of 28 percent over the numbers in the DEIS.

In addition, the DEIS uses old and outdated data in reference to the number of jobs created by the processing sector of the commercial fishery, claiming the processing sector employed 3,087 people in the Bristol Bay Borough, 908 in the Dillingham Census Area, and 162 in the Lake and Peninsula Borough. See DEIS at 3.6-12. Recent data show the number to be between 4,200 to 5,600 processing workers, depending on which report (McDowell Group 2015/16 average or BBRSDA average 2013 - 2017 data) is used.

Second, the DEIS also contains a number of logical disconnects concerning geographic and temporal scales. On the one hand, the DEIS mentions the long history of the Bristol Bay salmon fishery and the socio-economic benefits it has brought to Alaska and the greater United States for over a century. But the DEIS restricts its look at the potential impact of the mine on the fishery itself to only 20 years. Further, nowhere in Section 3.6 of the DEIS does the Corps summarize the total economic value of the commercial and recreational fisheries in the overall region, when we know the Bristol Bay commercial sockeye fishery alone generates revenue of \$1.2 billion annually. It limits the discussion to specific portions of the watershed and does not include all fisheries or fishing communities. And even where it does talk about the values of some components of the commercial fishery, the DEIS uses stale data nearly a decade old. See DEIS at 3.6-17

Third, the DEIS does not accurately disclose the significant and negative socio-economic impacts that a spill or tailings release would have on the Bristol Bay salmon fishery. At best, the DEIS downplays the long-term economic hit to Alaska that would follow if a spill or release occurred. The effect of such an event, both directly and indirectly in the minds of Alaska seafood consumers, on the various Alaskan fisheries would be disastrous and could lead to the annual loss of hundreds of millions of dollars (in ex-vessel value alone); the ripple effects across the economy and over time would be in

the many billions of dollars. The DEIS fails to quantify or acknowledge how much is financially at stake or how much of a financial loss PLP could be held accountable for in the event of chronic or catastrophic spills resulting from the Pebble Project. Because the economic and social effects of the Pebble Project are interrelated with the natural or physical environmental effects, the DEIS must discuss all of these effects on the human environment. See 40 C.F.R. §1508.14. The Corps should conduct economic impact modeling to quantify the potential economic losses that would result from chronic or catastrophic spills resulting from the Pebble Project.

Finally, the DEIS inflates the potential positive socio-economic impact the mine could have on Alaska, in large part by failing to take a hard look at the economic viability of the mine as a sustainable business. The shifting ownership and constantly changing information made public about the scope and duration of the Pebble Project indicate that the economic viability of the mine is highly questionable. A mine abandoned by an insolvent owner could leave significant contamination without the financial means to address that contamination. Neither the public, in the form of taxpayers, nor the commercial fishery should be left holding that bag. The DEIS was obliged to consider this issue, if for no other reason than estimating what financial assurances must be required from PLP to protect the environment and the public.

E. The DEIS improperly dismisses valid concerns related about the potential for a large-scale spill event to affect the value of the commercial salmon fishery.

To its credit, the DEIS recognizes that groups associated with the commercial fishery have raised serious concerns that a large-scale spill event would change the value of harvested salmon in the open market and have a related effect on the value of the commercial fishery as a whole. See DEIS at 4.27-91. Unfortunately, the DEIS dismisses these concerns with a superficial and cursory analysis of two incidents: the 1989 Exxon Valdez oil spill and the 2011 Fukushima Daiichi nuclear disaster. The DEIS spends five sentences discussing these two isolated events and then jumps to the broad conclusion that "[t]hese studies indicate that seafood price effects associated with industrial accidents tend to be very small or undetectable, and of limited duration." DEIS at 4.27-91. The DEIS makes no attempt at a comprehensive analysis of existing information from other spills with significant impacts on fisheries. Other information is available, and it indicates that the commercial fishery's concerns are reasonable and must be addressed.

Most notably, the DEIS makes no mention of a more recent "industrial accident" in a marine environment that had a significant effect on consumer behavior and seafood markets: the 2010 Deepwater Horizon oil spill event. The Corps should consider the plethora of studies conducted and reports written documenting the significant effect of that large spill event on seafood markets, including, but not limited to the following studies, which are attached to this comment letter as Exhibits 1-4:

- U.S. Department of the Interior Bureau of Ocean Energy Management, An Analysis of the Impacts of the Deepwater Horizon Oil Spill on the Gulf of Mexico Seafood Industry, March 2016.
- Morgan, O. Ashton et al., Measuring The Impact Of The BP Deepwater Horizon Oil Spill On Consumer Behavior, 2016.

- Argue, David A., The Deepwater Horizon Oil Spill and Seafood Prices, November 2010.
- Natural Resources Defense Council, Summary of Information concerning the Ecological and Economic Impacts of the BP Deepwater Horizon Oil Spill Disaster, June 2015.

These studies, from a variety of sources, demonstrate that market impacts are real and sustained when consumers perceive that wild seafood has been contaminated.¹⁹ "When an environmental impact statement is prepared and economic or social or natural or physical environmental effects are interrelated, then the environmental impact statement will discuss all of these effects on the human environment." 40 C.F.R. §1508.14. That is exactly the case here – the environmental impacts from the Pebble mine are interrelated to the effects of the mine on the Bristol Bay salmon fishery and seafood markets. The DEIS must be revised to include the rigorous and comprehensive analysis that NEPA requires.

F. The DEIS only acknowledges out-of-state employment numbers when it is beneficial to the mine.

Lastly, the DEIS provides a confusing and unhelpful discussion of employment numbers for both mining and the commercial fishery. It uses one optimistic set of assumptions for its analysis of the potential benefit for Alaska resident workers from the Pebble Project, but then uses a completely different set of parameters to ignore potential effects on the steady jobs both currently provided for by the commercial fishing industry and into the future.

For example: even though the DEIS recognizes that the commercial salmon fishery "provides a large number of seasonal employment opportunities in the harvesting and processing sectors", it notes that "some of these opportunities are filled by residents from outside the region and state." DEIS at 3.3-11 – 3.3.-12. But on the other hand, the DEIS does not discuss the historic out-of-state percentages for mining industry employees. According to the Alaska Department of Labor, from 2012-2017, an average of 36.5% of mining employees were from out of state. This percentage is extremely relevant given the DEIS' estimation of the number of jobs that the Pebble Project would purportedly bring to Alaskans. For example, while the DEIS notes that up to 50% of hires during the construction phase of the Pebble Project could be out-of-state residents, it suggests that 100% of production employees will be from in-state. See DEIS at 4.3-3. This hypothesis is refuted by the Alaska Department of Labor's studies. Given these data, the estimate in the DEIS of operational jobs for Alaskans potentially brought about by the Pebble Project should be reduced by 36.5%.

Alaska, available at http://live.laborstats.alaska.gov/reshire/nonres.pdf, at 7.

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¹⁹ While some cases of temporary seafood contamination may have diminishing adverse effects on seafood markets over time, it is reasonable to conclude that a permanent source of contamination would have permanent adverse impacts on seafood markets.

²⁰ See Alaska Department of Labor and Workforce Development, 2017 Nonresidents Working in

The DEIS nowhere discloses that the few jobs the mine might bring to the area must be balanced against the mine's potential to eliminate commercial fishing-related jobs that account for nearly 75 percent of local employment year after year. For over a hundred years, generations of fishing families and Bristol Bay residents have counted on the salmon fishery to make their livings, and this source of employment could continue long into the future if the fishery remains healthy.

The DEIS ignores that the Pebble Project would trade stable, long-term jobs in the multi-generational commercial salmon fishing industry for unstable, short-term jobs in a boom and bust industry. PLP might argue that the jobs that would be brought about by the Pebble Project would actually go on for much longer, but they can't have it both ways. Either the timeline of the Pebble Project is just 20 years, and therefore only a small number of temporary jobs will be created, or the actual timeline of the true project is much longer. If the additional "reasonably foreseeable" 78 years is considered to gain this potentially greater influx of mining jobs, the Corps would also have to analyze the significant increase in the risk of adverse environmental and socio-economic impacts that would come with the longer period of operations.

VII. The Mitigation Measures Listed in the DEIS are Inadequate and Incomplete.

NEPA requires agencies to include appropriate mitigation measures in its discussion of the environmental impacts of a proposed project and its alternatives. See 40 C.F.R. § 1502.14. Yet mitigation is barely discussed in the DEIS, and it cannot be accurately assessed due to lack of transparency on scope of project and inadequate assessment of likelihood of impoundment failure. But we do note that the DEIS for the Pebble Project does not include any mitigation for unforeseen events or catastrophes. All it includes is a list of 23 potential mitigation actions during project construction and operation. See DEIS Table M-1. However, only two of those potential mitigation actions are listed as "probable" to occur, with the rest considered "possible" or "unlikely" to occur.

VIII. Conclusion.

In summary, the DEIS does not comply with NEPA. The Corps is compelled to withdraw this fundamentally flawed DEIS in order to undertake a comprehensive and accurate analysis of the Pebble Project and its likely impacts to the environment and the economy. No legally sound decisions about the Pebble Project can or should be made based on the present document.

NEPA compliance is not just a "check the box" exercise. There is no coming back from spoliation of the unparalleled fishery resources of Bristol Bay. Where "significant environmental damage may occur to a treasured natural resource, the studies must be conducted first, not afterwards." National Parks and Conservation Ass'n v. Babbitt, 241 F.3d 722, 736 (9th Cir. 2001). An honest assessment of the risks and impacts from the Pebble Project is necessary under NEPA and should certainly be pursued for a project with such significant, and irrevocable, potential impacts.

NEPA stands for the proposition "that we do not intend, as a government or a people, to initiate actions which endanger the continued existence or the health of mankind: That we will not intentionally initiate actions which do irreparable damage to the air, land and water which support life on earth." See Metropolitan Edison Co., 460 U.S. at 773. A DEIS that complies with NEPA, which

the current document demonstrably does not, would reveal conclusively that the Pebble Project mine is just such a project.

Thank you for your consideration of these comments.

Sincerely,

Glenn Reed, President

Pacific Seafood Processors Association

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John Woodruff, COO Icicle Seafoods, Inc.

Mark Palmer, President and CEO Ocean Beauty Seafoods, LLC

Cora Campbell

Cora Campbell, President and CEO Silver Bay Seafoods, LLC

Appendix A

The following companies, whose interests are represented in this letter, collectively purchase, process, and sell to market all major species of seafood in Alaska's \$6 billion/year commercial fisheries. They have invested hundreds of millions of dollars over many decades (some going back a century) in this industry, and they are committed to protecting the integrity of Alaskan seafood brands through the responsible and sustainable use and conservation of fishery resources.

PSPA member processing companies include:

Alaska General Seafoods, Inc.: Alaska General Seafoods owns and operates two processing plants in Alaska: one in Naknek the other in Ketchikan. AGS purchases Alaska sockeye, pink, and chum salmon to create canned, fresh and frozen, and high-quality roe products.

Alyeska Seafoods, Inc.: Alyeska Seafoods owns and operates a processing plant located in Dutch Harbor, Alaska and processes Alaska pollock, Pacific cod, and king and snow crab.

Golden Alaska Seafoods, LLC: Golden Alaska owns and operates a processing vessel that purchases fish from catcher vessels in the Bering Sea and Aleutian Islands. Based in Seattle, all of Golden Alaska's owners are fishermen or processors. The M/V Golden Alaska produces fillet blocks, H&G, mince, surimi, pollock roe and fishmeal, frozen at sea and off-loads in Dutch Harbor, Alaska, or Seattle, Washington.

North Pacific Seafoods, Inc.: North Pacific Seafoods owns and operates seven seafood processing plants in Alaska: Kodiak, Kenai, Kasilof River, Kvichak River, Naknek River, Togiak Bay, and Sitka. It processes Alaska salmon, Alaska pollock, Pacific cod, rockfish, halibut, sablefish, herring, lingcod, prawns, and crab.

Peter Pan Seafoods, Inc.: Peter Pan Seafoods traces its origins back to 1914. Operating out of four shoreside processing facilities in King Cove, Port Moller, Dillingham and Valdez, Peter Pan specializes in producing high quality sustainable Alaska salmon, Alaska pollock, Pacific cod, crab and halibut.

Phoenix Processor Limited Partnership: Phoenix Processor Limited Partnership, in business since 1988, owns and operates two processing vessels in the Bering Sea and U.S. west coast. The majority of the company is owned by fishermen. The company's ships M/V Excellence and MV Ocean Phoenix purchase and process Pacific whiting (hake) and Alaska pollock at sea and create surimi, fillet block, mince, pollock roe, fish meal, and fish oil product.

Trident Seafoods Corporation: Trident Seafoods operates shore-based processing facilities in 10 Alaskan coastal communities, including Akutan, Cordova, False Pass, Ketchikan, Kodiak, Naknek, Petersburg, St. Paul, Sand Point, and Wrangell. In addition, Trident has two floating processors used to support seasonal peak salmon and groundfish processing needs throughout the year. Trident is a family owned company that serves hundreds of independent catcher vessels in nearly all major commercial fisheries off Alaska, including Alaska salmon, pollock, and crab.

UniSea, Inc.: UniSea owns and operates a processing plant in Dutch Harbor, Alaska. It has been processing Bering Sea/Aleutian Islands seafood since 1974, including Alaska pollock, Pacific cod, crab, black cod, halibut, and other species.

Westward Seafoods, Inc.: Westward Seafoods owns and operates a processing plant in Dutch Harbor, Alaska and processes Alaska pollock, Pacific cod, sablefish, fish collagen, crab, and halibut.

Processing companies (non-PSPA members):

Icicle Seafoods: Icicle Seafoods was established in 1965 as Petersburg Fisheries, Inc. Today, Icicle's footprint extends throughout Alaska and operates processing facilities in Petersburg, Seward and Larsen Bay as well as a floating processor and a permanently moored processing vessel in Dutch Harbor. In Bristol Bay, Icicle has processing facilities in Wood River and Egegik, as well as support offices in Naknek and Dillingham. Products include salmon, crab, Pacific cod, halibut, sablefish, herring, Alaska pollock, and roe.

Ocean Beauty Seafoods: Ocean Beauty's onshore processing in Alaska began in the 1930s and today it operates in Naknek, Alitak, Kodiak, Cordova, Excursion Inlet, and Petersburg. It processes all five species of wild Alaskan salmon, along with halibut, black cod, pacific cod, herring, and many other species.

Silver Bay Seafoods, LLC: Silver Bay Seafoods is an Alaskan seafood processing company representing 500 fishermen owners. Silver Bay operates five shore-based plants in Alaska: Naknek, False Pass, Valdez, Sitka and Craig. The company processes Alaska salmon, Alaska pollock, Pacific cod, and herring. Silver Bay has invested tens of millions of dollars over the last 5 years to build a new, state-of-the-art processing plant in Naknek. Its individual fisherman owners have also made significant investments in their limited entry commercial fishing permits, vessels, and gear.