

3.9.2.7 and 3.9.3. The SEIS determined that no adverse effects to threatened or endangered species would be expected. Section V.C. of the Record of Decision documents EPA's determination of no adverse effect and the concurrence of the U.S. Fish and Wildlife Service and National Marine Fisheries Service with this determination.

**Response to Comment ID: CJ.17**

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The SEIS reflects the available "facts" regarding road and port operations and the possibilities for and feasibility of mitigation. Kivalina residents suggested that the port remain closed until beluga whales have passed the port facility in June and July and that the road remain closed through the entire fall caribou migration season. These closures are included in Alternative D. At the same time Teck states that they only proceed with shipping operations after the Subsistence Committee notifies them that whale hunting is finished for the year. EPA has not been able to determine the effectiveness of the Subsistence Committee and suggested that its procedures be reviewed (SEIS Section 3.12). Although Teck's policy is to close the road when caribou are within 300 feet of the road, it is uncertain how consistently this policy is implemented or whether or not it is effective. That is why EPA included closure through the entire fall caribou migration season, rather than sporadic closure. As discussed in the SEIS, while a fall closure would be more effective in terms of reducing impacts to caribou, implementing this would create economical and logistical hardships. Closing the road for any extended period of time (e.g. a month) would require, at a minimum, additional concentrate storage capacity and increased traffic on the road when it was open to traffic.

**Response to Comment ID: CJ.18**

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The subsistence section in the SEIS (Section 3.12) provides a great deal of information regarding subsistence resources. Appendix D (Subsistence) further provides an expanded discussion of subsistence resources within the area. The public is therefore well informed regarding subsistence resources. The NEPA process requires that these impacts be disclosed and mitigation measures identified. The SEIS discloses the effects of existing operations as well as the effects of the proposed action and alternatives on subsistence resources. Protection of subsistence resources was a key factor in EPA's identification of the environmentally preferable alternative. As noted in the text, EPA's authority under the NPDES program limits the extent of mitigation that may be required as an outcome of the NEPA process. However, EPA encourages both the agencies with broader authorities to protect subsistence resources and Teck to implement appropriate mitigation measures.

**Response to Comment ID: CJ.19**

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We disagree that the SEIS analysis of caribou, migratory water fowl, musk oxen, and wolverines is inadequate. Section 3.9.2.2 discusses caribou (Western Arctic Herd [WAH]) in detail. The population of the WAH has increased substantially since pre-mine numbers and has continued to use the same general migration pattern. While the road appears to have caused some local effects on when and where the caribou actually cross, there is no evidence that the general pattern of migration has been affected or will be affected in the future. The effects on migratory birds are discussed in Section 3.9.2.4. Wolverines and musk oxen are discussed in Section 3.9.2.2. The comparative impacts of the alternatives on all of these species is discussed in Section 3.9.3. The comment does not provide specific information or data to substantiate the claim that detailed analysis of wildlife in Section 3.9 is insufficient. The comment cites some pages of the SEIS (3-121 and 3-123), but it is not clear if this citation is a comment or a statement.

**Response to Comment ID: CJ.20**

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NEPA requires that effects of the proposed action and alternatives be disclosed and analyzed. The effects on wildlife, including mitigation in the form of hazing and other best management practices have been disclosed and analyzed. EPA accepts that personnel may not be available to implement hazing practices 24 hours a day, seven days a week; however, we are confident that the measures Teck proposes will not result in population-level effects to any species in the vicinity of the operation.

The commenter is correct in their assessment of subsistence-related mitigation measures under Alternative B. However, the nature of most of the subsistence-related effects (those resulting from port and road traffic) makes it unlikely that the effects would continue to occur once operations cease.

**Response to Comment ID: CJ.21**

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Traditional knowledge gained from interviews in Noatak and Kivalina formed the basis for much of the resource change characterizations and impact analysis in the subsistence section of the SEIS. For an example of the level of detailed traditional knowledge considered in the analysis, see pages 45 through 51 of Appendix D. Observations of caribou changes from traditional knowledge interviews formed the basis for the SEIS conclusion that the cause of the resource changes associated with Kivalina was road-related activities. Other resources were described similarly based on the level of response from interviewees. The subsistence technical report discusses the methodology employed in data collection in greater detail (Stephen R. Braund & Associates, 2009. *Subsistence Use Areas and Traditional Knowledge Study for Kivalina and Noatak, Alaska*. Prepared for Tetra Tech, Teck Cominco Alaska Incorporated, and U.S. Environmental Protection Agency Region 10. Anchorage, Alaska).

**Response to Comment ID: CJ.22**

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It is unclear what analyses the commenter would suggest be quantified. EPA considered the current literature on global climate change in developing the cumulative effects discussion. We acknowledged that global climate change is occurring and that impacts are experienced more intensely in the arctic region. The SEIS then describes the cumulative impacts of climate change across applicable resource areas such as geotechnical stability, water resources, vegetation, etc. (see SEIS section 3.19). In terms of cumulative effects, the data do not support a quantitative analysis. A quantitative analysis would be a gross estimate given the current information. For example, quantifying the nature or extent of changes to particular vegetation communities or wetland types as a result of climate change during the life of the project would be speculative at best. Equally speculative would be quantifying the changes in the water balance at the site resulting solely from climate change. While the literature provides some generalizations as to specific areas of the United States (e.g., Alaska experiencing longer, warmer summers or increases in the areas exhibiting discontinuous permafrost) these generalized effects do not lend themselves to quantifiable changes in terms of cumulative effects. Rather we included a qualitative discussion of impacts and uncertainties. For certain resources, we identified monitoring that should occur to identify potential changes due to climate change.

**Response to Comment ID: CJ.23**

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As documented in the Record of Decision, , EPA is reissuing the NPDES permit for the Red Dog Mine consistent with Alternative B, which includes limits and conditions based on Clean Water Act requirements, including effluent limits based on current state water quality standards. As described in the SEIS, the draft permit Fact Sheet, and responses to comments on the draft permit,

some of these standards have changed, including the standard for TDS. The analysis in the SEIS and Fact Sheet demonstrates that Teck can meet the TDS limits in the reissued permit.

**Response to Comment ID: CJ.24**

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The effects of previous wastewater discharges in violation of NPDES permit limits have been included in the impact analysis since the data used (e.g., water quality and fish counts downstream of the outfall) represent the full range of conditions downstream of the discharge point. In predicting the effects of the proposed action and alternatives, the impact analysis demonstrates that permit limits will be met by describing the capability of the proposed treatment technologies. In addition, EPA has required that Teck develop a TDS management plan. Using this approach, EPA has provided the requisite hard look at the effects of the continued operation of the Red Dog Mine.

**Northern Alaska Environmental Center (NAEC)**

November 9, 2009 letter from Brook Brisson (BB), NAEC, to Patty McGrath, EPA, Cindi Godsey, EPA, and Tim Pilon, ADEC.

**Response to Comment ID: BB.01**

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Comment noted. See the responses to the comments previously filed by NAEC in Appendix H of the Final SEIS. See the response to comments submitted by Trustees for Alaska.

**Response to Comment ID: BB.02**

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NEPA requires that the analysis consider a range of alternatives. Contrary to the comment, NEPA does not include a requirement that all alternatives be within the lead agencies' jurisdiction. In fact, the Council of Environmental Quality's *NEPA's Forty Most Asked Questions* clearly states "An alternative that is outside the legal jurisdiction of the lead agency must still be analyzed in the EIS if it is reasonable" (see Question #2b). EPA considered a reasonable range of alternatives given the fact that the Red Dog Mine is already an operating mine. See also response to comment 31.014 in Appendix H of the Final SEIS.

**Response to Comment ID: BB.03**

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Section 2.2.1 of the SEIS describes components of the no action alternative (Alternative A). Alternative A assumes no action, which means no reissuance of the NPDES permit. Therefore the 1998 permit limits would continue to be in effect (see SEIS Section 2.3.6.1). In order to meet the TDS limits in the 1998 permit, Alternative A included, as suggested in the comment, "the wastewater treatment system would need to be modified to include pre-treatment by barium or aluminum precipitation followed by reverse osmosis". Although under Alternative A the NPDES permit would not be reissued, the 1998 permit would by definition be administratively extended, achieving the same result as reissuance of a permit with those same effluent limitations. Therefore, a separate analysis of issuing a new permit with the same limitations as the 1998 permit was unnecessary since the effects analyses are essentially covered by Alternative A.

**Maniilaq Association (Maniilaq)**

November 9, 2009 email attachment from Jackie Hill (JH), Maniilaq Association (Maniilaq), to Patty McGrath, EPA.

#### **Response to Comment ID: JH.01**

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Impacts to Kotzebue subsistence resources were not excluded from the SEIS, rather the analysis simply made use of existing data for Kotzebue. Additional data was not collected for Kotzebue due to Kotzebue's distance from the mine, lack of scoping comments suggesting that Kotzebue residents were concerned about subsistence impacts, and Kotzebue's relatively large community (in relation to Kivalina and Noatak) that would make it difficult to determine whether impacts were caused by the mine. The figure on SEIS page 3-188 (Figure 3.26: 1995-2004 Partial Subsistence Use Areas Kotzebue, All Resources) depicts a partial view of subsistence use areas and as noted in the figure, "These maps...do NOT represent a comprehensive description of Kotzebue subsistence activities."

The SEIS determined that the mine has impacted some of Kivalina's subsistence resources, but not Noatak's subsistence resources. Since Kotzebue is even further from the mine than Noatak, EPA does not believe that additional analysis is warranted regarding Kotzebue subsistence use.

#### **Response to Comment ID: JH.02**

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As discussed in Section VI.A. of the Record of Decision, EPA's authority to require mitigation is limited to the measures that can be incorporated, under the CWA, into the NPDES permit. These measures do not include mitigation for subsistence impacts. As the commenter is aware, the cooperating agencies held numerous discussions regarding mitigation and relevant agency authorities. EPA strongly encouraged those agencies with authority to adopt the mitigation and monitoring measures identified in the SEIS. Maniilaq and the National Park Service were present during those discussions, yet neither of these entities or the other cooperating agencies determined that they had authority to require mitigation measures related to subsistence. We suggest that Maniilaq work directly with the NPS, NWAB, State, and Teck to encourage these entities to adopt the measures identified in Section 2.5 of the SEIS. Even though the SEIS process has been completed, the analysis and conclusions of the SEIS can still serve as an important source of information for other agencies and the Applicant to make environmental improvements at the Red Dog Mine and in development of the Aqqaluk ore deposit.

#### **Response to Comment ID: JH.03**

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The mitigation measures identified in Section 2.5 of the SEIS are a result of the SEIS analysis and numerous discussions with the cooperating agencies. Maniilaq was a participant in this process, which included meetings focused on mitigation. As discussed in response to the above comment, EPA's authority to require mitigation is limited. In addition, Maniilaq suggests that additional mitigation is called for, but does not provide any specificity as to what those measures are or should include.

#### **Response to Comment ID: JH.04**

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We respectfully disagree with the commenter's assertion that the quoted text of the Final SEIS is erroneous. While the SEIS concluded that the mine has had an impact on Kivalina's harvest of caribou and beluga, due to lack of dietary baseline data we were not able to analyze whether or not this contributed toward large scale dietary changes. A dietary survey was recommended in the SEIS (Section 2.5) for Kivalina to establish a baseline upon which potential future impacts can be compared.

In terms of large scale changes, Section 3.12.2.1 of the SEIS summarized harvest trends noting that after considering the variability in the harvest data, harvests (of "all resources") in 2007 were not significantly lower than all resources harvest levels in 1992. In turn, the 1992 data are within

the range of variability of data collected in 1965, 1982, and 1983. The correlation between harvest levels and consumption are not well established but it is not unusual within a NEPA analysis to use surrogates, such as using patterns in per capita harvest levels to provide an indication of consumption levels. The relationship between harvest data, consumption, diet, and health are additional steps removed from the information that is currently available. Based on this information and the SEIS analysis, EPA stands by the findings in the quoted text.

**Response to Comment ID: JH.05**

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Please note the response to the preceding comment. EPA's selection of the environmentally preferable alternative was in part based on minimizing effects on subsistence, which extends beyond diet and health into social, cultural, and environmental justice issues. While we believe that the subsistence analysis provides indications that mine-related activities have likely affected some subsistence resources, the data does not support the contention that substantial reductions in harvest levels have occurred. Again, if harvest levels are a surrogate for consumption, the data do not indicate that large scale consumption has been affected, although some resources may be – this can result from the switch from one subsistence resource (e.g. beluga whale) to another (e.g. Dolly Varden char). The SEIS concluded that a dietary survey should be conducted for the affected community (Kivalina), but the SEIS analysis did not indicate that there were subsistence impacts to other communities or other resources other than caribou and beluga harvested by Kivalina residents.

The four criteria identified in the comment apply to “reasonably foreseeable significant adverse effects.” Based on the preceding discussion and information currently available, including the health analyses conducted in Section 3.13 of the SEIS (toward which Maniilaq significantly contributed), EPA does not believe that operations at the Red Dog Mine and the proposed action and alternatives meet the threshold of producing reasonably foreseeable significant adverse effects on health or diet. While health professionals may perceive that a pattern of diminished subsistence harvests could potentially cause “catastrophic” health consequences. The analysis in the SEIS does not show a link between diminished harvest levels and potential changes in diet as a result of mine operations. The commenter provides no specific information or data to change this conclusion.

**APPENDIX C**

**FINAL NPDES PERMIT  
AND NPDES PERMIT RESPONSE TO COMMENTS**