

**GENERAL INSTRUCTIONS FOR EXCEL TEMPLATE:**

1. Do not leave blank rows above or between comments.
2. Do not modify or delete the instructions or the column headings (*i.e.* the grey areas).
3. Each comment must have an associated topic and recommendation.
4. All formatting (*i.e.* bullets) will be lost when this file is uploaded to the Online Comment Table.
5. If necessary, adjust the cell width and height in order to view all text.
6. Cutting and pasting comments from WORD documents cannot include hard returns (spaces between paragraphs).
7. If you would like to create paragraphs within a single cell, please use a proper carriage return (ALT & ENTER).

<b><u>TOPIC</u></b>	<b><u>COMMENT</u></b>	<b><u>RECOMMENDATION</u></b>
<i>Be as specific as you think is appropriate; for example a section or page of the document, a recommendation #, general comment, etc.</i>	<i>Comments should contain all the information needed for the proponent and the Board to understand the rationale for the accompanying recommendation.</i>	<i>Recommendations can be for the proponent or for the Board. Recommendations should be as specific as possible, relating the issues raised in the "comment" column to an action that you believe is necessary.</i>

<b>Item Number</b>	<b>Topic</b>	<b>Comment</b>	<b>Recommendation</b>
1	Selection of Zooplankton Species for Toxicity Testing Revised Site-Specific Water Quality Objectives for Potassium Version 1.0	The 2014 AEMP (p.3-130) states: " <i>the observed decline of cladocerans in Leslie and Moose lakes have been linked to a decrease in the density of Holopedium gibberum, while Daphnia sp. has increased in Leslie Lake since 2010.</i> " The report says that this is most likely due to nitrification. Reference lake zooplankton communities are not changing in this manner. It is not clear whether elevated potassium is driving the decline in cladoceran communities in lakes downstream of LLCF. The Agency understands	DDEC should consider using <i>Holopedium</i> for zooplankton testing as 2014 AEMP suggests it may be a more sensitive indicator of aquatic health downstream of the Ekati Mine.

Item Number	Topic	Comment	Recommendation
		<p>DDEC's point (<i>June 12, 2015 response to Agency review comment #3 on the Potassium Response Plan</i>) that cladocera declines began in 2002-2003 while potassium concentrations were elevated but relatively small (less than 3.0 mg/L) compared to recent sampling (over 40 mg/L). It is not clear why <i>Daphnia</i> populations are increasing downstream in the presence of high potassium while <i>Holopedium</i> are still depressed. This in itself suggests <i>Holopedium</i> sensitivity may be higher to increased potassium. An increase in Potassium SSWQO may have an adverse impact on <i>Holopedium</i>. In its June 12, 2015 response to Agency review comments on the Potassium Response Plan (Version 1) DDEC stated: "<i>Holopedium has not been widely used in toxicity testing programs and considerable method development would be required in order to reliably test using this genera</i>". The Agency remains of the view that it would be beneficial to conduct potassium toxicity testing of <i>Holopedium</i>.</p>	

Item Number	Topic	Comment	Recommendation
2	Toxicity Test Temperatures (Appendix C--Potassium Toxicity Testing for the Ekati Diamond Mine, Table 1, pg. 3).	The chronic toxicity tests (IC <sub>25</sub> ) on cladocera were done at 20-25°C temperatures. The site water was collected under ice in winter at less than 3°C. It is not clear why the toxicity tests were done at water temperatures that are not present downstream of the Ekati Mine.	DDEC should explain why the zooplankton and other toxicity tests were not done using water temperatures found at the Ekati Mine.
3	Discarding of Chronic Test Data (Appendix C--Potassium Toxicity Testing for the Ekati Diamond Mine, pg. 7 of <i>Potassium Toxicity Testing for the Ekati Diamond Mine by Natilus Environmental</i> )	One anomaly in the tests was a chronic test result of only 16 mg/L for fathead minnow (the surrogate for the more common lake chub found at Ekati). This result was discarded as it was determined it was derived by incorrect data analysis (using linear interpolation to analyze the data rather than nonlinear regression). It is not clear why that data was not re-analyzed using the correct procedure rather than being removed from the dataset entirely.	DDEC should explain why some of the chronic toxicity data was discarded rather than re-analyzed.

Item Number	Topic	Comment	Recommendation
4	Memo on Water Model (pdf page 6 of the Memo)	The report states “ <i>calculated mean potassium concentration from underground to Beartooth Pit for the updated model suggests that concentrations were over-predicted in the 2012 LLCF model.</i> ” This is true for the period through 2013. But potassium levels had risen to that 2012 model prediction by summer of 2014 (Figure 2-2). The Agency believes it may be premature to remove the 2012 model level inputs from Beartooth.	DDEC should provide a better explanation as to why the 2012 model inputs from Beartooth should be adjusted at this time.
5	Implications of Revisions to the Potassium SSWQO and Water Model for the Potassium Response Plan.	There is no indication anywhere in the documents submitted by DDEC, what effect there would be on the Response Plan or any actions that DDEC may undertake, as a result of revisions to the potassium SSWQO or the water model. The Agency continues to be concerned with the delays in DDEC actually taking any action to deal with the effects of potassium on the downstream aquatic environment as noted in our previous comments on the Potassium Response Plan (item 5 in our June 2, 2015 Comments).	DDEC should provide an explanation of the implications of revisions to the Potassium SSWQO and water model to the Potassium Response Plan and any actions it intends to undertake to deal with the issue at site.