

**Proposed Pebble Project  
Preliminary Draft Environmental Impact Statement  
Review Comments**

**Reviewer:** NARF Technical Team  
**Date:** December 21, 2018  
**Chapter:** Chapter 3: Affected Environment  
**Section:** Section 3.18 Water and Sediment Quality  
**Document:** Sec3.18\_WaterQuality\_FINAL

**Comments**

**General.** Throughout this section, whenever a percentage of the data for an analyte is described as exceeding the most stringent Alaska Department of Environmental Quality (ADEC) criterion, please indicate the nature of the criterion as well as whether other less stringent criteria are exceeded. This will help the reader determine whether the criterion being exceeded is relevant to the resources present. For example, a drinking water criterion in a river that is not used for drinking water is less relevant than a criterion meant to protect fish or individuals eating fish.

Comparison of seep samples to surface water criteria may not be fully relevant, since seeps are more indicative of groundwater conditions, and seep water will be quickly diluted in surface water bodies. Seep water quality may however be an indicator of the differential impacts of natural mineralized deposits on various rivers and lakes.

**Section 3.18.1 Mine Site Area. 3.18.1.1 Geochemistry. Geochemical Characterization.** This subsection seems to go back and forth between current conditions and testing designed to predict conditions once the proposed mine is operating and mineral deposits are exposed and processed. The latter is not representative of current conditions and would seem to belong more appropriately in Chapter 4.

To what extent could the lack of characterization of concentrate hinder evaluation of potential impacts on water quality, sediment quality, and soil quality (in areas where concentrate may be loaded or unloaded)? Since this is likely the material with the most concentrated metals, this is an important data gap to fill prior to releasing a Public Review Draft EIS.

**Section 3.18.1.2 Surface Water Quality. pH.** In this and other sections where water quality parameters fall outside ADEC water quality criteria in natural, undeveloped environments, please provide some insight or explanation as to why this would be. This would help the reader

understand any unusual natural conditions that might either mitigate or exacerbate impacts from the proposed project.

**Temperature.** Please refer to the following sentence in the third paragraph of this subsection: *"Mean annual temperature trends in the region indicate that air temperatures have increased approximately 3°C over the past 50 to 60 years related to large-scale climate oscillation (Knight Piésold 2012, 2018a), trends that are predicted to continue into the next century (SNAP 2018)."* Is USACE seriously contending that climate change plays no part in this current or future predicted trend? To the extent that air and water warming may cumulatively exacerbate chemical or other impacts to water, fish, or other resources, the latest climate science should be incorporated and used in the EIS.

**Section 3.18.2.2 Groundwater Quality. Mine Access and South Access Roads. North Road.** It is unclear from these discussions whether there are groundwater data for these areas, or if this discussion is based on conjecture based on the lithology of the area. As with so many aspects of this PDEIS, only the proposed mine site appears to have been sampled or studied in any detail.

**Section 3.18.2.3 Substrate/Sediment Quality. Chemical Quality.** Discussion of stream and pond sediment quality in this section is quite vague (e.g., *"no known existing contamination."*) Please describe the data in more detail and compare it to ADEC sediment quality standards, as is done in other sections.

**Section 3.18.3 Marine Ports. 3.18.3.1 Surface Water Quality.** Each of the proposed alternatives should be presented and evaluated equally in the EIS. Putting information on Alternative 2 and Alternative 3 in an appendix makes it seem that these alternatives are not being seriously considered.