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APPENDIX B

to

Comments of Bristol Bay Native Corporation
on
EPA Region 10's Proposed Determination to Prohibit and Restrict the Use of Certain Waters within Defined Areas as Disposal Sites: Pebble Deposit Area, Southwest AK;
Docket ID No. EPA–R10–OW–2022–0418

Submitted to the U.S. Environmental Protection Agency
September 6, 2022

Appendix B—Input on Consideration of Potential Costs Regarding the Clean Water Act Section 404(c) Proposed Determination for the Pebble Deposit, Southwest Alaska (Public Comment Draft May 2022)

In May 2022 the Environmental Protection Agency (EPA) Region 10 released a draft report considering potential costs ("Draft Costs Report") of the agency's Clean Water Act (CWA) Section 404(c) proposed determination to prohibit and restrict the use of certain waters in the Bristol Bay watershed as disposal sites for the discharge of dredged or fill material associated with mining at the Pebble deposit ("2022 PD").[1] In the 2022 PD EPA asks the public to submit comments on how EPA Region 10 considered costs, including whether all costs have been considered.[2]

As the Regional Alaska Native Corporation for Bristol Bay, BBNC has important knowledge of the economics in the region. In addition, BBNC closely followed the 2014 Watershed Assessment, NEPA, and CWA processes for the proposed Pebble Mine, as well as the corporate maneuverings of the Pebble Limited Partnership ("PLP") and Northern Dynasty Minerals ("NDM") for more than a decade, and thus is substantially familiar with the facts and records available to EPA regarding the economics associated with mining the Pebble deposit. In this Appendix, BBNC summarizes important information found in public financial filings, agency administrative records and other sources regarding the uncertain economics related to mining the Pebble deposit versus the sustainable and robust economy supported by Bristol Bay's unparalleled salmon resource. While, as explained below and acknowledged by EPA, an analysis of costs is not an appropriate element for EPA to consider in making a decision under Section 404(c), the public record nevertheless shows that the economic benefits of Bristol Bay's robust salmon ecosystem are certain and sustainable, and that they far outweigh the speculative benefits from mining the Pebble deposit. Moreover, mining the Pebble deposit would be detrimental to the pristine fishery and thus come with significant costs. Consequently, the public can be assured that final 404(c) action that removes the threat posed by the proposed Pebble mine will not have a detrimental effect on the economy, in any form.

A. EPA Need Not Consider Costs

As an initial matter, EPA correctly acknowledges in its Draft Costs Report that it is not required to "consider non-environmental costs, such as the economic benefits of a forgone project" when undertaking a Section 404(c) action.[3]

The plain text of the Clean Water Action, the congressional intent as evidenced by the Section 404(c) legislative history, and EPA's own interpretation of the statutory factors the agency is permitted to consider when undertaking a 404(c) action notably do not include consideration of potential costs.

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[1] EPA, *Consideration of Potential Costs Regarding the Clean Water Act Section 404(c) Proposed Determination for the Pebble Deposit Area, Southwest Alaska*, *available at*: https://www.regulations.gov/document/EPA-R10-OW-2022-0418-0002 [hereinafter "Draft Costs Report"].

[2] EPA, Proposed Determination of the U.S. Environmental Protection Agency Region 10 Pursuant to Section 404(c) of the Clean Water Act, Pebble Deposit Area, Southwest Alaska (May 2022), at p. 7-2 [hereinafter "2022 PD"].

[3] Draft Costs Report, at p. 4.

The text of Section 404(c) of the Clean Water Act makes no mention of economic impacts as a consideration for the agency when exercising its authority. The Act directs the agency to consider only whether "the discharge of [dredged or fill] materials into such area will have an unacceptable adverse effect on municipal water supplies, shellfish beds and fishery areas (including spawning and breeding areas), wildlife, or recreational areas."[4]

Moreover, Section 404(c)'s legislative history confirms that Congress intended the section to serve as an environmental check on the Army Corps' permitting authority under Section 404. An early House amendment to the bill would have given the Army Corps the power to administer the permitting of dredged or fill material without EPA oversight. Instead, the Army Corps would have been, by itself, "required to determine that the discharge would not unreasonably degrade or endanger human health, welfare, or amenities or the marine environment, ecological systems, or economic potentialities."[5] That scheme for the Section 404 permit program did not survive the House and Senate conference committee; instead, economic potentialities was dropped from the statute and the EPA was given oversight authority to ensure administration of the 404 program fulfills the environmental and ecological priorities of the Clean Water Act.

In line with the statutory language, EPA itself has excluded economic factors from its Section 404(c) regulations. Instead, the agency in its rulemaking process noted:

> [S]ection 404(c) does not require a balancing of environmental benefits against non-environmental costs such as the benefits of the foregone project. This view is based on the language of 404(c) which refers only to environmental factors. The term "unacceptable" in EPA's view refers to the significance of the adverse effect—e.g. is it a large impact and is it one that the aquatic and wetland ecosystem cannot afford.
> […]
>
> there is no requirement in 404(c) that a cost/benefit analysis be performed, and there is no suggestion in the legislative history that the word 'unacceptable' implies such a balancing.[6]

While EPA's Draft Costs Report is helpful for disclosing economic information to the public for its consideration and participation in the public comment process, EPA should not rely on costs analysis when making a final Section 404(c) determination. Indeed, the agency should be mindful of not relying on statutory factors that have not been enumerated by Congress.[7] To the extent the agency would like to know about costs for such contextual purposes, BBNC is providing in Appendix B additional information for the agency's consideration. As this additional information shows, the ongoing, positive economic role of the ecosystem services provided by Bristol Bay's pristine waters far outweighs the potential loss of speculative revenues from the proposed Pebble Mine.

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[4] 33 USC § 1344(c).

[5] JOINT EXPLANATORY STATEMENT OF THE COMMITTEE OF CONFERENCE, Pub. L. No. 92-500 reprinted in 1 Legislative History of the Federal Water Pollution Control Act Amendments of 1972, at 324 (1973)(emphasis added).

[6] 44 Fed. Reg. 58,076, 58,078 (Oct. 9, 1979).

[7] *Motor Vehicle Mfrs. Assn. of United States, Inc. v. State Farm Mut. Automobile Ins. Co.*, 463 U.S. 29, 43 (1983) (agency action arbitrary and capricious for relying on a factor which Congress had not intended for it to consider). *See also*, Alliance to Save the Mattaponi v. EPA, 606 F. Supp. 2d 121, 140 (D.D.C. 2009) (relying on any factors outside those statutorily mandated by Congress is arbitrary and capricious).

B. UNCERTAIN ECONOMICS RELATED TO MINING THE PEBBLE DEPOSIT

1. No Pre-Feasibility or Feasibility Study

In nearly every instance, hardrock mine projects in Alaska complete a preliminary feasibility study before entering into permitting.[8] Contrary to this industry standard, NDM and PLP has merely undertaken preliminary economic assessment ("PEA")-level analysis of the 2020 Mine Plan's economic viability, a less rigorous undertaking with a much higher margin of error.

A mining feasibility study is an evaluation of a proposed mining project to determine whether the mineral resource can be mined economically. There are three types of feasibility study used in mining: Preliminary Economic Assessment, preliminary feasibility, and detailed feasibility. Preliminary feasibility studies have an accuracy within 20% to 30% while detailed feasibility studies have an accuracy within 10% to 15%.[9] PEAs, however, have a much lower level of accuracy.[10] Therefore, reliance on NDM's 2021 PEA should be noted with a large degree of uncertainty.

Indeed, EPA's Costs Draft Report properly notes that "[t]here is uncertainty that the proposed mine would be profitable, even if constructed."[11] EPA's conclusion is backed by PLP and NDM's own admissions in their financial filings that the economic viability of the Project is speculative. For example, in 2022 alone, NDM made the following statements:

- "there are currently no known reserves or body of commercially viable ore."[12]
- "The current mine plan that is included in the Project Description for the development of the Pebble Project is […] not supported by any preliminary or final feasibility study."[13]
- "even if permitting is achieved, there is a substantial risk that […] the Pebble Project may not be proven to be economically mineable."[14]

These statements are similar to statements PLP and NDM have made for well over a decade.[15] A reasonable inference from this history, consistent with other record information including the revelations most acutely (but not solely) exposed in the Pebble Tapes that the true plans are for a much larger mine than that for which PLP sought a Section 404 permit, is that PLP and NDM have avoided the routine analysis of project economics because they know it is economically infeasible.

For more information on impacts of NDM's failure to undertake a more detailed economics feasibility, EPA's Draft Costs Report should consider the following recent publications and

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[8] *See* enclosed BBNC Appendix D, at pp.1911 to 1921 (Chambers and Levit, *Feasibility Studies for Alaska Mines* (March 28, 2018)).

[9] *See* enclosed BBNC Appendix D, at pp.1911 to 1921 (Chambers and Levit, *Feasibility Studies for Alaska Mines* (March 28, 2018)).

[10] *Id*.

[11] Costs Draft Report, at p. 5.

[12] NDM, Second Quarter Financial Report for the period ending June 30, 2022 (filed with the SEC Aug. 16, 2022), available at: https://www.sec.gov/Archives/edgar/data/0001164771/000165495422011412/ndm_6k.htm.

[13] *Id*.

[14] *Id*.

[15] *See* NDM financial filings with the SEC available at: https://www.sec.gov/edgar/browse/?CIK=1164771&owner=exclude.

administrative record documents (found in BBNC Comments on the 2022 PD Appendices C and D):

- Chambers and Levit, *Feasibility Studies for Alaska Mines* (March 28, 2018) (BBNC Appendix D, pp. 1911 to 1921)
- Power Consulting Inc., *Public Comments on the U.S. Army Corps of Engineers Pebble Project EIS Draft Environmental Impact Statement* (June 11, 2019) (BBNC Appendix D, pp. 2123 to 2166).

2. Flawed Preliminary Economic Assessment (2021); Negative Net Present Value

Throughout the Army Corps permitting process, PLP and NDM failed to publish an updated economic analysis of its 2020 Mine Plan. Instead, in response to Army Corps requests for additional financial viability information, PLP submitted a rudimentary economic model regarding the optimization of its mine plan costs. According to the information submitted by PLP, a mining scenario of 115,000 tons per day (smaller than the 2020 Mine Plan proposal) "does not have a positive net present value and is therefore not a feasible economic alternative."[16]

During the EIS process, technical mining experts took issue with the economic feasibility of PLP's 2020 Mine Plan, finding that it may actually have a negative net present value.[17] These concerns were never addressed by PLP in the permitting process, although PLP did disclose to the Army Corps that the economic feasibility numbers were based on the company's outdated 2011 PEA.[18]

In fall 2021, PLP and NDM released a revised Preliminary Economic Assessment ("2021 PEA") detailing the 2020 Mine Plan economics.[19] Notably, as discussed above, as the PEA is not a feasibility or pre-feasibility study, the 2021 PEA is thus a cursory analysis of the economic costs and benefits of the 2020 Mine Plan. The PEA is based on incomplete information and thus contains highly speculative data. Any economic and jobs numbers touted by PLP and NDM are likewise speculative. The PEA itself notes the following limitations with its information and data:

- "The cost estimates contained in the 2021 PEA are completed at a preliminary level. Additional analysis and engineering are required to confirm these results."[20]

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[16] *See* enclosed BBNC Appendix C, pp. 2209 to 2219 (PLP responses to Army Corps Requests for Information 59 and 59a).

[17] Ridolfi Environmental, *Memorandum to Nondalton Tribal Council, Pebble Project DEIS: Inaccurate and misleading statements of Purpose and Need in the Proposed Pebble Project DEIS and Attachment 5A Memorandum re Technical Review of Economic Feasibility of Proposed Pebble Project* (July 1, 2019) (BBNC Appendix C, pp. 1640 to 1691), Borden, Richard, Midgard Environmental Services, *Review of the Pebble Mine Project Preliminary Economic Assessment* (Dec. 1, 2021) (BBNC Appendix D, pp. 2053 to 2062), and Power Consulting Inc., *Public Comments on the U.S. Army Corps of Engineers Pebble Project EIS Draft Environmental Impact Statement* (June 11, 2019) (BBNC Appendix D, pp. 2123 to 2166).

[18] *See* enclosed BBNC Appendix C, pp. 2209 to 2219 (PLP responses to Army Corps Requests for Information 59 and 59a).

[19] NDM Press Release (Oct. 25, 2021): https://northerndynastyminerals.com/site/assets/files/4936/october252021.pdf. Pebble Project Preliminary Economic Assessment NI 43-101 Technical Report, prepared for Northern Dynasty Minerals Ltd., prepared by Ausenco Engineering Canada (effective date: Sept. 9, 2021), on file with the SEC at: https://www.sec.gov/Archives/edgar/data/1164771/000165495421011600/ndm_ex991.htm [hereinafter "2021 PEA"].

[20] 2021 PEA at p. 51.

- The PEA "should not in any way be construed as guarantees that the Project will secure all required government permits, establish commercial feasibility of the Project, achieve the required financing or develop the project"[21]
- "The 2021 PEA includes the use of inferred mineral resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as mineral reserves. There is no certainty that the 2021 PEA results will be realized"[22]
- The PEA admits that metal price fluctuations will impact the financial viability of any mine: "Metal prices and realization costs are subject to significant fluctuation […] These fluctuations could have a significant impact on the financial results of future studies and the actual results achieved by an operating mine."[23]

Likewise confirming these limitations, a review of the 2021 PEA, undertaken by former mining executive Richard Borden, concluded that:[24]

- The PEA is not an independent study. Half of the PEA's authors work or worked directly for NDM or HDI, the companies seeking to develop the mine.
- The PEA has an acknowledged low degree of accuracy (±50%), typical for studies of this kind.
- If metal prices return to their values from 2019, the 20-year mine would have a negative net present value.
- The PEA speculatively assumes that someone else will pay for $2.8 billion of pre-mining infrastructure - $1.68 billion from outsourcing and $1.14 billion from gold streaming.
- The PEA overstates long-term copper prices and likely overstates long-term gold prices.
- The 2021 PEA discloses anomalously low operating costs compared to the 2011 PEA.

Subsequent to issuance of the 2021 PEA, NDM announced entering into a metals streaming deal with an unnamed company whereby the unnamed company will take significant profits from the minerals profits generated from any mine at the Pebble deposit.[25] This deal is expected to cut into the estimated net present value for the 2020 Mine Plan[26] and the effect of this decrease in net present value and impact on the 2021 PEA numbers has not been disclosed by NDM.

For more information on NDM's flawed 2021 PEA and negative net present value of the proposed 2020 Mine Plan and similar mine plans, EPA's Draft Costs Report should consider the following recent publications and administrative record documents (found in BBNC Comments on the 2022 PD Appendices C and D):

- PLP, Response to Army Corps Request for Information 59 (August 2018) (BBNC Appendix C, pp. 2209 to 2214).

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[21] 2021 PEA at p. 20.

[22] 2021 PEA at p. 49.

[23] 2021 PEA at p. 51.

[24] *See* enclosed BBNC Appendix D, pp. 2053 to 2062 (Borden, Richard, Midgard Environmental Services, *Review of the Pebble Mine Project Preliminary Economic Assessment* (Dec. 1, 2021)).

[25] NDM Press Release, Northern Dynasty secures innovative royalty agreement (July 27, 2022), https://northerndynastyminerals.com/site/assets/files/4963/2022-07-27-ndm-nr.pdf.

[26] *See*, *e.g.*, Seeking Alpha, Northern Dynasty royalty agreement reduces dilution risk though challenges remain (Aug. 23, 2022), https://seekingalpha.com/article/4536305-northern-dynasty-minerals-dilution-risk-reduced-challenges-remain.

- PLP, Response to Army Corps Request for Information 59a (October 2018) (BBNC Appendix C, pp. 2215 to 2219).
- Ridolfi Environmental, *Memorandum to Nondalton Tribal Council, Pebble Project DEIS: Inaccurate and misleading statements of Purpose and Need in the Proposed Pebble Project DEIS and Attachment 5A Memorandum re Technical Review of Economic Feasibility of Proposed Pebble Project* (July 1, 2019) (BBNC Appendix C, pp. 1640 to 1691).
- Borden, Richard, Midgard Environmental Services, *Review of the Pebble Mine Project Economic Contribution Assessment* (March 10, 2022) (BBNC Appendix D, pp. 2048 to 2057).
- Borden, Richard, Midgard Environmental Services, *Review of the Pebble Mine Project Preliminary Economic Assessment* (Dec. 1, 2021) (BBNC Appendix D, pp. 2053 to 2062).
- Power Consulting Inc., *Public Comments on the U.S. Army Corps of Engineers Pebble Project EIS Draft Environmental Impact Statement* (June 11, 2019) (BBNC Appendix D, pp. 2123 to 2166).
- Chambers, David M., *Significant Omissions in the Pebble Project EIS Final Environmental Impact Statement* (Aug. 19, 2020) (BBNC Appendix D, pp. 1836 to 1859)
- Chambers, David M., *Why Pebble will be at least a 78-year mine* (March 14, 2019) (BBNC Appendix D, pp. 1875 to 1878).
- Borden, Richard K., *Pebble Mine Draft EIS Comments on Reclamation and Closure* (May 31, 2019) (BBNC Appendix D, pp. 1900 to 1910).

3. Global Metals Market

Given the dynamics of the global metals market, any gold, copper, molybdenum, or other metals mined at the Pebble deposit will not be refined and exclusively used within the United States. This fact, unlined by the lack of a copper smelter in the United States, has been admitted by NDM and PLP and was disclosed in the Pebble Final EIS.[27]

Moreover, on a global scale the copper found at the Pebble deposit is insignificant compared to global demand for the metal, a fact that should be disclosed and analyzed in the Draft Costs Report. The Pebble Mine Project would do little to meet current and future demand for copper and other minerals. PLP's 2020 Mine Plan would have resulted in production of approximately 320 million pounds of copper per year[28] and 7.4 billion pounds of copper overall.[29] At the present annual global consumption rate for refined copper (approximately 48 billion pounds in 2017)[30], this project would supply the global market with a mere 56 days' worth of copper demand.[31] Moreover, PLP's plans, as disclosed in the Final EIS, are to ship all ore to Asia

[27] Pebble Final EIS, at p. 2-73 ("The bulk carrier ships would transport the concentrate to out-of-state smelters, including Asia.") (citing PLP response in RFI 163).

[28] *See*, Northern Dynasty Minerals Corporate Presentation (June 16, 2022), at p. 18, *available at* https://northerndynastyminerals.com/investors/presentations/.

[29] Final EIS, Appendix N (Project Description June 2020), Table 1-1, at page 13.

[30] *See* USGS National Minerals Information Center, Copper Statistics and Information Annual Publication for 2018, *available at*: https://www.usgs.gov/centers/nmic/copper-statistics-and-information. ("The International Copper Study Group projected that global refined copper consumption would be approximately 24 million tons [48 billion pounds] in 2017.").

[31] 7.4 billion pounds from Pebble / 48 billion pounds global consumption annually = 0.1542 * 365 days per year = 56.3 days.

directly from its Cook Inlet port site.[32] PLP cannot claim that the proposed mine is intended to satisfy U.S. demand for ore. Even more importantly, destroying the headwaters of Bristol Bay's pristine salmon fishery and forever placing the region at risk for 56 days of global copper supply, or for 2 and 3 years of U.S. demand and production, respectively, cannot be considered reasonable or beneficial for the overall public interest.

4. Socioeconomic costs versus benefits

Finally, mining the Pebble deposit will result in significant socioeconomic costs and uncertain benefits. A study of the Pebble Draft EIS (Power Consulting 2019) found that the EIS contained unreliable estimates of the impact of the proposed Pebble Project on local and state government revenues and local employment, while simultaneously under-appreciating the volatility of metals mining and negative impacts on local communities.

For more information regarding the negative socioeconomic impacts of mining on local communities, EPA's Draft Costs Report should consider the following recent publications and administrative record documents:

- Power Consulting Inc., *Public Comments on the U.S. Army Corps of Engineers Pebble Project EIS Draft Environmental Impact Statement* (June 11, 2019) (BBNC Appendix D, pp. 2123 to 2166).

C. UNPARALLELED BRISTOL BAY SALMON SUPPORTS SUSTAINABLE AND ROBUST ECONOMY

The Bristol Bay watershed is home to the largest wild sockeye salmon runs in the world and it is the lifeline for the people of Bristol Bay and all those who depend on it. Bristol Bay's wild salmon have been the foundation of Alaska Native culture and traditions in the region for thousands of years. Bristol Bay is a national treasure, producing half of the world's commercial supply of wild sockeye salmon, sustaining 15,000 annual jobs, and generating roughly $2.2 billion in annual economic activity. The robustness of this unparalleled fishery was showcased this year when a record 78 million sockeye salmon returned to Bristol Bay waters.

Detailed here are some important economic factors for EPA's consideration to include in the Draft Costs Report, including citations to relevant documents from the Army Corps permitting process and recent publications and data.

1. Commercial Fishery

Bristol Bay's commercial salmon fishery provides enormous economic benefits to both the Alaska and national economies.[33] The nearly 14,000 seasonal fishing and processing jobs created by the Bristol Bay salmon fishery give rise to an additional 5,852 year-round jobs for United States residents, which generate an estimated $411.7 million in earnings for these workers.[34] On an average year, Bristol Bay salmon fisheries thus create a total economic output

[32] Final EIS, at p. 2-73 (citing PLP response to RFI 163). See also, Final EIS, Appx. K3.12 (shipping routes to Asia). See also, 2021 PEA at p. 263.

[33] *See* McKinley Research Group, The Economic Benefit of Bristol Bay Salmon, p. ES-3, available at: https://www.mcdowellgroup.net/wp-content/uploads/2021/03/economic-benefits-of-bristol-bay-salmon.pdf. *See also*, Knapp, Gunnar, et al., Institute of Social and Econ. Research, Univ. of Alaska Anchorage, The Economic Importance of the Bristol Bay Salmon Industry (April 2013), *available at* http://www.iser.uaa.alaska.edu/Publications/2013_04-TheEconomicImportanceOfTheBristolBaySalmonIndustry.pdf [hereafter ISER Report].

[34] *See id* at 21

value of roughly $2.2 billion.[35] Nearly one-third of all of Alaska's salmon harvest earnings come from the Bristol Bay region.[36]

In the past five years, Bristol Bay sockeye salmon returns and commercial catches have set astounding records. The 2017 sockeye salmon catch in Bristol Bay had a direct harvest value of $216.4 million and—owing to Bristol Bay processing and sustainable management—was almost double the 20-year average of $108.9 million.[37] In 2018, 62.3 million sockeye salmon returned to Bristol Bay, the largest salmon season ever, based on records dating back to 1893, marking the fourth consecutive year that inshore sockeye salmon runs exceeded 50 million.[38] The 2018 season also ranked first in the history of the fishery's ex-vessel value, with a preliminary estimate of $281 million, or 242% above the 20-year average of $116 million.[39] That is, until the 2021 sockeye salmon run became the largest total run on record with 66.1 million fish,[40] only to be surpassed by the 2022 sockeye salmon run of 78.3 million fish.[41]

Bristol Bay Sockeye Salmon Returns (2012-2022)[42]		
Year	**# of Sockeye salmon (million)**	**ex-vessel value (million)**
2012	30.0	$115.4
2013	24.2	$134.4
2014	41.1	$198.2
2015	59.1	$99.1
2016	51.7	$155.6
2017	57.6	$216.4
2018	63.0	$277.0
2019	56.4	$303.5
2020	58.3	$141.1
2021	67.7	$260.7
2022	78.4	

In 2021, the top-grossing 10% of Bristol Bay boat fishermen got paid $456,628 on average for their salmon, with a fleetwide average of $184,047.[43] These massive sockeye salmon returns

[35] McKinley Research Group, The Economic Benefit of Bristol Bay Salmon, p. ES-3, available at: https://www.mcdowellgroup.net/wp-content/uploads/2021/03/economic-benefits-of-bristol-bay-salmon.pdf.

[36] *See* Woodby, D., et al. Commercial Fisheries of Alaska, ADF&G Special Public. No. 05-09 (June 2005), *available at* https://alaskafisheries.noaa.gov/sustainablefisheries/sslmc/may-06/adfg/05-adfg-report.pdf.

[37] *See* ADF&G, 2017 Bristol Bay Salmon Season Summary (Sept. 14, 2017), http://www.adfg.alaska.gov/static-f/applications/dcfnewsrelease/865497019.pdf.

[38] *See* ADF&G, 2018 Bristol Bay Salmon Season Summary (Sept. 18, 2018), http://www.adfg.alaska.gov/static/applications/dcfnewsrelease/989536277.pdf. The Nushagak and Kvichak River systems alone accounted for more than 50 million returning sockeye in 2018, or more than 80% of the entire Bristol Bay run.

[39] *Id*.

[40] Alaska Dept. of Fish and Game, 2021 Bristol Bay Salmon Season Summary (Sept. 29, 2021), http://www.adfg.alaska.gov/static/applications/dcfnewsrelease/1337414316.pdf.

[41] https://www.adfg.alaska.gov/index.cfm?adfg=commercialbyareabristolbay.harvestsummary.

[42] Data compiled from Alaska Dept. of Fish and Game Annual Management Reports, *available at*: https://www.adfg.alaska.gov/index.cfm?adfg=commercialbyareabristolbay.salmon#management.

support a large uptick in the region's drift permit prices. In 2021, the average selling price was $195,400.[44] As of August 2022, the mean selling price of a Bristol Bay salmon drift gillnet permit for this calendar year is $233,200.[45]

For more information on the economic benefits of the Bristol Bay salmon fishery, EPA's Draft Costs Report should consider the following recent publications:

- McKinley Research Group, *The Economic Benefit of Bristol Bay Salmon* (February 2021), *available at*: https://www.mcdowellgroup.net/wp-content/uploads/2021/03/economic-benefits-of-bristol-bay-salmon.pdf.
- Alaska Dept. of Fish and Game, 2021 *Bristol Bay Area Annual Management Report, Fishery Management Report No. 22-14* (June 2022), *available at*: https://www.adfg.alaska.gov/FedAidPDFs/FMR22-14.pdf.
- Rachel Donkersloot/Coastal Cultures Research, *Righting the Ship: Restoring Local Fishing Access and Opportunity in Bristol Bay Salmon Fisheries, report prepared for The Nature Conservancy* (July 2021), *available at*: https://www.nature.org/content/dam/tnc/nature/en/documents/RightingTheShip_elec_2021.pdf
- Alaska Commercial Fisheries Entry Commission, *Estimated Permit Value Report, Salmon, Drift Gillnet, Bristol Bay*, *available at*: https://www.cfec.state.ak.us/pmtvalue/X_S03T.HTM.

2. Economic Value of Subsistence

The Bristol Bay watershed's streams, wetlands, and other aquatic resources support a more than 4,000-year-old subsistence-based way of life for Alaska Natives. Bristol Bay communities are self-reliant, operating without the benefit of interconnected road and utility systems, and subsistence use of wild resources is the most consistent and reliable component of the local economy.

As a starting point for the economic value of subsistence use in the Nushagak and Kvichak River watersheds, a 2012 study on subsistence commissioned by BBNC showed that the vast majority of households in the region rely on subsistence fishing, hunting, and gathering for a large percentage of their food.[46] Given the extremely high cost of groceries in rural Alaska, replacing the salmon harvest with store-bought meat would cost approximately $7,500 (in 2011 dollars) for the average Alaska Native family, representing nearly 20% of the average Alaska Native household income.[47]

3. Recreation and Sports Fishery

The discharge of dredged or fill material associated with mining the Pebble deposit will adversely impact sportfishing, given the well-documented likely adverse effects to the aquatic

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[43] https://www.seattletimes.com/seattle-news/environment/villages-hurt-as-fishermen-from-wa-other-states-buy-lucrative-bristol-bay-permits/ (citing statistics compiled by the Alaska Commercial Fisheries Entry Commission).

[44] *Id*.

[45] Alaska Commercial Fisheries Entry Commission, Estimated Permit Value Report, Salmon, Drift Gillnet, Bristol Bay, *available at*: https://www.cfec.state.ak.us/pmtvalue/X_S03T.HTM.

[46] *See* enclosed BBNC Appendix D, at pp. 2269 to 2719 (Callaway, Don, *A Statistical Description of the Affected Environment as it Pertains to the Possible Development of the Pebble mine—17 Communities in Bristol Bay* (a study funded by BBNC) (2012)).

[47] *Id* enclosed BBNC Appendix D, at pp. 2696 to 2697 (Callaway pp. 27-28).

ecosystem and fisheries. Similarly, bear viewing would be adversely impacted, as bear habitat — both direct losses as well as reduced food availability — would be diminished as a result of the discharges associated with mining the Pebble deposit.

These activities are significant: tourism in the Bristol Bay region produced more than 2,300 seasonal jobs in Alaska and 67.9 million in labor income in 2019.[48] More than 20,000 anglers fish recreationally in the region each year, and roughly 100 lodges and camps cater to tourists focused on sportfishing and bear viewing.[49] Approximately 20,000 people visited Katmai National Park and Lake Clark National Park and Preserve in 2019 to view bears, spending roughly $20 million to do so.[50] An economic study of the industry estimated total business activity of approximately $34.5 million in sales and $10 million in direct wages and benefits from bear viewing in the region.[51]

For more information on the economic benefits of the Bristol Bay sports fishery and recreation, EPA's Draft Costs Report should consider the following recent publications (found in BBNC Comments on the 2022 PD Appendix D):

- McKinley Research Group, The Economic Benefit of Bristol Bay Salmon (February 2021).
- Young, Taylor B. & Little, Joseph M., *The Economic Contributions of Bear Viewing in Southcentral Alaska* (May 2019).

D. BRISTOL BAY NATIVE CORPORATION INVESTMENTS IN RESPONSIBLE RESOURCE DEVELOPMENT

In furtherance of our Responsible Resource Development policy, BBNC seeks out values-driven investments in the Bristol Bay region and its sustainable economies. BBNC defines investment in the traditional sense, placing top value on the returns generated by our businesses throughout Alaska and across the continent. Guided by traditions, we know that investing in the culture, education, and sustainable future of Bristol Bay communities pays off for everyone. In particular, BBNC seeks out economic opportunities that promote Bristol Bay's pristine ecosystems and world-class fishery. Across the Bristol Bay region wildlife flourishes across stunningly varied terrain and vivid strands of our Native traditions run throughout the culture. Built on the shores of Lake Aleknagik and steeped in a blend of both Native and western history, BBNC's Mission Lodge draws travelers from all corners of the globe to experience fishing in Bristol Bay. Our Katmailand Lodges – Kulik Lodge, Brooks Lodge, and Grosvenor Lodge – offer a variety of sport fishing and wildlife viewing experiences within Katmai National Park. Such developments are consistent with our Fish First policy.

In addition, BBNC works to help provide fuel to the Dillingham, Naknek, Clark's Point, and Manokotak through our subsidiary Bristol Bay Fuels. Bristol Bay Fuels is regional supplier, providing customers with home heating and bulk fuel distribution and delivery, project support, and personalized solutions to meet the growing needs of Western Alaska.[52]

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[48] McKinley Research Group, The Economic Benefit of Bristol Bay Salmon, p. ES-3, *available at*: https://www.mcdowellgroup.net/wp-content/uploads/2021/03/economic-benefits-of-bristol-bay-salmon.pdf.

[49] *Id.*

[50] *Id.*

[51] *See* enclosed BBNC Appendix D, at pp. 2167 to 2210 (Young, Taylor B. & Little, Joseph M., May 2019. *The Economic Contributions of Bear Viewing in Southcentral Alaska*. University of Alaska Fairbanks).

[52] https://bristolbayfuels.com/.

As a corporation, we seek out opportunities for growth across the globe. We convert our profits into benefits for our shareholders in the form of dividends, economic development, employment, and educational opportunities.[53] BBNC's long-term priorities include developing prudent economic opportunities in the Bristol Bay region through strategic partnerships and leveraging of BBNC resources.[54] To that end, as of July 2022, BBNC employs 124 shareholders across its operations, of which 114 employee-shareholders are based in Alaska with 14 either living in or commuting to work from Bristol Bay. For fiscal year to date, BBNC shareholders have earned $5,161,379 in wages.

Another long-term priority for BBNC is to enhance shareholder workforce readiness through support of education, training, and workforce development initiatives.[55] As such, over the past 5 years, BBNC has assisted over 600 shareholders to gain employment. BBNC also arranges and manages training opportunities, including hosting 16 interns in the past year,[56] hosting 14 youth at Culture Camp last year,[57] enrolling 19 shareholders in our Training Without Walls Leadership Development program,[58] and funding more than $623,000 training opportunities that led to shareholder jobs in the areas of CDL, construction, IT, security, and culinary arts. Finally, BBNC invests over $100K a year in youth, culture and education/training programs such as the Bristol Bay Regional Career & Technical Education program, the Bristol Bay Fly Fish & Guide Academy, the Bristol Bay Ciulistet Young Leaders Program, the ANSEP Middle School Academy, the BBNA Youth Workforce Programs, and the Student Conservation Association.

These economically beneficial programs are sustained by the economic opportunities afforded to the region owing to the pristine and world-class salmon fishery.

E. HIGH COSTS OF SALMON RESTORATION AND SALMON RUN FAILURES

Finally, EPA's Draft Costs Report should consider available data regarding the historical high costs of salmon restoration and salmon run failures as evidenced in examples from Washington, Oregon, California, and in other regions of Alaska.

With respect to restoration, efforts to restore lost salmon populations in the United States are extremely expensive—ranging in the multiples of billions of dollars—and are largely unsuccessful.[59] The high costs of restoration efforts can be seen in response to both catastrophic events and from routine operations damaging salmon-bearing waters.

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[53] https://www.bbnc.net/our-corporation/about/.

[54] https://www.bbnc.net/our-corporation/about/values-goals/.

[55] https://www.bbnc.net/our-corporation/about/values-goals/.

[56] https://www.bbnc.net/for-shareholders/shareholder-development/internships/.

[57] https://www.bbnc.net/for-shareholders/bbncculturecamp/.

[58] https://www.bbnc.net/for-shareholders/shareholder-development/leadership-development/training-without-walls/.

[59] For example, from 1997 to 2001, the U.S. spent $1.5 billion on Columbia River salmon and steelhead restoration activities. Despite this expenditure, and many others, Columbia River Pacific Salmon populations remain on the Endangered Species Act list of threatened and endangered species. See, United States General Accounting Office. *COLUMBIA RIVER BASIN SALMON AND STEELHEAD: Federal Agencies' Recovery Responsibilities, Expenditures and Actions*. Report to the Ranking Minority Member, Subcommittee on Fisheries, Wildlife, and Water, Committee on Environment and Public Works, U.S. Senate. GAO-02-612, available at: https://www.gao.gov/assets/gao-02-612.pdf.

The failure of salmon runs also comes at a high cost, as unfortunately evidenced by the collapse of salmon runs in other regions in Alaska, including the Yukon, Kuskokwim, and Chignik watersheds in 2020.[60] The collapse of these runs led to federal disaster declarations, which in turn open the door for significant federal expenditures to assist impacted communities.[61]

These massive costs can be avoided by maintaining the pristine Bristol Bay waters that support the salmon fishery. The Draft Costs Report should account for the economic benefits of protecting Bristol Bay's waters from mining the Pebble deposit by accounting for the costs of restoration avoided. Indeed, as the Draft Costs Report acknowledges the benefits of Bristol Bay's pristine waters and robust salmon population "are currently being realized and [] have been accruing for centuries."[62]

[60] *See e.g.*, MacArthur, Federal disasters declared for 14 Alaska fisheries - Alaska Public Media (Jan. 25, 2022), *available at*: https://alaskapublic.org/2022/01/25/federal-disasters-declared-for-kuskokwim-and-yukon-salmon-fisheries/. *See also*, NOAA Fisheries—Fishery Disaster Assistance, https://www.fisheries.noaa.gov/national/funding-and-financial-services/fishery-disaster-assistance.
[61] *See id*.
[62] Draft Costs Report at p. 4.