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September 10, 2021

Files: W2020L2-0004, W2021X0004, and W2021D0005

To all Parties,

**Re: Information Requests Resulting from Ekati Technical Workshop - Point Lake Project – Type A Water Licence Amendment and Type A Land Use Permits Applications (W2020L2-0004, W2021X0004, and W2021D0005)**

The Wek'èezhì Land and Water Board (WLWB) would like to thank all Parties who participated in the Technical Workshop from September 7-9, 2021, to discuss Arctic Canadian Diamond Company Ltd. (Arctic) Type A Water Licence Amendment (W2020L2-0004) and Type A Land Use Permits (W2021X0004 and W2021D0005) Applications for the Point Lake Project. The session was beneficial in helping to identify and clarify issues raised by Parties and has contributed to a better understanding of the information on the record.

There were several requests for specific information made by Parties during the Technical Workshop. In an effort to ensure the necessary level of evidence is on the record so Parties can make informed submissions to the Board and allow the Board to make an informed decision, the WLWB is requesting the following information from the identified parties no later than September 17, 2021.

**IR #1 for GNWT-ENR:**

To provide current available caribou collar and camera data.

**IR #2 for IEMA:**

To provide an animation of caribou movement based on the data provided by GNWT-ENR within two weeks of data submission as per IR #1.

**IR #3 for Arctic:**

To provide additional analysis and assessment of available caribou collar data and camera data with respect to impacts to caribou movement. Analysis to at minimum look at refinement of issues affecting caribou movement, methods of improving flow of caribou movement through the area, and factors in delayed arrival of caribou at winter grounds.

**IR #4 for Arctic and GNWT:**

To confirm commitment to meet with TG to identify research questions and plan next steps for data analysis in relation to the data analysis conducted for IR#3.

**IR #5 for Arctic:**

Provide an analysis of options for adjusting the configuration (including alignment and location) of the WRSAs and overburden pile with the objective of optimizing caribou migration across the tataan. The analysis should be based on the following key principles:

- Minimizing obstacles and facilitating free movement of caribou
- Orienting rock piles parallel to local topography (of Tataa, esker, and smaller lakes)
- Minimizing perpendicular obstacles and making them as easy to pass over/through/around as possible.
- Exploring and testing the limits of what is economically feasible

The analysis is not intended to be used directly for decision-making purposes, we want to see a range of what is possible, to inform subsequent discussions that will be based on the best available scientific data and Traditional Knowledge. At this time, none of the specific options is “preferred”.

Analysis should include:

- A. A description, including a map, of each option included in the analysis.
- B. Analysis of general options and adjustments to show what may be feasible:
  - i. Linear, elongated WRSAs
  - ii. Changes to orientation
  - iii. Changes to the shape and slopes
  - iv. Reducing height and increasing footprint
  - v. Reducing footprint and increasing height
  - vi. Removing and/or shrinking the overburden pile by building a thicker cover on the metasediment, and using overburden in nearby reclamation projects
  - vii. Different locations of the WRSAs, including consideration of placement of limited amounts of rock at different locations
  - viii. A list of any options that Arctic excluded from the analysis, with an explanation
- C. Analysis of specific options:
  - i. Eliminating the west WRSA and building a single WRSA north of the pit
    - a. North WRSA elongated to the northwest with width equal to the width of the point lake pit
    - b. North WRSA elongated to the northwest with various sizes/shapes/heights
    - c. Also eliminating the overburden pile (reuse the overburden and/or combine with the single north WRSA)
  - ii. Eliminating the west WRSA through placement of rock in other locations, including at Lynx/Misery.
  - iii. Shrinking the amount of material between the pit and the esker by 10, 25, 50, 75 % (including changes in height and footprint) and instead placing it
    - a. At Lynx WRSA
    - b. Combined with the north WRSA
  - iv. Changing the shape of the north WRSA so that it is all to the northwest of the pit (removing the northeast end of the north WRSA)
  - v. Any other options necessary to explore the items under #2 above.
- D. For each option included in the analysis, a discussion on the implications on:
  - i. caribou movement
    - a. During summer/fall migration with ice-free lakes,
    - b. During winter/spring migration with ice covered lakes
  - ii. operational water quality
  - iii. post-closure water quality
  - iv. physical stability
  - v. logistics/technical feasibility
  - vi. economic feasibility and financial costs (ideally both absolute and relative to the current proposed configuration)

- vii. the extent of adjustment that may be feasible
- viii. any other factors.

While these options could be weighted and scored, Arctic must **not** do this unilaterally and it may not be beneficial to do this at all. **The purpose of this IR is not to identify a preferred outcome, it is to explore what may be feasible so we are better informed to understand and consider the options based on our own knowledge and values, including Traditional Knowledge.** This can be the foundation for collaboration with Arctic.

With this information, we can also evaluate how the options would fulfill the closure objective set by the WLWB: *landscape features shape and vegetation match aesthetics of the surrounding natural area, are suitable for cultural uses, and contribute to the restoration of wildlife use and caribou movement.* This information is needed now, not in some future WRSA design plan. To meaningfully incorporate Traditional Knowledge and to meaningfully participate in the licensing/permitting process, we need to fully understand the options and limitations for waste rock and overburden configurations within this very important Tataa.

**IR #6 for Arctic:**

Preamble: Understanding how the waste rock and overburden piles may present a perceptual barrier to caribou entering from the northwest or southeast is essential to considering monitoring and mitigation options. But it is difficult to visualize the height of the esker relative to the west waste rockpile and overburden pile and the width of the foot of the esker toward the toe of the rockpile. In preparation for further discussions on options to maintain free passage of caribou through through the tataa, a better understand of the landforms is essential.

Request: Please provide a cross section profile for close to the east side of Jay road, the esker and the west Waste Rock pile. Please provide a second cross section showing Thinner Lake, the esker and the Overburden pile.

**IR #7 for Arctic:**

Preamble: Arctic Diamond's "strategy for managing risks to caribou (and other wildlife) associated with roads is to increase mitigation and monitoring activities as wildlife approach the Ekati Diamond Mine site".

Request: Please provide specific details on options to the proposed increase in mitigation and monitoring activities.

**IR #8 for IEMA:**

To provide the report, *Influence of the Ekati Diamond Mine on migratory tundra caribou movements*, by Kim Poole, Anne Gunn, and Graeme Pelchat.

**IR #9 for Arctic:**

Provide a timeline that shows how Arctic will be able to submit its final proposed configuration of the WRSAs and overburden pile before the company needs to start constructing them. The timeline should include:

- a. Engagement on the TK Plan;
- b. Draft and Final TK Plan;
- c. Scientific study design on caribou movement (collar data analysis during 2020 mine shutdown, et);
- d. Carrying out scientific study on caribou movement (start, end, reporting of results);
- e. Updates to WEMP, WMMP, CRMP;
- f. TK site visit(s) and reporting of results;

- g. Engagement (please identify proposed milestones for when Arctic will seek to engage);
- h. Any other tasks required to finalize the configuration of the WRSAs and overburden pile;
- i. Submission of proposed WRSA and overburden configuration (if separate from the design reports);
- j. Submission of WRSA and Overburden Design Reports
- k. WLWB approval of WROMP and WRSA/Overburden Design Reports; and
- l. Start of construction of the overburden pile and the WRSA(s).

Also, to assist in preparing interventions, indicate which of the milestones above the company believes should be a requirement in the Water Licence and/or Land Use Permit.

**IR #10 for Environment and Climate Change Canada:**

Arctic has proposed to register any potential future surface flows from the Point Lake Overburden Stockpile that enter Thinner Lake (or any fish-bearing water body) with ECCC as Final Discharge Points (FDP's) under the MDMER. Arctic has proposed to monitor and report to ECCC on those FDP's according to the requirements of the MDMER and to address any exceedances of the MDMER water quality limits in accordance with the MDMER. Arctic has stated that this is consistent with current application of the MDMER at other areas of the Ekati Diamond Mine. Could ECCC please confirm whether Arctic's proposed approach meets the requirements of the MDMER? Additionally, can ECCC also confirm that provided no water quality criteria is exceeded, no further management or collection of overburden contact water would be required?

**IR #11 for Arctic:**

How will clauses from the Environmental Agreement, specifically 11.3, apply to the Point Lake Project?

**IR #12 for Arctic:**

To provide analysis and assessment of possible water quality effects on King Pond Settling Facility from seepage inputs.

**IR #13 for Arctic:**

To provide Shake Flask Extraction and Net Acid Generation results from Point Lake Waste Rock analysis and identify how geochemical characterization of Point Lake Waste Rock has been considered in Closure planning including a description of additional characterization. To explain how SFE tests will inform the WRSA Design. Include rationale for the selection of samples submitted for SFE and NAG retesting, and how the results of these tests will be used.

**IR #14 for Arctic:**

Only the 20 overburden samples from the Koala pipe are presented in the Annex VIII Geochemistry Baseline for the Jay Project. Please provide all the data for overburden samples analyzed for the Ekati Mine. Please provide the plan to sample the Point Lake Project overburden, including sample collection timeframe and frequency as well as planned testwork and specific parameters.

**IR #15 for Arctic:**

In the Aquatic Baseline Data Summary there is a Discrepancy between the text and the table Appendix G.1 for mean depth of Point and Alexia lakes. The text (p. 23) says Point's mean depth is 32 m, but Appendix G.1 lists it as 25.2 m. The text (p. 24) says Alexia's mean depth is 2.5 m but Appendix G.1 lists it as even shallower at 1.2 m. The Application itself uses the 32 m number.

Can Arctic clarify which mean depth numbers for both lakes are correct? Also clarify which Point Lake number was used to determine total volume of Point Lake, which would affect the water balance determinations for the dewatering plan (i.e. the amount of water that King Pond would receive).

**IR #16 for Arctic:**

To provide a Version 2.0 of the Point Lake Dewatering Plan, including verification of maximum volume of rock needed for erosion control boulder field in Lac du Sauvage, and when pumping would cease relative to the EQC.

**IR #17 for Arctic:**

To provide mitigations to barrier effects to caribou movement associated with laying of pipelines in Early Works activities.

**IR #18 for Arctic:**

To provide confirmation from PWNHC that the Archaeological Management Plan is sufficient for the Point Lake Project and does not require updating at this time.

**IR #19 for Arctic:**

To provide the 2017 and 2019 Air Quality Monitoring Program Report.

**IR #20 for Arctic:**

With respect to dewatering water quality sampling, based on anticipated flow rates, what is the amount of water that would be released during the time a sample is taken TSS and the result obtained?

**IR #21 for Arctic:**

To provide SNP location for Point Lake Dewatering final outflow location.

**IR #22 for Arctic:**

To provide daily monitoring location for Point Lake Dewatering outflow.

**IR #23 for Arctic:**

Arctic has stated that whether or not humidity cells are completed on the Point Lake metasediment is dependent on the results of SFE/NAG tests. These tests have very different applications. What triggers or results would lead to a decision to complete the humidity cell testing?

**IR #24 for Arctic:**

Understanding that seepage will be captured, and the pile covered, it is important to know the lag time to acidity as requested by Lorax. Are there other reasons why Arctic is not currently planning to undertake the requested kinetic testing?

**IR #25 for Arctic:**

The King Pond Settling Facility (KPSF) will receive drainage from the Waste Rock Storage Area (WRSA) *until it is deemed suitable for direct release to the environment* as well as mine water from dewatering of the Point Lake pit. In a response to the Wek'èzhii Land and Water Board dated July 29, 2021, Arctic indicated that *Water quality evaluations for KPSF have been verified to demonstrate Point Lake minewater can be effectively managed under existing Effluent Quality Criteria (EQC) and Licence requirements which protect downstream surface water.* Please provide the water quality (i.e., source terms) and water balance data used in this predictive work as well as the rationale for the water quality data applied in the modelling (given that no leachate quality data is available for the Point Lake Project).

**IR #26 for Arctic:**

Can Arctic clarify if the assimilative capacity analysis conducted for the KPSF includes as water quality predictions of seepage? If no, can Arctic clarify what data is included in the assimilative capacity analysis?

**IR #27 for Arctic:**

Has any modelling been done to assess the potential for thermal heat generation in the WRSAs due to the oxidation of the PAG material, and the implications for freezing of the WR pile? Freezing of the pile could have implications on the seepage water quality as well. Has this been considered?

**IR #28 for Arctic:**

Without having seepage water quality predictions, how will Arctic be able to monitor whether or not seepage is meeting expectations and have the ability to implement mitigations as far as protecting the WQ of King Pond, etc?

**IR #29 for Arctic:**

What data is needed to predict the seepage water quality from the waste rock pile? Is kinetic testing needed? If so, when will this be conducted and can it be done in time to inform the WRSA Design Report? If it is needed for predicting post-closure WQ, why not plan to do it now, given the short anticipated mine life? If not, are there any limitations that may result in the prediction of the seepage water quality? What are these limitations?

**IR #30 for Arctic:**

What monitoring will be completed during operations to calibrate or validate this prediction for closure? For example, will there be any boreholes installed within the pile to collect water or measure ground temperatures? Will this monitoring program be presented in the WRSA design report?

**IR #31 for Arctic:**

What contingencies are available to Arctic should post-closure seepage quality persist beyond 10 years?

**IR #32 for Arctic:**

Can Arctic describe how the cover may influence the post-closure seepage water quality and quantity? What information/evidence does Arctic have to demonstrate that a thermal cover will be effective in this case?

**IR #33 for Arctic:**

Can Arctic provide more details on how seepage will be collected? Will the sumps be included in the WRSA Design Report? why or why not? Will the sumps be lined to contain seepage and prevent it from flowing out of the sumps? If not, how will Arctic mitigate seepage away from the sumps? What are the plans to ensure that all the drainage from the WRSA is captured in the sumps for management in the KPSF? Will the design report for the WRSA include the seepage collection system and monitoring protocols, including shallow groundwater monitoring? Or will these be provided in a separate report?

**IR #34 for Arctic:**

Estimate the minimum time needed for Arctic to prepare and submit:

- a. operational WRSA seepage quality predictions
- b. post-closure WRSA seepage quality predictions

**IR #35 for Arctic:**

During the License proceedings will Arctic be providing predictions of runoff and seepage water quality (including post-closure) – similar to what would be required for an Environmental Assessment – that will replace the Jay Project predictions – ie Jay Project – Water License Water Quality Model Updates – Report# 1419751 – June 2016? If no, when will Arctic update the water quality modelling? In the interim what should be used to represent future water quality/quantity inputs from Ekati to Lac de Gras for the purpose

of considering cumulative water quality/quantity over ~ the next 25 years.

**IR #36 for Arctic:**

To produce figures of drainage topography (detailed contours) of Point Lake WRSA/overburden areas with and without the WRSA's, in order to see drainage patterns of the area and how they will relate to sumps.

**IR #37 for Arctic:**

Appendix D of the Project Description for the PLP applies the pre-underground Misery Pit sump WQ to represent PAG contact water from the entire Point Lake site including PAG WRSA and pit walls. Given that the Misery deposit is composed of 42% metasediments (51% classified as PAG or uncertain), we do not feel that this data is representative of the contact water at Point Lake which consists of 99% metasediment in the WRSA and the open pit (>91% classified as PAG). Will kinetic testwork be initiated so that applicable water quality estimates for the Point Lake Project can be generated?

**IR #38 for Arctic:**

The kinetic testwork completed for metasediments from the Misery, Pigeon, Sable, and Beartooth pits/areas indicates that the material can go acid in a short period of time (as little as 38 and 51 weeks). Given that the Point Lake metasediments have a greater PAG potential (Point Lake NP/AP as low as 0.3), why do you feel then that the PLP metasediments will not become acidic in the 4-5 years that the waste rock will be exposed to weathering?

**IR #39 for Arctic:**

What information will be used to assess whether the proposed 1 m thick granite layer for the base and for the cover system will be of sufficient thickness to promote permafrost aggradation given the potential for the material in the pile to become acidic and generate heat at higher rates than other rock at Ekati?

**IR #40 for Arctic:**

The Project Description does not provide an estimate of heavy haul and light traffic anticipated during the construction and operation of the Point Lake Project. Could Arctic provide their projection of traffic levels located on:

- The Point Lake to Lynx Laydown haul road; and
- The Misery haul road (including MUG ore traffic).

**IR #41 for Arctic:**

Issue: TG does not find the trail density blocks (map with red, yellow, green, blue) very informative - trail blocks need to be connected, as caribou need to migrate (either dispersed or concentrated) across the landscape as a fundamental part of being Ekwø.

Request: Can Arctic provide a map of connected trails across the tataa, in addition to cell density of trails? Can Arctic map that together with all available collar data for all years on the tata? Can Arctic provide a topographic map (detailed DEM) of the area? Please also provide as shape files if possible.

**IR #42 for Arctic:**

TG is looking into a possible fall site visit, but even if it is possible it will be limited to a small number of people for COVID reasons. Enhanced visual information will be needed for an effective TK workshop. TG requests that Arctic produce and share drone footage along specific flight paths in the Point Lake Project

area. Flight paths should include: focusing on caribou trails; along the Jay road; along thinner lake and the esker; around point lake itself.

**IR #43 for Arctic:**

How can information from the Diabase Risk Mitigation program inform use of Lynx Diabase at the Point Lake Project? If issues are identified, what mitigations are available?

**IR #44 for Arctic:**

To outline, with rationale, which existing Reclamation Research Plans apply to the Point Lake Project and to identify any additional Reclamation Research Plans that may be required to address unique components/uncertainties of the Point Lake Project.

**IR #45 for Arctic:**

To provide revised closure cost estimate to address revisions raised during the public review, including person days associated with flooding of Point Lake (GNWT-Lands comment 11).

**IR #46 for GNWT-Lands:**

To provide the consultation process for surface leases.

To provide confirmation and clarification if surface leases are required to satisfy eligibility under section 18 of the MVLUR. If so, what is the expected timeline for surface lease process to be completed.

**IR #47 for GNWT-Lands and Arctic:**

- A. What support are you planning to provide to Tłıchǫ workers to retrain for the possible scenario of the mine closing?
- B. What support is in place for the transition of the Tłıchǫ workforce from the mine into their communities? How are their skills made to be transferable to the non-mining sector?
- C. What will you do to maintain high Tłıchǫ worker numbers and northern employment?
- D. How can the TG work with the GNWT and Arctic to ensure more apprentices are trained and hired in the Tlıcho region?
- E. What are the anticipated numbers of employment at the mine site, from now until closure? What skills are required for these positions? How will ongoing capacity building and skill development be supported for Tłıchǫ workers?
- F. How are you planning to support communities in the Tłıchǫ region who are experiencing increasing unemployment?

**IR #48 for Arctic:**

How does Arctic foresee the HR departments in TG and Arctic working together to improve employee recruitment and training amongst Tłıchǫ workers?

**IR #49 for GNWT:**

How can GNWT work with FRMG to improve the engagement process for FRMG concerning the mitigation of negative socio-economic impacts from Ekati (Related to Jay Measure 8-1)?

**IR #50 for Arctic:**

What measures protective of indigenous culture from the Jay Project will Arctic carry forward to the Point Lake Project? Will Arctic develop novel measures to mitigate impacts to culture? Will Arctic develop novel measures to mitigate impacts to community well-being beyond existing IBAs and the Socioeconomic Agreement with GNWT? If new measures can be developed, what is the method proposed to further investigate impacts to culture and community-wellbeing and develop new measures?

**IR #51 for Arctic:**

- A. To provide track-changed revised copy of the Licence that shows (with rationale) all conditions that need to be removed or revised to address the commitment to not proceed with Jay Project as licensed/permitted.
- B. To provide Arctic's plan with respect to Permit W2013D0007 for the Jay Development.

**IR #52 for Arctic:**

Arctic's stated reasons for wanting to keep the road in place are not a significant benefit compared to the impact the road could have on caribou migration across the tataba, especially combined with the Point Lake Project. Now that Jay is no longer being considered or pursued as a development, this barrier to caribou movement should be eliminated. Arctic provide options for removing the road, with brief description of potential advantages/disadvantages of each, including:

- Total removal and remediation
- Partial removal, keeping a minimal light vehicle road with "flat" ditches or other remediation or design features to ensure the road is easy for caribou to cross

**IR #53 for Arctic:**

- A. Can Arctic further elaborate on the appropriateness and effectiveness of monitoring for project-related effects as part of the SNP?
- B. If housed within the SNP, how will Arctic track/trigger the need for any adaptive management?
- C. Other than cost, what limitations are there to including this as part of the AEMP?

**IR #54 for all Parties**

Provide feedback on proposed revised Workplan and Hearing dates.

In order to ensure the regulatory process proceeds efficiently, we ask that Parties endeavor to submit the requested information as soon as possible to allow Parties to begin preparing their interventions. As per the Work Plan,<sup>1</sup> all information requested must be submitted by September 17, 2021.

All information regarding this Water Licence and Land Use Permit applications proceeding will be posted on the WLWB's [Online Registry](#).

Sincerely,

Ryan Fequet,  
Executive Director, WLWB

BCC to: Ekati Distribution List

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<sup>1</sup> See WLWB Online Registry ([www.wlwb.ca](http://www.wlwb.ca)) for [Ekati – Point Lake – Amendment – Work Plan – Jun 29 21](#)