

EPA Comments – Pebble Project Preliminary Draft EIS, Section 3.24 - Fish Values

Agency	Comment Number	Section, Paragraph, and Page #	Relevant Text/Subject	Comment	Response
EPA	1	Section 3.24.1.1, Page 3.24-11	“The corridor, including access roads, would cross a total of which 44 rivers and streams documented to support fish.”	We recommend adding information to the DEIS about miles of stream in proximity to roads, as well as those streams being crossed by roads (e.g., the mine access road to the North Ferry Terminal runs along a stream).	As noted in Section 3.24, Fish Values, streams not crossed by but within 0.25 mi of the road/pipeline corridor were defined as within the EIS Analysis Area and such streams were identified in the text.
EPA	2	Section 3.24.1.1, Page 3.24-11	Last paragraph: “Table 3.24-3 summarizes...”	We recommend specifying how much sampling has been conducted in this region. Please clarify whether streams have been sampled and found not to have anadromous fishes, or if few streams have been sampled along the transportation corridor.	All known anadromous streams identified in the Anadromous Water Catalog (AWC) were sampled for fish presence except 2 rivers well known to contain salmon (Newhalen and Pile rivers), and 2 small tributaries to Cook Inlet (Browns Peak Creek and trib to Cottonwood Bay). Fish sampling was also conducted at over 140 other stream crossings to determine fish presence or absence and species composition.
EPA	3	Section 3.24.1.1, Page 3.24-12	Table 3.24-3	We recommend specifying how mileage was calculated (e.g., total mileage upstream of crossing).	Table footnote #2 specifies that mileages represent distance from the crossing downstream to mouth or confluence with a tributary.
EPA	4	Section 3.24.1.1, Page 3.24-12	Table 3.24-3	It appears the table referenced in footnote 1 should be 3.24-4. We recommend making this correction.	This table has been revised and no longer references another table.
EPA	5	Section 3.24.1.1, Page 3.24-13	First sentence in South Access Road section	It appears the cited figure should be 3.24-5. We recommend making this correction.	Figure reference has been corrected.
EPA	6	Section 3.24.1.2, Page 3.24-14		Throughout, we recommend providing absolute abundance for fish, not just relative distribution and abundance.	Absolute abundance was not assessed; instead index counts using aerial surveys, one-pass electrofishing, snorkel counts, minnow traps were utilized to assess relative distribution and abundance.
EPA	7	Section 3.24.1.2, Page 3.24-19		If 1+ age sockeye salmon were observed in SFK, we recommend clarifying where they overwinter. For example, are some sockeye juveniles stream-rearing type, or	Environmental baseline length-frequency distributions indicated that 0+ and 1+ sockeyes resided in the SFK (R2 et al. 2011). Most

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				are they using Frying Pan Lake?	overwintering of 1+ juveniles was thought to occur in the lower 2 reaches of the SFK. Four juvenile sockeye were observed in Frying Pan Lake during EBD studies (R2 et al. 2011), 3 sampled in July 2004 were fry <50mm in length (AWC data); the length of the 4 th was not identified. Similar text will be added to the section.
EPA	8	Section 3.24.1.2, Page 3.24-23	“Clams are abundant along many Cook Inlet beaches.”	We recommend that this section be moved into 3.24.1.3 “Aquatic Invertebrates”.	Text was moved to appropriate section.
EPA	9	Section 3.24.1.3, Page 3.24-23		We recommend renaming this section to reflect that both invertebrate and algae data are presented.	Comment noted.
EPA	10	Section 3.24.1.3, Page 3.24-24	“...were calculated from macroinvertebrate data collected using the ASCI method and the Surber method.”	We recommend that the DEIS clarify whether this means “sampled using a Surber sampler”. As worded, this is confusing because ASCI is an index, Surber is a type of sampler, neither is a method per se.	ASCI sampling methods use kick nets as derived from EPA Environmental Monitoring and Assessment for Surface Waters.
EPA	11	Section 3.24.1.3, Page 3.24-24	“The overall results for both the Surber method...”	We recommend presenting actual abundance data.	Comment noted.
EPA	12	Section 3.24.1.3, Page 3.24-24	“CTI reflects aquatic habitat quality...”	We recommend specifying the possible range of values and what they mean (e.g., is high good quality?).	Revised language in Section 3.24, Fish Values, to read: “ <i>CTI reflects aquatic habitat quality, and is based on the relative tolerance of macroinvertebrate taxa to stressful conditions. CTI scores in 2004, 2005, and 2007 ranged from 3.9 through 6.1, 4.9 through 6.0, and 4.5 through 6.6, respectively (possible range of values zero through ten).</i> ”

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EPA	13	Section 3.24.1.3, Page 3.24-25	“The sampling results for the mine site indicate low-percent EPT, high-percent Chironomidae...”	We recommend presenting the data so the validity of this statement can be assessed; this likely reflects other limitations rather than poor stream health (e.g., need for short generation times), and this statement contradicts a later statement “the presence of these sensitive species is indicative of the comparatively optimal conditions at the site...”	Text revised in Section 3.24, Fish Values, to read: <i>“The overall results for both the Surber method and the ASCI method indicate that Diptera, including the Chironomidae family, is the dominant taxon in the mine site project area; and Ephemeroptera is the majority taxa of EPT. Macroinvertebrate populations with a high proportion of Chironomidae family members in the population can indicate a more stressful aquatic habitat in general (Barbour et al. 1999). The aquatic conditions at the mine site include high numbers of Chironomidae family, which is considered typical for this area (Oswood et al. 1995).</i> <i>These observations are consistent with aquatic-habitat surveys, which indicate that the analysis locations in the mine site area are composed mainly of riffle/cobble stream habitats with few to no human-caused effects. Measurements of habitat parameters at each location were found to be within ranges considered good to optimal for aquatic habitat (Major et al. 2001). Analysis of water quality results indicated good to optimal parameter levels for diverse macroinvertebrate communities, as is generally the case.</i>
EPA	14	Section 3.24.1.3, Page 3.24-25	“Of the Diptera taxa, the Orihocladiinae...”	It appears this should be changed to Orthocladiinae.	Text revised to address comment.

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EPA	15	Section 3.24.1.3, Page 3.24-25	“Taxa richness was greater in ASCI samples (15 to 16 taxa) than compared with Surber and drift samples (five and seven taxa, respectively). The difference in taxa richness indicates that most of the macroinvertebrate taxa diversity is to be found in habitats other than riffle/cobble habitat.”	We recommend specifying how sampling was conducted in each case, in order to support this statement. (It appears more likely that drift samples were not collected at relevant times).	Comment understood. Further discussion of sampling methods will be included in the FEIS and edited for clarity.
EPA	16	Section 3.24.2.1, Page 3.24-29	Figure 3.24-6	We do not recommend citing the EPA on these maps; instead, the document should cite the raw data that the EPA used to generate their maps.	Reference source changed from EPA to Morstad 2003.
EPA	17	Section 3.24.3.5, Pages 3.24-36-37	3.24.3.5 Climate Change	Other sections do not have similar subsections on climate change. This information also has implications beyond fish populations and habitat, therefore we recommend that climate change considerations also be addressed in other sections of the DEIS (e.g., water management on site).	The climate change section has been updated and moved to Section 3.18, Water and sediment Quality.
EPA	18	Section 3.24.3.5, Page 3.24-37	Last paragraph: “populations of Pacific salmon species...)	This paragraph touches on genetic diversity of Bristol Bay salmon populations, and we recommend that this needs to be considered in much more depth. For example, we recommend addressing how potential loss of genetic diversity will affect populations, and the ability to adapt to changing conditions.	Additional discussion of sockeye population and genetic structure in Iliamna Lake region added to Section 3.24, Fish Values.

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EPA	19	Section 3.24	General comment	It will be important to discuss the potential for hydrologic connectivity via groundwater within and among the subbasins, and the implications for transfer of impact. We recommend that this discussion be added to the DEIS. The hydrologic connectivity between SFK and UTC is mentioned at 3.24-7. The potential for this type of connectivity elsewhere within the study area should be discussed, along with a consideration of what this may mean for transfer of hydrologic, water chemistry/quality, or other impacts across and within sub-basins via groundwater.	<p>Groundwater analysis (Sections 3.17 and 4.17, Groundwater Hydrology) has indicated that little groundwater transfer occurs between the 3 subbasins, with the exception of the transfer from SFK to the UTC via UTC Trib 1.19. Effects of this transfer on surface flows and water quality are addressed in the groundwater and surface flow chapters.</p> <p>The presence of losing and emerging groundwater in relation to surface flows, juvenile rearing, and spawning habitat is described for the SFK below the intermittent reach and in the NFK below the mine site.</p>