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February 5, 2019

File: W2015L2-0001

Mr. Sean Sinclair
Diavik Diamond Mines (2012) Inc.
P.O. Box 2498, 300-5201, 50th Avenue
Yellowknife, NT X1A 2P8

Dear Mr. Sinclair,

Re: Follow-up Information Request for DDMI (W2015L2-0001) 2014 to 2016 Re-evaluation Report and Design Plan Version 5.0

Diavik Diamond Mines (2012) Inc.'s (DDMI) submitted the 2014 to 2016 Aquatic Effects Re-evaluation Report and Design Plan Version 5.0 for Water Licence W2015L2-0001 to the Wek'èezhì Land and Water Board (WLWB or the Board) on March 14, 2018.^{1,2,3} The request was distributed for public review through the Board's Online Review System (ORS) and reviewers provided comments, which DDMI responded to on August 14, 2018. An Information Request with follow-up questions regarding DDMI's responses to ORS comments was sent to DDMI on November 23, 2018;⁴ DDMI provided a response on December 12, 2018.⁵

Following review of these responses, additional follow-up questions to the responses provided by DDMI are outlined below.

1. EMAB comment 28:

EMAB comment 28 asked DDMI to provide additional discussion to support the conclusion that the adjusted biomass measurements for zooplankton do not affect the conclusions reported in the respective annual reports. DDMI's response explained that it did not influence the overall extent of effects calculation. The IR identified that DDMI did not comment on whether these effects to the zooplankton biomass influenced

¹ See WLWB (www.wlwb.ca) Online Registry for [Diavik - AEMP - 2014 to 2016 Aquatic Effects Re-evaluation Report - Part 1 - Apr 12 18](#)

² See WLWB Online Registry for [Diavik - AEMP - 2014 to 2016 Aquatic Effects Re-evaluation Report - Part 2 - Apr 12 18](#)

³ See WLWB Online Registry for [Diavik - AEMP - 2014 to 2016 Aquatic Effects Re-evaluation Report - Appendices - Apr 12 18](#)

⁴ See WLWB Online Registry for [Diavik - AEMP - 2014 to 2016 Re-eval Report and Design Plan V5 - Information Request to DDMI - Nov 23 18.pdf](#)

⁵ See WLWB Online Registry for [Diavik - AEMP - 2014 to 2016 Re-eval Report and Design Plan V5 - DDMI Response to Information Request - Dec 12 18.pdf](#)

Action Level comparisons. DDMI was asked to confirm and explain.

DDMI's response stated that the "Action Level comparisons for zooplankton biomass (based on enumeration) in the Plankton Component were also not affected by these adjustments." While biomass in the Plankton Component is based on enumeration, these values are reported as mg/m³, thus it is unclear how the comparisons to normal ranges and Action Levels are not potentially affected by the adjustment in net volume diameter. Please clarify how the biomass (reported by m³) is not affected by the adjustment in net volume diameter. If it is affected, please demonstrate that the adjusted biomass values for zooplankton in 2015 and 2016 do not change conclusions with respect to comparisons to normal ranges and Action Level evaluation.

2. EMAB comments 34/38:

EMAB comment 34 noted a potential error in Figure 5-2 for the 2014 data, where the extent of effects did not match what was reported elsewhere. EMAB recommended that DDMI verify that data for all years are presented correctly in Figure 5-2 and to provide updated interpretations and conclusions. DDMI confirmed that the 2014 panel in Figure 5-2 was incorrect but did not comment on whether it confirmed whether it had verified data for other years. In the IR, DDMI was asked to confirm that it had verified data and the relevant figure for all other years.

In its response, DDMI stated that data in Table 5-7 is correct but did not confirm if the maps in Figure 5-2 correctly represent the data from Table 5-7. Table 5-7 has no data for total nitrogen (TN) in 2007, yet a map showing the spatial extent of TN in 2007 is included in Figure 5-2, suggesting there may be other discrepancies. Please verify and confirm that all maps in Figure 5-2 correctly represent the data from Table 5-7. If errors are identified, please discuss the implications to the conclusions both with respect to the overall temporal trends in spatial extents for TN and in terms of its relationship with biological variables (as discussed in EMAB comment 38).

3. EMAB comment 46:

EMAB comment 46 was about the greater number of exceedances of the normal range observed for soluble reactive phosphorus (SRP) concentrations for bottom depth samples in the mid-field area. In its response, DDMI noted that top/mid/bottom data for NF and MF stations are presented in annual reports and that the "data do not show major disagreement in effect among depths". In the IR, DDMI was asked to: (i) clarify if this conclusion about no major disagreement is based on the data from the annual reports; and (ii) explain how DDMI is assessing/determining the absence of major disagreement.

In its response, DDMI pointed to Figure 3-8 panel C of Appendix XIII in the 2014, 2015, and 2016 AEMP Annual Reports. These figures provide results for the top, middle, and bottom depths in the NF, but not for the MF. The MF results appear to average all samples collected across depths, thus it is not possible to visually compare differences for SRP in the mid- and bottom-depth samples for the MF in those figures. Can DDMI provide further support for its statement that "data do not show major disagreement in effect among depths; therefore, using mid-depth data is appropriate", with consideration for potential variation across depths in the MF.

4. EMAB comment 54:

EMAB comment 54 asked DDMI to clarify the methods for nutrient analysis in sediments or to modify the text if there was an error. In its response DDMI says the “text will be revised to remove contradicting sentences.” In the IR, DDMI was asked to provide an explanation as to how this text will be revised.

It is not clear from the response provided what methods/depths were used for nitrogen and phosphorus after 2010. Please clarify and explain how the text could be revised to address this.

5. EMAB comment 61:

EMAB comment 61 noted potential discrepancies in the correlation analyses provided in Table 6-6 and the resulting normalizations that were done for boron, lead, and tin data prior to trend analyses as identified in Table 6-7. In its response, DDMI states that Table 6-6 and/or the models will be updated but does not confirm whether discrepancies exist and whether this has any implications on the results of the Re-evaluation Report. In the IR, DDMI was asked to provide an explanation of what, if any, changes are required and to provide a discussion of what the implications to the interpretation of results would be.

DDMI’s response explained that the “full dataset was used during the preparation of Table 6-6, whereas the subset of the data (i.e., only the data for stations used in the trend analysis) was used for determining the normalizing parameter prior to trend analysis. Therefore, Table 6-6 needs to be updated to match the correlation coefficients used to select data transformation before trend analysis.” DDMI provided an updated Table 6-6 with its response. The table appears to address two of the discrepancies identified in EMAB’s comment (the ones for boron and lead), but not the discrepancy for tin. According to EMAB’s comment and Table 6-7, “fines” was used as the normalizing variable for tin, but the updated Table 6-6 shows a significant correlation for “TOC”, not “fines”. Please address this discrepancy and explain the implications, if any, to the interpretation of results.

6. EMAB comment 69:

EMAB comment 69 noted discrepancies in the results presented and explained for cyanobacteria (i.e., figure and table does not match interpretation in the text). In its response, DDMI indicated that the text would be reviewed, and appropriate corrections made but did not explain what these corrections would entail. In the IR, DDMI was asked to explain what changes are required to the text and whether this would influence the interpretation of results presented in the report.

In the response to IR, DDMI provided updated text; however, this text appears to include one of the discrepancies originally identified by EMAB. The text in DDMI’s response states: “...but only a slight, non-significant decline was observed in the NF area between 2013 and 2016 (Figure 7-4 and Table 7-14).” Table 7-14, however, reports a significant difference for cyanobacteria biomass between 2013 and 2016. Please clarify whether the text or the table need to be corrected to address this discrepancy and provide an explanation for any implications to the conclusions.

7. EMAB comment 98:

EMAB comment 98 noted a number of potential discrepancies in Figures 10-2 and 10-3. In response to EMAB’s comment, DDMI suggested removal of these figures in future versions of the report. It is unclear whether potential revisions to these figures in the current report are required. Please address each of the

potential discrepancies noted by EMAB-98 and explain if and how the figures need to be revised to address them.

The Board requests that DDMI submit responses to the requests 1 through 7 as detailed above as soon as possible, and no later than 5pm on February 14, 2019. Should DDMI have any questions, please feel free to contact me at selsasser@wlwb.ca or by phone at 867-765-4592.

Sincerely,



Sarah Elsasser
A/Executive Director, Wek'èezhii Land and Water Board

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