Violet Camsell-Blondin  
Chairperson  
Wek’eezhi Land and Water Board  
Box 32  
Wekweeti NT X0E 1W0  

July 16, 2015.

Re: Closing Comments on DIAVIK Water Licence Renewal W2015L2-0001

Dear Ms. Camsell-Blondin,

The Environmental Monitoring Advisory Board (EMAB) has authorized me to submit the attached closing comments following the May 28 public hearing for the Diavik water license renewal. We thank your Board for the opportunity to participate in the public hearing and commend the Board on an orderly and well-run hearing.

Should you need clarification on any of the points detailed in this submission, please don’t hesitate to contact us.

Thank you.

Signed by: Tim Byers  
for Sean Richardson,  
Chair  
Environmental Monitoring Advisory Board
1.0 Introduction

It appears the draft water license prepared by the WLWB staff has favourably incorporated several of EMAB’s concerns and recommendations. Also, regarding item 4.3 in our intervention concerning costing pit reclamation for fish in the event of a premature mine shutdown, it is now apparent to EMAB that the Water License is not the instrument that covers costing this, but rather the Fisheries Authorization from DFO. If so, then EMAB would expect DFO to provide an opportunity for intervenor feedback on the cost estimate as set in that regulatory instrument.

EMAB’s closing comments focus on the following outstanding issues and recommendations:
- Hydrocarbon contamination implications for North Inlet closure
- Incorporating results from other DIAVIK monitoring programs into the AEMP annual assessments
- EQCs for sulphate in seepage
- Water License Financial Security
- License term

2.0 Hydrocarbon Management and Monitoring and the North Inlet

The Hydrocarbon Management and Monitoring Plan is a welcome addition to the plans DDMI has implemented. This plan should indicate the total volume of hydrocarbon-contaminated sludge and sediment in the North Inlet. This will inform the six options for moving/treating/disposing of that material as listed in Appdx-5 Disposal Alternatives for North Inlet Water Treatment Plant Sludge.

As stated in our intervention, EMAB is not convinced by DDMI’s argument that a higher total biomass in North Inlet relative to Lac de Gras provides proof “that toxicological impairment of the zooplankton community, as a result of mine water and sludge inputs, or leaching from sediments, is not occurring, overall, in North Inlet.” (Golder 2012, p.10) It may be too premature to declare, as DDMI does, that the decline in North Inlet cladocera and rotifer
components of the North Inlet zooplankton community is likely due to nutrient enrichment combined with no mechanism for water-borne in-migration of these taxa from elsewhere (Ibid: p. 11). No evidence has been presented to definitively establish this link. As well, the latest AEMP results for the Ekati mine show that the same zooplankton groups (cladocera and rotifers) are similarly disappearing in the small lakes immediately downstream of the PK containment facility there (ERM 2014, p. 3-129).

**Recommendation:**

Measures are needed to assess the plankton community of North Inlet, with the objective of (a) determining whether current zooplankton community structure is maintained over time or reverts back to one more similar to that in Lac de Gras far-field, and (b) identifying what abiotic characteristics of the North Inlet are likely responsible for the dramatic shift in community structure. This can be accomplished through a Special Study designed and implemented to answer these questions, or incorporate North Inlet as part of annual AEMP within Part J of the license. The answer to questions addressing possible water column contamination that is detrimental to plankton has obvious implications for final closure decisions on the North Inlet.

### 3.0 Conditions Applying to AEMP

Given aboriginal community concerns about possible contamination of water bodies from deposition of air-borne pollutants (organochlorines such as dioxins and furans) and dust, EMAB believes conditions applying to AEMP should incorporate air quality monitoring results. Similarly, the AEMP should establish possible links to results of processed kimberlite and waste rock seepage monitoring in evaluating annual changes in Lac de Gras water quality.

**Recommendation:** The new Part J.10 should require that all relevant information from other monitoring programs (air quality, seepage, and any other sources of potential receiving water body contamination) be incorporated into the AEMP annual assessments.

### 4.0 EQC for Sulphate

As we noted in our intervention, DDMI’s 2013 Waste Rock Reclamation Research results suggest that sulphate within the rock pile will not dissipate as readily as chloride and nitrate in an unfrozen state. There is also potential for high concentrations of sulphate in PKC pond water. EMAB is still of the view that an EQC for sulphate in seepage water from both the waste rock pile and the PKC is needed to safeguard both aquatic and terrestrial life. SNP data bears this out for wildlife. When comparing 2014 seepage data to wildlife Toxicity Reference Values (TRV) derived for use in Dominion Diamond’s EKATI mine seepage from its waste rock piles — which is likely applicable to DIAVIK — there are instances where DIAVIK seeps have exceeded the TRVs. This could present health concerns for wildlife using the DIAVIK site. (See [Seepage Survey 2014 Annual Report](#) and ERM 2015)

In samples from a seepage collection well on the northwest side of the PKC (SNP 1645-80), sulphate TRV for birds was exceeded in 3 of 4 summertime samples. Also, the collection pond #3 (SNP 1645-76) which receives seepage from west side of Waste Rock Pile, measured 1 of 4
summer samples having sulphate concentrations that would similarly exceed the TRV (CCME: 1000 mg/L) for the livestock surrogate for wild herbivores.

Sulphate toxicity in livestock can manifest itself in diarrhea, decrease in food and water consumption, and weight loss (CCME 1987). Assuming effects are similar in caribou, these chronic toxicity effects might contribute to more energetic stresses on that portion of the Bathurst Caribou herd that comes in contact with and ingests high-sulphate seepage waters from Diavik’s mine. Such physical stress would not be helpful in allowing a herd in decline to rebound to a much-needed state of population growth.

5.0 Financial Security

EMAB still feels strongly that it should be consulted during GNWT & DDMI discussions on the Water License financial security estimate. We believe it is important for EMAB, as an independent body, to provide input that may assist the parties in optimizing the determination of an adequate amount of secure financing needed to close the mine.

6.0 Term of License

As we mentioned in previous comments, EMAB believes that the term for this license should expire no later than the last year of operations prior to beginning closure of the entire mine. This would allow a complete re-evaluation of all EQCs and conditions applying to AEMP and Closure & Reclamation Plan in a final water license designed specifically for closure. Post-closure, the entire Lac de Gras becomes the receiving environment without areas designated as mixing zones for dilution of contaminated water. As well, this term would provide the ability to address any new, unanticipated aquatic impacts, unencumbered by pre-set closure EQCs. An 8-year license would accomplish this, and would be consistent with the renewed license term of Diavik’s mining neighbour, Ekati.

EMAB is not convinced by DDMI’s argument that a more effective closure and reclamation program would be accomplished only with a 15-year license extending well within the closure and reclamation period instead of renewing it at or near the start of closure of mine operations. In addition, DDMI has stated, in answer to our question at the public hearing, that progressive reclamation would not be impeded if a 15-year license were not granted. So if mine components can be progressively reclaimed without a 15-year license, it is not apparent to EMAB that planning for final closure of mine components could not be achieved under the same circumstances.

A 15-year license would not even save the company and intervenors from the time and expense of another public hearing, as DDMI itself admits. That is because even with a 15-year license it is probable that one or more license amendments may be needed after closure, thereby necessitating another regulatory proceeding. ENR stated at the hearing (p. 162 of the hearing transcripts) that it does not believe WLWB presently has all the information necessary to write a complete license encompassing closure provisions. So amendments will be necessary in the future to incorporate final closure.
In closing, EMAB thanks the Wek’eezhii Land and Water Board for the opportunity to participate in this licence renewal process and to provide these final comments. We look forward to seeing a renewed license for the DIAVIK mine that incorporates measures that will serve to address the serious concerns raised by intervenors.

REFERENCES Cited:


