

Pebble EIS Draft Mitigation Chapter
EPA Comments
12/21/18

The EPA appreciates the opportunity, as a cooperating agency, to provide you with these comments on the preliminary draft Mitigation Chapter 5 (11/6/18 review draft) of the Pebble EIS. Our comments are provided in table format below. Our public comments on the Draft EIS may include additional concerns or recommendations. These interagency comments or portions thereof may be protected by the deliberative process privilege.

Page	Section	Existing text (if applicable)	Recommendation
	Table 5-2	General comment on Table 5-2	In addition to listing the impacted resource(s) addressed and providing a description of the proposed mitigation, we recommend that the table: (1) briefly explain the potential impact that would be mitigated by the proposed measures; (2) describe how effective the mitigation measure would be at mitigating the impact; (3) provide a reference to the EIS section or other document (e.g., permit application, PLP plan, etc.) that includes the detailed description of the mitigation measure); and (4) disclose whether the mitigation would be required by a particular permit or approval (and identify the specific permit/approval and agency). This information is commonly included in mitigation tables in EISs and will provide additional clarity and make it easier to assess the effectiveness of the measures in reducing impacts. Section 5.2.3 implies that effectiveness would be addressed later, but it is not clear how impacts can be determined without a current assessment of effectiveness.
5-1	5.1.1	"NEPA requires federal agencies to consider appropriate mitigation measures to avoid or minimize specific impacts"	We recommend revising this statement to clarify that NEPA's definition of mitigation includes measures to rectify, reduce and/or compensate for adverse impacts in addition to avoidance and minimization measures (40 CFR 1508.20; 40 CFR 1502.14). Our recommended text is as follows: "NEPA requires federal agencies to consider appropriate mitigation measures to avoid, minimize, rectify, reduce or eliminate, and/or compensate for specific impacts."
5-1	Table 5-1	"Impact-reducing actions or designs that an applicant has committed to as	We recommend the following revision to this statement:

		part of their Proposed Action. Commonly referred to as avoidance and minimization.”	“Impact-reducing actions or designs that an applicant has committed to as part of their Proposed Action. Commonly referred to as avoidance, minimization, and compensation.”
5-2	Table 5-1	“Compensating for an impact by replacing or providing substitute resources or environments is one way an agency can use mitigation to reduce environmental impacts associated with proposed projects (CEQ 2010). Compensatory mitigation is a requirement under the CWA for impacts to Waters of the US (WOUS) that cannot be avoided or minimized. Compensatory mitigation requirements are identified in RODs based on the Final EIS.”	We recommend the following revision to this statement: “Compensating for an impact by replacing or providing substitute resources or environments is one way an agency can use mitigation to reduce environmental impacts associated with proposed projects (40 CFR 1508.20 and CEQ 2010). Compensatory mitigation is also a requirement under the CWA for impacts to Waters of the US (WOUS) that cannot be avoided or minimized. Potential compensatory mitigation measures and their efficacy are typically disclosed and evaluated in the Draft EIS and final compensatory mitigation requirements are identified in RODs based on the Final EIS.”
5-2	5.1.3	However, to ensure that environmental effects of a proposed action are fairly assessed, the probability of mitigation measures being implemented must also be discussed. Thus, the EIS and ROD should indicate the likelihood that such measures will be adopted or enforced by the responsible agencies.	Table 5-2 does not currently address the probability that mitigation measures would be implemented. We recommend that providing the recommended information noted in the first comment will correct this.
5-4	5.2.1.2	A list of standard BMPs, permit requirements, and/or industry standards that would likely be required for the Pebble Project is provided below... USACE took these standard BMPs, permit requirements, and industry standards into consideration when assessing the impacts of the project	It is not clear how the list of best management practices in Section 5.2.1.2 compares to the mitigation measures listed in Tables 5-2 and 5-3. For any mitigation measure that is assumed to be in place for the purpose of reducing impacts, as noted in our first comment above, we recommend identifying whether implementation of each measure would be required by the Corps or any other governmental entity, whether it is incorporated as part of the proposed actions, and which entity will be responsible for implementing the measure. We recommend that the DEIS identify mitigation goals, measurable performance standards, and monitoring that would be designed to reduce impacts to a particular level or adopted to achieve an environmentally preferable outcome.

5-5	5.2.2	“Table 5-2 lists the mitigation measures, project elements, and environmental projections, including BMPs...”	We recommend revising an apparent typo in this statement for clarity; it appears “projections” should be “protections.”
5-6	Table 5-2	A Reclamation and Closure Plan (RCP) would be developed during feasibility design work to support State permitting.The project would fully bond for reclamation and closure before commencing construction and the bonding amounts would be updated to address any changes required on a regular basis. The RCP would document the plan for long term closure of the site in a stable condition in compliance with all applicable closure criteria and regulations and would serve as the basis for the development of the closure cost estimate and associated bonding.	Since the RCP would document the plan for long term closure of the site in compliance with closure criteria, we recommend that a draft RCP be developed, analyzed, and disclosed in the DEIS. Otherwise, it will be difficult for agency decision makers and the public to assess the effectiveness and success of the closure actions identified in the project description. In addition, as noted in previous comments to the Corps, we continue to recommend that a draft closure cost estimate be provided, the amount of which is a key factor in determining the effectiveness and ability to successfully implement the closure plan.
5-7	Table 5-2	A Fugitive Dust Control Plan (FDCP) would be developed for the project and the project would use Best Available Control Technology (BACT) and Best Management Practices (BMPs) for fugitive dust management. The FDCP would describe the equipment, methodology, training, and performance assessment techniques that would be utilized for controlling fugitive dust from site activities and wind erosion. The FDCP would be developed during feasibility design work to support State permitting and would be in place prior to construction commencement.	Similar to the comment above, we recommend that a draft FDCP be developed, analyzed and disclosed in the DEIS as part of the overall impacts analysis and mitigation measures required by NEPA. Without a draft FDCP, it is difficult to determine which specific BMPs and control technologies would be used and how they would be implemented. Without this information, it is not clear to agency decision makers and the public how the effectiveness of these control technologies and BMP measures and subsequent reductions in impacts to air quality were evaluated.
5-7	Table 5-2	An Aquatic Resources Monitoring Plan(s) (ARMP) would be developed for the project. The ARMP would be developed in consultation with ADF&G and ADNR as part of the plans of operation during State permitting and would be in place prior to construction commencement. The ARMP would describe the equipment, methodology, training, and assessment techniques that would be	Similar to the comment above and per our comments on Chapter 2, we recommend that a draft ARMP be developed, analyzed and disclosed in the DEIS, so that monitoring (which is a key aspect of the project description) is disclosed and the effectiveness of the monitoring plans and any anticipated triggers for monitoring changes can be understood and evaluated by decision makers and the public.

		utilized to monitor the aquatic environment for any changes resulting from project activities and to allow for an adaptive management approach to address impacts identified.	
5-9	Table 5-2	The project would use BACT for all air emissions sources.	We recommend describing the specific technologies that would be used or providing a reference to the section of the EIS where they are described.
5-10 and elsewhere	Table 5-2	Descriptions mentioning "TSF"	We recommend clarifying to which TSF (pyritic, bulk, or both) these apply where it is not already indicated in the table.
5-10 and elsewhere	Table 5-2	"Dry closure of the bulk tailings storage facility (TSF) reduces both the likelihood and consequence of potential TSF failure post closure"	<p>We note that this is the only line that talks about the closure of the bulk TSF, although there is more information on mitigation measures related to the bulk TSF in Chapter 2's proposed action.</p> <p>We recommend ensuring that Table 5-2 includes all design mitigation measures proposed in the project plan.</p>
5-10	Table 5-2	"At closure, the pit lake would be maintained at a level that promotes hydraulic containment of pit water during closure, protecting site groundwater." and "The pit lake would be maintained at a level that provides for additional storage capacity to allow for treatment downtime due to water treatment plant maintenance or other problems without overtopping."	We recommend including details here on the water level proposed in Chapter 4.
5-10	Table 5-2	"The project would use only non-pit quarried rock, or non acid generating (NAG) pit waste that is confirmed not to be neutral metal leaching, in site construction."	We recommend adding information to the DEIS clarifying what is meant by "confirmed not to be neutral metal leaching," along with providing a time scale over which that 'non-leachability' is confirmed to be valid. We recommend that the DEIS describe the methods and criteria that would be used to determine if waste rock and quarry rock is NAG and non-metal leaching and evaluate the effectiveness of the methods/criteria.
5-10	Table 5-2	"...flattened TSF slopes to improve factor of safety beyond industry norms"	We recommend providing the slope that would be used along with that which is the industry norm and state of Alaska requirements for ready comparison.
5-10	Table 5-2	"Two separate operations water treatment plants are proposed to	We recommend there also be an entry that presents water treatment as a mitigation

		avoid co-mingling mine water and contact water and optimize treated water quality.”	measure to minimize environmental impacts of contaminated water.
5-11	Table 5-2	“Storage of all potentially acid-generating (PAG) and/or metal neutral metal leaching waste rock in the pyritic TSF and placement of that waste rock back into the pit at closure improves post closure water quality.”	We recommend providing additional explanation here to clarify where water quality would be improved by this measure. We note that, depending on multiple factors having to do with time for placement of the wastes into the pit, how oxidized the PAG rock becomes while on the surface prior to placement, time for water cover to be sufficient, and amount of oxidation of acidic salts on pit walls and fissures that will influence pH, it is also possible that the pit water quality could be negatively impacted by placing this material into it. We recommend that additional information be provided that explains how water quality would be improved due to this mitigation measure.
5-11	Table 5-2	“Segregation of bulk and pyritic tails and placement of pyritic tailings back into the pit at closure improves post-closure water quality...”	We again recommend clarifying specifically where and how the pit water quality would be improved post-closure.
5-11	Table 5-2	“The pyritic TSF would be a fully lined facility to minimize water quality impacts and facilitate closure.”	We recommend clarifying how the liner would facilitate closure and providing additional detail to support this statement.
5-11	Table 5-2	“A water balance that does not store excess water in the bulk TSF reduces the potential for TSF failure or spills.”	We recommend rephrasing this measure to include the mitigation measure in Chapter 4.18 (in quotes) along with explaining what is being mitigated, as follows: “Excess water from the pyritic TSF would be pumped to the main WMP” to reduce the potential for TSF failure or spills from overtopping.
5-11	Table 5-2	“Three separate discharge points for treated water and strategic timing of water release to minimize impacts, or avoid, impacts to fish habitat.”	We recommend including the details from Chapter 4.18 (page 6) that are stated to minimize impacts from treated water discharge. In addition, please see our comments on section 4.16 that recommend more detailed information be provided to support the analysis of the strategic discharge monitoring plan.
5-11	Table 5-2	“No secondary gold recovery plant, eliminating the need to use cyanide on the project.”	We recommend adding water and sediment quality, spill risk, and fish values to the Resource Affected column.
5-12 and 5-13	Table 5-2	“Material sites would be sampled for acid rock drainage (ARD) and metal leaching potential prior to development during detailed design.	We recommend combining these two measures for consistency. The first currently applies to the transportation corridor and the second to both the transportation corridor

		<p>Material sites that have the potential for ARD or metal leaching would not be utilized.”</p> <p>“All road/pipeline material sites would be tested for ARD and metal leaching prior to excavation and use.”</p>	<p>and the natural gas pipeline.</p> <p>As noted above, we recommend that the DEIS describe the methods and criteria that would be used to determine if rock is NAG and non-metal leaching and evaluate the effectiveness of the methods/criteria.</p>
5-12	Table 5-2	<p>Culverts and bridges would be designed to optimize fish passage and the project would use BMPs for design, construction, and maintenance.</p>	<p>We recommend clarifying whether all culverts would be designed to optimize fish passage. Other sections of the EIS indicate that only some culverts would.</p>
5-13	Table 5-2	<p>“Gas pipeline...removing the need for horizontal directional drilling (HDD) under major river crossings...”</p> <p>And the next row: “Detailed HDD plans would be developed during detailed design for all HDDs that are required...”</p>	<p>We recommend revising these measures for clarity and consistency. Currently both apply to the gas pipeline corridor during construction. The first has surface water hydrology, fish values, and water and sediment quality listed as resources affected, while the second lists only water and sediment quality.</p> <p>We recommend clarifying where HDD would be required in the 2nd instance, and updating the Resources Affected, if necessary. We note that Chapter 4.18, page 19 states “...(HDD) operations would be required only for the natural gas pipeline at the Kenai shore approach near Anchor Point” in the section discussing groundwater quality.</p>
5-15	5.3.2	<p>“Appendix M includes a list of specific measures suggested during the scoping process”</p>	<p>As Appendix M was not provided to the EPA to review, we were not able to review the complete list of specific measures suggested during the scoping process.</p>
5-16 and 5-7	Table 5-3 and Table 5-2	<p>“Use palliatives to reduce airborne dust.”</p>	<p>Control of fugitive dust is addressed in multiple places in the EIS. Table 5-3 includes the use of palliatives to reduce dust as a proposed measure that is “likely to be implemented” for air quality, water and sediment quality, fish values, soils, and health and safety. Table 5-2 (2nd row on page 7) presents that a Fugitive Dust Control Plan would be developed and is indicated for only air quality. Additionally, Chapter 4.18, page 7 discusses dust suppression in more detail than Table 5-2, and includes that dust will impact groundwater, surface water, and sediment.</p> <p>As noted above, we recommend that a draft FDGP be developed along with the DEIS or, at</p>

			<p>a minimum, that the DEIS identify the specific dust control measures that will be implemented as part of the proposed action. We recommend that the DEIS explain how any measures in Table 5-3 would differ from what is proposed. We also recommend that the mitigation details found in Chapter 4.18 be included in table 5-2. Finally, we recommend ensuring that both tables capture the appropriate list of all affected resources.</p>
5.0		Not captured	<p>We recommend including identified missing mitigation measures in Chapter 5. Our recommendation includes, but is not limited to, the following measures:</p> <p>Mitigation measures for the Concentrate Pipeline Variant are discussed in Chapter 4.18 although are not presented in this Chapter.</p> <p>Typical design mitigation measures for fuel pipelines (e.g., automatic shutoff valves) that were proposed in Chapter 2 and Chapter 4.18 are not presented in this Chapter.</p> <p>Multiple other design mitigation measures are proposed in Chapter 4.18 that are not included in this Chapter (see comments on Chapter 4.18).</p>
5.0		General	<p>In discussing the evaluation of options for alternatives, Section 2.3 states that “Others were not carried forward as options because they were more properly characterized as potential mitigation measures.”</p> <p>We note that the Preliminary DEIS does not clarify, in either Chapter 2 or Chapter 5, which alternatives fell into this category. We recommend that Chapter 5 describe which alternatives eliminated from detailed analysis are instead being considered as mitigation measures.</p>