# Yellowknives Dene First Nation Land and Environment

# Giant Mine Environmental Assessment - Technical Report

From Yellowknives Dene First Nation Fax: (867)766-3497

To Alan Ehrlich Mackenzie Valley Environmental Impact Review Board Box 938 Yellowknife, Northwest Territories X1A 2N7 Fax: (867) 766-7074

July 9<sup>th</sup>, 2012



# **Yellowknives Dene First Nation**

P.O. Box 2514, Yellowknife, NT X1A 2P8

July 9<sup>th</sup>, 2012

Alan Ehrlich Mackenzie Valley Environmental Impact Review Board Box 938 Yellowknife, Northwest Territories X1A 2N7 Fax: (867) 766-7074

Dear Mr. Ehrlich:

# **Re: GIANT Mine Technical Report**

The Yellowknives Dene First Nation (YKDFN) would like provide the enclosed document as our submission for the Technical Report phase of this environmental assessment. We have tried to follow Appendix E of the Environmental Assessment Guidelines to the degree possible.

Fundamental to this process, YKDFN have focussed on developing constructive recommendations that would allow the project to proceed without having significant impacts. We hope that this can provide a useful tool for the Review Board's decision process. The YKDFN would like to thank the Review Board for the opportunity to provide this information and its consideration in the ruling of significance.

If you have any questions or concerns, please contact YKDFN Lands and Environment at 766-3496.

Sincerely,

Randy Freeman, Director

Copy: Morag McPherson, Fish Habitat Biologist – DFO, Yellowknife NT, Fax: (867) 669-4940
 Kevin O'Reilly, Alternatives North, Yellowknife NT, Fax: (867) 669-9141
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 Dennis Kefalas, Public Works - City of Yellowknife, Yellowknife NT, Fax: (867) 920-5668

# PLAIN LANGUAGE SUMMARY:

The Yellowknives Dene concerns are wide ranging, but the principal issues within the scope of the Environmental Assessment can be highlighted as:

- First: That the project live up to the commitments that <u>they</u> state will achieve the goals of remediating the site. The project and EA scoping has served to remove most of the options consideration, meaning that the EA decision must serve to provide the Parties with the ability to hold the proponent to account.
  - The starting point is for the proponent to provide a clear statement of mine component (i.e. Buildings) based objectives and criteria of closure as laid out in the Land and Water Board Guidelines. Without this, the Parties will have no method to tell if the project has achieved its goals. The proponent will be able to simply state that the 'remediation is complete'
  - Failure to do this will allow the project to be 'completed' in a manner that may allow significant environmental impacts in the future with no ability for the parties to force adaptations or adequately evaluate impacts
  - The project has not been very forthcoming in terms of providing meaningful responses to the Information Requests from the Parties
- Second: There is a great deal of concern and a lack of confidence that the project will be completed in a manner consistent with the desires of the people of the NWT and especially the Yellowknives Dene First Nation. Having the same organization as both the project proponent and project enforcement creates a situation where front line staff may face significant pressure from senior management during a period where jobs are being cut throughout. Staff who do not adopt the 'company line' could easily be laid off or face other job changes.
- Third: This project will create an incredible amount of data that will far outstrip the ability of the Parties to respond and meaningfully participate. This also needs to recognize that this is a project with no end it will continue in perpetuity. Future research must continue, with a goal to find a solution that does not just account for managing the risk, but resolving it. The Yellowknives Dene is fortunate that we still have elders who remember this area before there was a mine here, before the land was destroyed. The goal must always be to return that land to the same way it was.

YKDFN have repeatedly and strongly recommended the creation of an independent environmental oversight panel to address different facets of these concerns. The oversight body can aide the project in designing the measurable criteria for the regulatory stage, provide arms-length evaluation of the varied AANDC roles, and provide expert assistance to the communities when huge amount of data that will be generated. This body complements the YKDFN's Giant Mine Committee which is where the socio-economic impacts and some end use issues are being addressed.

YKDFN have offered recommendations for other concerns including contamination to the fishery from Baker Creek, water quality protection for the aquatic environment and drinking water source protection, long term funding, and the safety of the membership of the YKDFN.

# **1.0 NON-TECHNICAL SUMMARY:**

The YKDFN are one of several parties to the environmental review process, with our two communities in close proximity to the Giant Mine site. As a result, like many others, the Yellowknives will experience direct impacts from the Remediation Project. The Giant Mine has been one of the principal causes of changes to the YKDFN's way of life, altering the land use patterns of the membership.

This Technical Report provides specific comments related to environmental and socio-economic impacts that may result from the proposed Remediation Project and are within the scope of the Environmental Assessment. Recommendations are provided to mitigate the impacts. If the recommendations are not adopted by the Mackenzie Valley Environmental Impact Review Board (Review Board), it is YKDFN opinion it will either directly or cumulative result in impacts of high significance.

The following main themes are the foundation of this Technical Report:

- The multiple mandates of the Proponent provide added complexity to the execution of the Reclamation Plan. The Proponent in this case is also responsible for ultimately issuing the permits, inspecting and ensuring that the work is satisfactory, and determining when the reclamation has been successful. At a minimum there is the perception of conflict, at worse there is direct intervention between these different branches and the YKDFN do not have confidence that the roles are being executed as they normally would. These matters are complicated by a distinct lack of trust and historically poor communication. When these issues are combined, the necessity for independent monitoring and oversight is readily apparent.
- To execute a successful reclamation project, there is a need to have:
  - Well defined designs/execution plans with clear objectives and criteria.
  - Well-developed management plans to ensure activities are carried out in accordance with design. Plans should be reflective of the uncertainty of the project with appropriate attention to contingency and modification as warranted.
  - Monitoring to be completed to understand uncertainties, support assumptions in design, and demonstrate the success/failure of reclamation.

The designs, management plans, and monitoring plans require input from Interested Parties to ensure stakeholder and community input is appropriately considered in the decision process.

- The project has indicated that the replacement of the City pipe to the Yellowknife River pumping station is not part of their project, with a clear response from the City that the intake will likely be moved to Yellowknife Bay. These positions mean that discharge point for the Project effluent is likely to be immediately upstream from the future drinking water intake for the City of Yellowknife, Ndilo and Dettah. The key principles of protecting drinking water are to protect the source which means that the water being released must meet Drinking Water Quality guidelines before release.
- The Proponent has acknowledged the need for additional efforts to develop an environmental management system and management plan. These efforts are to be completed with input gathered from Interested Parties, including YKDFN. Numerous phrasings have been used by the Proponent to address management and monitoring plans (e.g., Environmental Management System, Environmental Monitoring and Evaluation Framework). Guidance from the Review Board is required to outline the reports required from this undertaking, along with their objectives, linkages to other reports, and timeframe for completion, as well as, timeframe and mechanism for reporting results.

# 2.0 INTRODUCTION:

The Yellowknives Dene First Nation (YKDFN) provides this Technical Report to the Review Board for their consideration in ruling on the Giant Mine Remediation Plan (EA0809-001) environmental assessment, as outlined in the Developer's Assessment Report and related documentation. The Contaminants and Remediation Directorate (CARD), Aboriginal Affairs and Northern Development Canada (AANDC) is the developer for this project.

# 2.1 Organization

The YKDFN primarily reside in the two communities of Dettah and Ndilo. Both communities are in close proximity to Yellowknife, as well as, the Giant Mine. Lands and Environment has two staff with an administrative support person. Our office seeks to provide YKDFN perspective on all matters relating to administration or regulation of lands within the Chief Drygeese Territory.

# 2.2 List of Issues or Topics

In this report, the YKDFN provide specific comments related to environmental and socio-economic impacts as a result of the activities proposed to complete the Giant Mine Reclamation Plan. Comments are also provided that relate to impacts to water quality, aquatic environment, public health and safety, First Nations interests, and cultural integrity.

Where possible, YKDFN has provided recommendations to the Review Board to assist in its decision making process. In all instances, YKDFN has provided recommendations that are required to mitigate the impact. Without the recommended mitigation efforts, it is the YKDFN position that there is either the likelihood or risk of impacts that will be of high significance.

- 3.1 Lack of Independent Oversight
- 3.2 Clarification of Roles & Responsibilities
- 3.3 Clarity in the provision of information
- 3.4 Community Consultation
- 3.5 Design Perspective
- 3.6 Ice Safety
- 3.7 Effluent Water Quality Drinking Water
- 3.8 Effluent Water Quality Aquatic Life
- 3.9 Quality of Closure Plan
- 3.10 Long Term Funding
- 3.11 Community Perception of the GIANT Area
- 3.12 Tailings Containment Area End Land Use
- 3.13 Communication Plan for Upset Conditions
- 3.14 Baker Creek Remediation Conditions
- 3.15 Perpetual Care Plan

This is not just another development project in the traditional territory of the Yellowknives Dene. It is a project that must last forever - If it is not completed with the highest regard for environmental quality and appropriate checks and balance to ensure long term success, this project will never achieve it's multiple goals.

# **3.0 SPECIFIC IMPACTS**

# 3.1 Lack of Independent Oversight

**Impact**: The lack of independent oversight may compromise the project implementation and best practice

**Developer's Conclusion:** That there is sufficient oversight to ensure unbiased monitoring and execution of reclamation activities.

- Chapter 14 of the Developers Assessment Report outlines a blueprint for environmental protection, regulatory responsibly and monitoring.
- AANDC commits to working with parties to define this approach further, which would include the development and implementation of an Environmental Management System and Environmental Management Plans. Engagement with Aboriginal groups and the public will occur in the development of the Environmental Management Plans (response to 2<sup>nd</sup> round Alternatives North IR#22).

# YKDFN Conclusion:

- The 'oversight' scheme proposed by the developer does not even match the critical factors that the developer identified as a key to effective oversight (March 6<sup>th</sup>/7<sup>th</sup> Presentation)
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- The mixed mandate of the proponent creates a situation where senior management can overrule staff on the ground, potentially compromising the effectiveness of the project and allowing environmental impacts to occur. There is insufficient arms-length oversight to provide comfort and certainty that the project is implementing best practices and highest standards.
- Independent agencies regarding major project developments (e.g., the diamond mine independent monitoring agencies) in the Northwest Territories have been implemented to capture the views of stakeholders and public interests such that they are considered in the developer's decision making process.

**Rational to support conclusion**: Since Day One, all parties to this process – the City, Alternatives North, and the YKDFN – expressed the need for an independent body to evaluate this project and ensure its effectiveness. Even the proponent seemed to accept this - Bill Mitchell:

- And I think [various options for independent audit and monitoring] would only be due diligence on the effectiveness of the remediation plan. And again, it talks to our comfort level in believing that this remediation plan will achieve its subjective, that we would be willing to entertain this independent arm's length -- independent oversight for the project in the future.

On November 12<sup>th</sup>, 2009 Trish Merrithew-Mercredi noted that "independent oversight" would be addressed within the Giant Mine monitoring framework and that this work was already "well advanced". It is clear that this is not, and was not, the case. YKDFN feel that this is not well advanced or well considered and are disappointed that the project has ignored our efforts and concerns for years, with this ineffective and unclear scheme as the substitute.

As we saw during the Jo-Jo Lake spill where communications came to a standstill and in the secretive development and implementation of the 'site stabilization plan', this project does not hold public communication as a priority. After the incident occurred, it became a shell game of who the appropriate contact was – with all calls eventually directed to Edmonton to a lack of meaningful response. Public information and consultation continued to be an issue with the project's development of the 'Site Stabilization Plan'. The project suggests that the parties were fully informed during the technical sessions – a few minutes of discussion amongst five days, even then with a lack of detail. In reviewing the round two IRs, it became clear that this project had been in progress for a long time, probably many months prior to even the technical sessions, but none of the parties were informed or consulted. The project unilaterally decided on this plan, decided *not* to disclose it, and tried to implement it entirely behind closed doors. All the while, the issues were currently in front of the Review Board. It is not just 'what' the project is doing, it's how they are choosing to do it. Secrecy, technocracy and an existing climate of mistrust means that an intermediary body is required to ensure that the Yellowknives Dene desire for a successful reclamation is implemented – the project cannot be relied on to implement best practices.

From day one, this project has produced a substandard remediation plan – the process of developing a comprehensive and effective closure plan required an open back and forth involving a variety of parties – which hasn't happened here. The project is constantly changing – YKDFN have learned that some the IR responses provided to us in Round two were out of date by the time we received them (This was one of the IR's that actually was answered). When this fact is combined with the proponents position that time is critical – meaning the absence of more thorough detail - the only way forward is to develop a mechanism that creates confidence in the proponents plans. An independent environmental oversight body is the right tool for this job.

Even by the proponents standards, the proposed Aboriginal and Government body (DAR 14.1.6.1) is an empty structure:

- There is no requirement for the proponent to provide information

- The funding is wholly dependent on the proponent with no clear mechanism guaranteeing the provision of adequate funding

- The tenure of the group is directly tied to the project
- There is no legal foundation for the group to make submissions to regulators or interventions

The members are not independent from the project – the appointment process is not discussed, there is no thought to the balance of members, and government people are explicitly part of this group.
There is no obligation for the project to respond to whatever results would be delivered by this group.

This proposal ignores the best practices drawn from across the country, as defined by the proponent themselves.

The YKDFN signed the joint response for Round 3 IR#3, but we have a very great concern that if the Board does not require oversight, the proponent will unilaterally decide that they don't want to pursue the matter. Despite the perceived recent steps forward, it may all be illusion designed to create the appearance of collaboration until the point where it's no longer needed and can be jettisoned. YKDFN

are hopeful and optimistic that a negotiated accommodation to this concern can be arrived at but strongly believe that a strong and clear measure from the Board will make this a reality. The principles established in the draft agreement draw from the academic research into best practices, YKDFN history with these bodies in the North, and the specific particulars around the GIANT mine case.

If the Board leaves this up to the proponent, this project will never succeed. The project managers in Ottawa see this only as a management and engineering question – that this exists every day for the future is only a facet of the equation. The mines of the NWT are well run today not because of the high regulatory standards that are applied – if the companies were simply compiling with the letter of the law they would be run in a much different fashion – they are well run because they have oversight groups that force them to do better, to constantly improve their processes.

If the Board allows this project to proceed without a structure to push for better results than the bare minimum, then that is exactly what the members of YKDFN will live with forever – a project delivered by the lowest bidder who is only conforming to the terms of their contract.

**Recommendation**: *The Board must make a Measure requiring the establishment of an independent environmental oversight panel*. This should be developed by agreement amongst the parties, recognizing the work that's already been done and submitted to the registry. This will ensure the panel's independence, local representation, and most importantly, effectiveness in ensuring the proponent's plans will achieve desired results in a manner consistent with best practices.

# 3.2 Clarification of Roles & Responsibilities

**Impact**: Uncertain administration, inspection, and enforcement of the project imparted from AANDC's mixed mandate as a Proponent and Inspector create the potential for wide range of environmental and socio-economic impacts to occur as a result of inadequate land administration and regulation. The interests of First Nations are not ensured.

### **Developer's conclusion**:

- AANDC acknowledge their roles as a developer and the responsibilities provided to AANDC under the *Mackenzie Valley Resource Management Act* (e.g., inspector, responsible minister).
- AANDC concluded no formal written policies or directives exist to "separate the function and communications within the Department related to the Giant Mine Remediation Project" (response to 2<sup>nd</sup> round Alternatives North IR #21). Further, the Giant Mine Remediation Project Team, Renewable Resources and Environment, and Operations Directorate have roles in the Northwest Territories Region to fulfill AANDC's mandate (response to 2<sup>nd</sup> round YKDFN IR #2).
- AANDC plans to establish a stakeholder group to help design the Environmental Management System (EMS) - this includes processes for monitoring, inspections, and audits. AANDC monitoring approach to include: "performance monitoring program to confirm that the objectives are being met; and the development of an adaptive management plan to allow the Remediation Project to adapt to changing conditions are required" (response to 1<sup>st</sup> round YKDFN IR#23)

### YKDFN conclusion:

- AANDC has more than one role with regards to the administration and management of the Giant Mine project. The roles and responsibilities within AANDC organization, as well as, responsibilities in fulfilling federal legislation (i.e., MVRMA) are unclear for the situation where AANDC is also the Proponent.
- AANDC acknowledge that stakeholder input regarding monitoring, inspections, and audit is needed and not complete.
- AANDC undertook the drilling necessary for the Freeze Optimization study without seeking Land Use Permits, unilaterally stating that the MVLWB did not have regulatory jurisdiction over the required work despite the very clear wording in the MVRMA. The AANDC inspectors chose not to require the project to possess a LUP, instead choosing to accept the *proponent*'s position which was any reasonable person could see was (and later shown to be) incorrect. The limp explanation that a determination had not been made on who's jurisdiction this was, and the Project seized on that uncertainty to do work without seeking permits – approximately 18 months later the determination was provided. Had the project proponent not been the Crown, there is little doubt in YKDFN's opinion that the inspectors would have insisted on clarity prior to the work commencing, rather than allowing it to proceed within a cloud of uncertainty.

### Rational to support conclusion:

- No formal written policies or directives exist within the Giant Mine Remediation Project. AANDC stated that the EMS will consider the issues of roles and responsibilities, but after initial review YKDFN do not sense this to be correct (see 2<sup>nd</sup> round IR response, Alternatives North IR #21).
- As the Parties have since learned, the information provided in the IR responses (see YKDFN Rnd2-03) was not valid when it was received. The EMS is being designed by the proponent in such a way that it will essentially be complete when it is available for review. Given the current scheme, the Parties will have little ability to influence design, rather they will only be able to offer comments.
- No response was provided by AANDC regarding potential overlap in authority between AANDC departments (see 2<sup>nd</sup> round IR response, YKDFN IR #2). Through two rounds of IRs, a technical session and numerous interactions YKDFN has consistently sought to understand 'who does what' and 'where the buck stops' in this very complex project. In the response to the aforementioned IR, the proponent only responded with some links to general mandates and a searchable database. This tells the Parties nothing. For example, this project has no less than 5 project managers that YKDFN is aware of, yet they are not in charge of the project. The information request was clear and unanswered.
- As previously mentioned, AANDC have shown with the Jo Jo Lake spill that they are not accountable to the local people. All communication was routed through Edmonton, where there was effectively no response. Given the lack of trust that already existed, the response lacked transparency and was a source of considerable concern.
- AANDC continued this behaviour and developed the site stabilization plan without involving any of the Parties and tried to undertake the work without securing any permits or providing appropriate information to the regulators. YKDFN only learned of the work when the project applied for a wildlife permit, which the proponent decided wasn't necessary in the end. Only when the Board *demanded* additional information did the proponent begin to provide any

details on the work planned to be completed in the next weeks. The proponents approach clearly did not involve good faith engagement of the parties or the regulators.

# Recommendation:

A measure is developed that requires the proponent:

- a. To develop an appropriate policy that ensures and clarifies the independence of each 'directorate' of the proponent and provides clarity on the checks and balances for the decision making of each group given that those charged with enforcement actually report to a member of the proponents management committee.
- b. To provide full and complete answers to all information requests, as well as providing further clarity on how the department will ensure that the different sections will fulfill their duty without creating the perception of conflict. This needs to include details regarding monitoring, inspections, and audits from the Giant Mine Project as well as decision making at upper management in Yellowknife, Edmonton and Ottawa.

# 3.3 Clarity in the provision of information

**Impact**: The uncertain access to information and lack of certainty in reporting requirements on the performance of remediation creates the potential for wide range of environmental and socio-economic impacts to occur as a result of private and/or restricted reporting mechanisms.

### **Developer's conclusion**:

- AANDC states that reporting on the performance of the remediation is "critical for the public to be able to access the information in a timely manner in order to understand the state of remediation" (response to 2<sup>nd</sup> round YKDFN IR #5).
- AANDC position is that the primary method to report on monitoring programs will be the Annual and State of Environment Reports to the Mackenzie Valley Land and Water Board (MLVWB).
- With regards to project oversight, Martin Gavin stated the "intent is to create a very transparent governance structure that addresses the needs of the government and public accountability"<sup>1</sup>.
- Access to information and records is subject to the limitations set out in the Access to Information and Privacy Act (ATIP).

# YKDFN conclusion:

- There is not a clear description of information to be reported from the Remediation Project and the frequency of reporting.
- There is no reason for the Yellowknives Dene to trust that this project will make the required information available to parties to review. If the Review Board allows this project to proceed as is, there is no reporting scheme to ensure that the project will meet even the unclear goals that it has they can simply issue a qualitative report, leaving the parties with little recourse.
- YKDFN reviews of the IR responses show that the proponent often responded poorly to the requests, failing to provide information even to simple questions (i.e. YKDFN IR Rnd2-02 which did not provide a response, YKDFN IR Rnd2-03 which provided information that was out of date

<sup>&</sup>lt;sup>1</sup> Round two information request response for Alternatives North IR#19 – December 2, 2009 Summary of Giant Mine Oversight Committee Meeting.

and no longer relevant by the time it was submitted, YKDFN IR Rnd2-04 where the response misrepresents the planned research). YKDFN strongly support the Alternatives North Letter of March 8<sup>th</sup>, 2012 in regards to the quality and nature of the IR responses through the process.

### Rational to support conclusion:

• ATIP process to gain access to information is cumbersome, adversarial by nature, not timely, and may not produce desired results. The last ATIP request filed by the YKDFN resulted in incomplete information provided, took many months, and INAC was found to be in breach of the law.

"[The Office of the Information Commissioner] find that AANDC was not sufficiently responsive to the numerous inquiries that [YKDFN] made during the processing of the request, nor your right to receive the information in a timely fashion. We regard these delays and failures to assist as unacceptable and not in compliance with the act. Accordingly, we find that AANDC failed to fulfill its duty to assist obligations, as described in subsection 4(2.1) of the Act."

In another case, YKDFN did not receive the full information that we were entitled to, but there is little recourse. Considering this, YKDFN have little faith in relying on the ATIP process as the mechanism for data release.

- The contents of the Annual and State of Environment Reports were not defined by AANDC and are planned to be "better defined through finalization of the Environmental Management System and the individual Environmental Management Plans" (response to 2<sup>nd</sup> round YKDFN IR #5).
- There is insufficient guidance to direct AANDC on what should be reported and the frequency. There is no comment from AANDC whether the objectives for public reporting (as detailed in YKDFN 2<sup>nd</sup> round IR #5) will be completed, and more specifically, if all inspection reports and audits will be form part of the public record.
- The Project has repeatedly done things in private, without any notice or information flow to Parties. This includes the Freeze Optimization Study, the design of the 'proposed oversight', the impacts and events surrounding Jo Jo Lake, the design and implementation of the Site Stabilization Plan (this has still not released despite the fact that everyone knows it exists and has been referenced many times).
- The Government has a notoriously poor record with releasing information, being the focus of reports from the Information Coordinator and Auditor General. On the date of this report being drafted (March 26<sup>th</sup>, 2012), there is an open letter from 500 science writers to the Prime Minister seeking to end the muzzling of federal scientists. As this report is being updated for submission, the Centre for Law and Democracy released their "Global Right to Information Rating" where Canada has fallen to 51<sup>st</sup> place of 89 countries evaluated. This is a continuation of the trend and YKDFN are deeply concerned that in the future, information critical to the project will not be made available to parties, especially if it would cause concern or show that the project is not succeeding as planned.

#### **Recommendation**:

- a. To consult with Interested Parties, including YKDFN, to determine what information cannot be reported to regulators (e.g. the default position must be 'release') and parties. If information cannot be released, AANDC should be required to at least note the existence of the report in the Giant Mine Registry and provide explanation why it cannot be released.
- b. For all inspections to be publically filed with the MVLWB within 14 days.

# 3.4 Community Consultation

**Impact**: Meaningful community consultation is very difficult to achieve on this large and complex project, with is located immediately adjacent to the YKDFN communities. Without the continued development of a persistent mechanism, the interests and rights of the First Nation may not be respected.

### **Developer's conclusion:**

- Chapter 14 of the Developers Assessment Report outlines a blueprint for environmental protection, regulatory responsibly and monitoring.
- AANDC commits to working with parties to define this approach further, which would include the development and implementation of an Environmental Management System and Environmental Management Plans. Engagement with Aboriginal groups and the public will occur in the development to of the Environmental Management Plans (see AN IR Rnd2-22).
- AANDC commits to completing a comprehensive monitoring framework to verify the long-term health of the environment, including sediments near areas that could be affected by the Giant Mine Remediation Project. The monitoring framework will be guided by community input and consultation. (response to 1<sup>st</sup> round YKDFN #14)

### YKDFN conclusion:

- The development of Environmental Management Plans does not ensure engagement of YKDFN throughout the reclamation activities; rather, this commitment pertains to the development of these plans at the start of reclamation. Secondly, the EMPs do not address socio-economic related engagement and consultation.
- There is no clear avenue for YKDFN to be involved throughout the reclamation process to guide the decision making or be engaged when variances from planned activities occur. Even the commitment of INAC in the DAR is effectively empty the 'aboriginal and government body' has no frame and is expected to be all things to many people. This body will owe its existence to AANDC, at the whim of the project funding. If this body raises concerns, it's not clear who it would be directed to nor is there a commitment for the proponent to respond.
- Engagement and consultation with YKDFN will occur throughout the duration of the Remediation Project to develop strategies, for the remediation of all mine components, which support the values and site usability for the membership of the YKDFN

### Rational to support conclusion:

• AANDC IR response stated that consultation with YKDFN on remediation strategies will be completed, but the status of past engagement and education efforts have made it abundantly clear that a new, unique engagement mechanism is required for successful building of support.

This is especially true for socio-economic issues which create particular difficulties in terms of incorporations and accommodation.

• Selection of design options for surface components be developed in consultation with YKDFN. Meaningful consultation requires involved staff and community members, simply because of the sheer size and scope of the project. Anything other than a direct, appropriated resourced, and cooperatively designed mechanism is destined to result in continued poor engagement.

**Recommendation**: The Board should recommend that the Giant Mine Oversight Committee be established in a more permanent manner to better allow the project to meet their engagement and potentially, some of their consultative obligations. Depending on the composition and terms of reference, a group such as this may be suited to provide community feedback and advice for options analysis.

# 3.5 Design Perspective

**Impact**: There is potential for wide range of environmental and socio-economic impacts to occur if criteria used in the design of facilities and aspects of the remediation plan do not achieve the objective of perpetual care.

# Developer's conclusion:

- AANDC committed to "continuous performance monitoring for each remediation component to measure actual versus specified design criteria to provide early warning of poor component performance" (response to 2<sup>nd</sup> round Alternatives North IR#6).
- AANDC stated that "due to the long-term nature of the remediation program sustainability of the remediation solutions are preferred over short-term solutions" (response to 2<sup>nd</sup> round Alternatives North IR#18).

# YKDFN conclusion:

- Uncertain how perpetual care needs for the site are considered into the design criteria of each facility and activity of the remediation plan.
- Monitoring may not be an effective measure to warn of poor performance that leads to catastrophic failure events. It is unknown what facilities and activities have risk of catastrophic failure.
- There is an apparent reliance on monitoring to identify failure instead of implementing a design that considers perpetual care. This reliance contracts AANDC's statement that sustainability is preferred over short-term solutions.

# Rational to support conclusion:

- AANDC did not adequately answer Alternatives North IR #6 (Q2) which requested an explanation of how design criteria for facilities meet the perpetual care needs for the site. For example, there is not a list of facility components or design criteria in AANDC response.
- Catastrophic failure events have potential to occur in a short timeframe. Monitoring may not be completed at a frequency, or encompassing of parameters, that would enable warning to occur.

**Recommendation**: The Board should require that the final/detailed design be required to perpetual care needs of the site are achieved and report on how the facilities meet the objectives of perpetual care.

# 3.6 Ice Safety

**Impact**: Human health and safety is being placed at risk by the diffuser's introduction of warmer water.

### **Developer's conclusion**:

- AANDC stated there is "currently limited data on the water temperature in the bay during the fall, winter or spring" (response to 2<sup>nd</sup> round YKDFN IR #4).
- AANDC stated that they needed to collect additional samples to be able to predict the impacts on ice thickness, but the only reference to additional sampling being undertaken or identified was related to currents.

# YKDFN conclusion:

- AANDC did not address the question of the potential for ice thickness in the vicinity of the diffuser in the winter shoulder seasons as was required in 2<sup>nd</sup> round YKDFN IR #4.
- YKDFN have significant concern for loss of life because there is public access to the diffuser location and awareness measures are not 100% effective.
- There is an appearance that AANDC will rely on the City of Yellowknife to monitor ice thickness. YKDFN are of the opinion that AANDC should have a monitoring program that is independent and not reliant on the City of Yellowknife.
- Preliminary diffuser modelling idealizes the hydraulic and thermal characteristics of the bay. For example, water movement by currents and waves not considered. There is potential that the simplifications in the modelling may or may not be a conservative. Winter shoulder seasons should be considered in the preliminary modelling. Further, there is a need to complete performance monitoring to confirm design assumptions.

# Rational to support conclusion:

- All parties acknowledge that Yellowknife Bay/Back Bay are subjected to very high use in the winter and any compromise of ice conditions has the potential to have direct impacts to human life.
- AANDC stated "key to the next stage of the diffuser design is to obtain the information on ice thickness and water temperature over several winter seasons at some 8 to 10 locations in the overall bay area" (as stated in response to 2<sup>nd</sup> round YKDFN IR#4).
- AANDC stated "it is important to collect data on ice thickness in the bay in late fall and late spring, in addition to, the normal monitoring program performed by the City of Yellowknife..." (as stated in response to 2<sup>nd</sup> round YKDFN IR#4).

### Recommendation:

a. Prior to the completion of the EA, AANDC is to complete detailed design of the diffuser that allows accurate and meaningful characterization of the impacts on the structure, thickness and strength of the ice in the area. Specifically, this should focus on the 'shoulder seasons' where fall

ice formation and spring ice strength/persistence are of significant importance. This should be updated prior to the issuance of any permits and as part of the long term monitoring of the diffuser design.

- b. To confirm performance of the diffuser by comparing design assumptions and design performance to measured data (as stated in response to YKDFN IR#4).
- c. This monitoring program is to be independent of, and not reliant on (but complimentary of), the City of Yellowknife monitoring.

# 3.7 Effluent Water Quality – Drinking Water

**Impact**: Impacts to the receiving environment and surface water quality of a future drinking water source, ignoring best practices of source protection.

### **Developer's conclusion**:

- AANDC provided expected treatment plant effluent quality, and through a simplistic mixing model, generally show that water quality at the edge of the mixing zone achieves CCME surface water quality guidelines (response to 2<sup>nd</sup> round YKDFN IR#1).
- AANDC has rejected the City's desire to scope in the replacement of water pipe from the pump station in the scope of the document despite the potential impact from the project on drinking water drawn from the Bay in the future.

### YKDFN conclusion:

- AANDC is not applying the best available technology to have lowest achievable effluent discharge quality. Rather, the approach is to apply treatment only to a degree that will achieve a desired outcome at the edge of the mixing zone.
- The selection of CCME or other criteria to set water quality objectives is unclear. At a minimum, the water quality objective at 'end of pipe' should be Health Canada's Guidelines for Canadian Drinking Water Quality, meeting the protection of freshwater aquatic life at some point outside that. The end use of this water is important the City has made it clear that this will likely be the drinking water source for the residents of Weledeh. Source water protection has been a major focus of the GNWT, yet they are strangely quiet when it comes to this project and the potential for contamination.
- AANDC must provide additional volumetric information on the ability of the project to a) store water and; b) provide additional treatment should the project have a serious technical challenge or malfunction. The background report from the City makes it clear that they do not feel that sufficient treatment could be brought on line in time to mitigate a potential crisis at the site, meaning that our drinking water is at risk.
- AADNC presented effluent water quality criteria for the Con Mine for information purposes. Con Mine should not be used as a precedent for Giant Mine effluent water quality criteria. Con Mine water is discharged below the current water source and the potential water intake.

### Rational to support conclusion:

• Response to 2<sup>nd</sup> round YKDFN IR#1 does not discuss best available technology; however, there are water treatment systems that may be able to produce better water quality than that presented. It is likely AANDC expected treatment plant effluent quality was based on operation of the treatment system currently at site.

- Protection of the drinking water source from point source contaminants is a key element of the multi-barrier approach to source water protection. In fact, the Government of the Northwest Territories<sup>2</sup> outlines prevention of contamination of water sources as a best practice in managing drinking water quality.
- AANDC is relying on dilution in the mixing zone to lower contaminant concentrations in the
  receiving environment. This approach may be common for operating mines; however, when the
  water body that receives the mine effluent waters is used a drinking water source, additional
  diligence should be required to ensure public health and safety and to not degrade the drinking
  water source.

# Recommendation:

- a. To improve the effluent treatment plant water quality should the water quality in the receiving environment not meet water quality objectives.
- b. End of pipe water quality should meet the Health Canada's Guidelines for Canadian Drinking Water Quality.

# 3.8 Effluent Water Quality – Aquatic Life

**Impact**: Aquatic organisms, sediment quality, and water quality in Back Bay and Yellowknife Bay have been significantly impacted over years, resulting in cultural impacts and limitations to exercise Treaty Rights. This project needs to reverse that trend.

# **Developer's conclusion**:

- Effluent discharged from the mine site will be protective of aquatic life outside the mixing zone and will be not be <u>acutely</u> toxic at point of discharge.
- AANDC stated "at this stage of the design process (i.e., Preliminary Design) there is insufficient characterization data on the ambient conditions in Yellowknife Bay and Back Bay to allow for a detailed quantification of water quality objectives (response to 2<sup>nd</sup> round YKDFN IR #1).
- AANDC commits to completing a comprehensive monitoring framework to verify the long-term health of the environment, including sediments near areas that could be affected by the Giant Mine Remediation Project. The monitoring framework will be guided by community input and consultation. (response to 1<sup>st</sup> round YKDFN #14).
- Data on benthic communities of Back Bay and Yellowknife Bay have shown some effects, data gathered on fish species has not shown adverse effects on fish health or arsenic levels in fish tissue (response to 1<sup>st</sup> round YKDFN #14)
- Health of water and aquatic life in Back Bay and Yellowknife Bay is of importance to YKDFN. Effects have been noted for simple organisms and this warrants additional monitoring to assess lake health and effects on high food chain organisms (e.g., fish)

# YKDFN conclusion:

<sup>&</sup>lt;sup>2</sup> Government of the Northwest Territories, 2005. Managing Drinking Water Quality in the Northwest Territories. A Preventative Framework and Strategy.

- Objectives for water quality in the receiving environment should be known for contaminants of potential concern during the environmental assessment stage. This information is not known, likely due to insufficient characterization of Yellowknife Bay and Back Bay.
- Contaminants of potential concern are not known, for there is insufficient characterization data in Yellowknife Bay and Back Bay. Rather, there is an assumption that the key parameter is arsenic. Without background water quality and effluent water quality known, contaminants of potential concern are likely not known to a high level of certainty.

# Rational to support conclusion:

- AANDC stated that quantitative water quality objectives will be presented when the project reaches the water licensing process (response to 2<sup>nd</sup> round YKDFN IR#1).
- AANDC stated "for contaminants that are predicted to be at or near CCME levels, additional work is planned to confirm the appropriateness of those CCME guideline values for use as site specific water quality objectives" (response to 2<sup>nd</sup> round YKDFN IR#1). The proponent is effectively saying that if it can't meet the guidelines, then it will consider whether the guidelines are appropriate – essentially just moving the goalposts.

# Recommendation:

- a. Confirm "that water quality objectives are being met and aquatic communities are not adversely impacted" through an "environmental effects monitoring program, which focuses on assessing effects on aquatic biota (e.g., benthic communities and fish) in the exposure area on a period basis". (response to 2<sup>nd</sup> round YKDFN IR#1)
- b. Complete additional monitoring of Yellowknife Bay and Back Bay water quality to establish background levels and quantification of water quality objectives.
- c. Determining the contaminants of potential concern in the effluent waters discharged from Giant Mine.
- d. Ensure effluent water quality at the edge of the mixing zone will be at or below CCME guidelines for the protection of aquatic life.

### 3.9 Quality of Closure Plan

**Impact**: The lack of clarity on the Closure Plan and the measures of successful implementation create the potential for wide range of environmental and socio-economic impacts.

### **Developer's conclusion**:

- General reclamation criteria for mine components that will guide the selection of specific reclamation measures and the establishment of targets have been developed (response to 2<sup>nd</sup> round YKDFN IR#3).
- Information gaps to facilitate reclamation have been noted based on general criteria. The majority of gaps are to be "addressed at the detailed design stages of the project and during the development of Environmental Management Plans" (response to 2<sup>nd</sup> round YKDFN IR#3).
- The Environmental Management Systems and Environmental Management Plan are "intended to link back to the design so that the development of monitoring and evaluation criteria is established in tandem with effective systems to assess project success" (response to 2<sup>nd</sup> round YKDFN IR#3).

### YKDFN conclusion:

- A detailed understanding of how to reclaim each mine component, as well as, the objectives and criteria for each mine component is fundamental to closure and reclamation.
- The closure scenario, objectives, criteria, and information gaps for each mine component have been presented at a preliminary level of detail, such that it actually adds uncertainty rather than provide further clarity. The intent behind IRs is to gather information, not introduce further questions and concerns. General objectives and select references for criteria have been presented; however, the detail is not developed to an executable level for example, not even the components, one of the simplest issues, have been established. The components advanced in IRs change from item to item and are inconsistent with those in the EMS, which have not been submitted to the Board or the Parties. Until the components have been set, it is impossible to consider the closure objectives for them or begin to ask how those objectives will be evaluated for successful implementation or not.
- Performance monitoring has not been developed to a degree that can be used to gauge success of reclamation.

# Rational to support conclusion:

- Even at this late date, there is no established list of mine components to be closed or reclaimed. In the 2<sup>nd</sup> round of IRs, there was a list of components, but at a subsequent meeting held with the proponent, two separate and different lists of components were presented. Until this is established it is difficult to establish objectives and criteria, which is usually more difficult.
- Table 1 of response to 2<sup>nd</sup> round YKDNF IR#3 provides:
  - General criteria which are not quantifiable. For example, a criterion of "percentage change to baseline flow" is provided; however, the percentage that is acceptable is not defined, nor is the value of baseline flow.
  - With regards to criteria guidelines for select VECs, multiple criteria are presented and it is unclear when to apply each criterion. For example, for surface water quality, four criteria guidelines are presented.
  - Level of detail for ongoing research to have confidence in the design is inadequate and may not be fully developed until detailed design is completed.
  - It has become clear that this IR was out of date by the time that YKDFN received it.
     However, the proponent has not submitted any replacement documents to outline their new position.
- Until the Parties can tell whether the project reclamation has been successful, no one will be able to properly evaluate it. The inspectors, already in conflict, will be under intense scrutiny and political or institutional pressure. This is the same standard that AANDC is applying to the other mine closure plans, they should not be exempt indeed, they should have additional clarity.
- The proponent states (DAR 14.1.1) "Core to the implementation of an EMS is the establishment of objectives and targets" but has failed to provide the mine components, the objectives for these components and the proposed criteria that they can be evaluated by. This was asked for in IR round 1, 2, the Technical Sessions, the EMS working group meetings, and the recent

workshop. Any reliance that the proponent places on the EMS is empty as the proponent has consistently <u>refused</u> to provide this 'core' information for parties to evaluate.

# **Recommendation**:

- a. For each mine component, the details of closure objectives, criteria, and any information gaps are to be developed in accordance with the framework and concepts presented in the following Northwest Territories and Federal guidelines and presented in a stand-alone closure and reclamation plan.
  - DRAFT Guidelines for the Closure and Reclamation of Advanced Mineral Exploration and Mine Sites in the Northwest Territories (2011). Developed by the Land and Water Boards of the Mackenzie Valley and Aboriginal Affairs and Northern Development Canada.
  - Mine Site Reclamation Guidelines for the Northwest Territories (2007). Indian and Northern Affairs Canada.
  - Best Practices see:
    - Diavik Diamond Mines Inc. (2011). Interim Closure and Reclamation Plan Version 3.2
    - BHP Billiton Canada Inc. (2011). Ekati Diamond Mine, Interim Closure and Reclamation Plan.
- b. Performance monitoring and adaptive management are to be integrated into the closure planning process to assess if success is achieved and when changes to the reclamation approach are needed respectively. Clear links between the Environmental Management Plan, Aquatic Effects Monitoring Plan, and adaptive management plan need to be identified for the closure criteria of the each mine component objectives.
- c. Key items of importance for successful reclamation plan include, without limitation: ice conditions about the diffuser to not be degraded from natural conditions; mine effluent waters at end of pipe to have concentrations that achieve drinking water quality guidelines; end land use about the tailings containment areas that meets expectations of YKDFN uses; and community oversight and engagement to have confidence that reclamation is successfully completed.

### 3.10 Long Term Funding

**Impact**: There is potential for wide range of environmental and socio-economic impacts to occur if reclamation is not completed or if perpetual care funding is not available.

### **Developer's conclusion**:

 Perpetual care of the Giant Mine site is a reality. AANDC has "high level of confidence in obtaining funding" for the remediation project; however, cannot "bind or guarantee the actions of future Parliament" (response to 1<sup>st</sup> round YKDFN IR#2).

### YKDFN conclusion:

• Current government recognizes importance of long term funding; however, cannot restrict future Parliament of this need.

 As time progresses in this era of funding scarcity, the operational budget of this project will become an increasing target of managers looking to cut budgets to please Ottawa. Decisions based on best practices and preventative operations will be deferred as more pressing issues are responded to.

### Rational to support conclusion:

• See response to 1<sup>st</sup> round YKDFN IR#2.

# Recommendation:

- a. The Crown should look to establish a mechanism to ensure that the long term operation of this site isn't compromised. At a minimum, this should include the establishment of an endowment to create a reserve fund for the project operations to access if they feel that the funding is not acceptable relative to operational demands. This will ensure that the site is not compromised while consultations on funding priorities and allocations are undertaken.
- b. Should future Parliament consider providing insufficient funding to execute the Remediation Plan and perpetual care of the site, consultation with affected parties, including YKDFN, must occur. Consultation must, without limitation, detail the resulting environmental and socioeconomic impacts.

# 3.11 Community Perception of the GIANT Area

**Impact**: If the community perception of the Giant Mine site does not improve, then the project will always be a failure.

### Developer's conclusion:

- The Remediation Project "will result in an overall improvement of environmental quality. However, this does not imply there will be a commensurate shift in how the environment is perceived and used by local communities" (response to 1<sup>st</sup> round YKDFN IR#22).
- "Additional consultation and community participation in the design of the Remediation Project and Environmental Monitoring and Evaluation Framework (EMEF) is required to measure community perceptions regarding the environment and success of the Remediation Project" (response to 1<sup>st</sup> round YKDFN IR#22).

### YKDFN conclusion:

• Community perceptions of environmental health are of importance to the YKDFN. A mechanism to gather this understanding, and if required, modify activities is required.

# Rational to support conclusion:

 AANDC stated that the "EMEF aims to measure community perceptions regarding the environment and how such perceptions might be affected by the Remediation Project" (response to 1<sup>st</sup> round YKDFN IR#22). It is unclear what the EMEF actually amounts to. The Project has seemingly discarded this initiative in favour of the EMS.

### Recommendation:

- a. The project should identify community perception as a primary remediation objective with the same value as stabilizing the arsenic trioxide.
- b. Complete an Environmental Monitoring and Evaluation Framework to measure community perceptions regarding the environment and success of the Remediation Project. The timeframe and frequency to be directed by the MVEIRB.

## 3.12 Tailings Containment Area End Land Use

**Impact**: Restricted or unacceptable end land use of the tailings containment areas.

# **Developer's conclusion**:

• AANDC proposes to leave tailings on surface and cover with mineral layer to support revegetation.

# YKDFN conclusion:

- The objectives of the cover design to limit oxygen or water infiltration are unknown.
- Reclamation research is currently being completed with regards to revegetation. The measure of success and desired end land use is unclear.
- It is unclear how YKDFN end land use has been considered and if current plans meets expectation for YKDFN uses.

### Rational to support conclusion:

• Limited to no information was provided regarding objectives and criteria in YKDFN response to 2<sup>nd</sup> round YKDFN IR#3

**Recommendation**: For the reclamation of the Tailings Containment Area to consider YKDFN end land use and achieve the expectations of the YDKFN uses.

### 3.13 Communication Plan for Upset Conditions

**Impact**: Should failure or upset conditions at site occur, there is potential for impacts to environment and human health. Mitigation can be enhanced with adequate communication to inform the public of an upset event.

### **Developer's conclusion:**

AANDC stated that "upon discovery of the event...northern media would be alerted of the situation via an emailed public notice. As well, discussions with Yellowknives Dene First Nations, the City of Yellowknife, and the Government of the Northwest Territories, as well as regulators, would have been initiated. The information would be communicated publically by AANDC Regional Director General, NT Region, and/or the Director of the Remediation Project via the Communications and Public Affairs Division". (response to 2<sup>nd</sup> round Alternatives North IR #17)

### YKDFN conclusion:

- E-mail outlets for communication could be improved and that includes multi-language reporting that clearly details safety issues.
- A multi-faceted dissemination approach is needed. E-mail alone is not considered adequate.

# Rational to support conclusion:

- As already mentioned, during the two previous upsets Jo Jo Lake and the drilling arsenic spill the proponent handled the situation very poorly in terms of communication and providing information to the public. Poor information provision continued into the post event assessment of the Jo Jo Lake public meeting, where the proponent refused to provide meaningful answers suggesting all options were on the table (when in reality the decision was made a week later, meaning that only one option was really under consideration). This pattern of secrecy has continued into the Site Stabilization Plan that the proponent refuses to release to the Parties.
- The critical issue of trust continues to be an issue and the hollowing out of the project staff is making the process worse. YKDFN want to have the project staff responsible for implementing the remediation reside in or near our community. It is not appropriate or acceptable to have the answerable parties living in Edmonton and Ottawa.

### **Recommendation**:

- a. Improved communication strategy to report upset conditions at Giant that is cognizant of the multiple languages spoken in the region, as well as, accessibility for the public to readily receive the information (e.g., email, radio, public announcements, etc.).
- b. The Board should require the Proponent to always make it plain who the appropriate community contact is. Furthermore, if this contact is not within Yellowknife, the proponent should be required to provide yearly updates as to why this is the case and when this will be rectified. It is essential that this project is run locally.

# 3.14 Baker Creek Remediation Conditions

**Impact**: YKDFN harvesters likely catch fish that are affected by the poor water quality and sediments of Baker Creek – this will likely increase over time if the productivity of the creek increases as the proponent says it will.

### **Developer's conclusion**:

 The water quality and sediment quality improvements noted above will be accompanied by several positive physical changes to the aquatic environment. In particular, a key objective for the realignment and naturalization of Baker Creek is the enhancement of aquatic habitat. In this regard, instead of having an adverse effect on fish habitat within Baker Creek, the Remediation Project is expected to result in substantive improvements (DAR - p8-58).

### YKDFN conclusion:

• Minor water quality improvements only serve to continue to contaminate fish and the local environment. It must be improved past the point where the contamination does not contaminate the fish and lower trophic levels that utilize the creek.

### Rational to support conclusion:

• As the local environment improves, Parties have seen fish returning to the Creek. The impact of poor water and sediment quality on the fish who utilize the Creek is unknown, but there is a strong likelihood that some of these fish will end up in the nets of YKDFN harvesters.

# Recommendation:

YKDFN ask the board to ensure that the water and sediment quality of the reclaimed area is of a quality equal to a site that has not been impacted by industrial development.

# 3.15 Perpetual Care Plan

Impact: The lack of a perpetual care plan endangers the long term success of the project

# **Developer's conclusion**:

- That they have expended considerable effort into thinking of the project in perpetuity.
- The EMS system will address this void.

### YKDFN conclusion:

- The focus of the proponent's submission to the Board has almost entirely been on the short term. Long term project planning is at best, disjointed and not committed to paper; at worst, absent and not a priority.
- Our experience with the EMS to date provides zero confidence that it will have the robustness or broad vision to address perpetual care issues.

### Rational to support conclusion:

- Alternatives North have submitted a number of good examples for perpetual care planning from the nuclear industry. These documents show the depth of consideration that is being brought to bear in designed solutions that will serve over the course of time.
- The proponent has stated the examples from the Nuclear Industry are interesting and provide some lessons, but are not appropriate for this site. However, they have not provided any documentation to address the information void. It is not appropriate to simply state that the 'nuclear industry perpetual care preparation' isn't the right model for GIANT without developing a better substitute. As with so many other things, the proponent is simply leaving this for some date in the future, where the Parties have little ability to influence the process.

### **Recommendation**:

YKDFN ask the board to make a measure requiring a perpetual care plan to be developed and implemented within 3 years of any Environmental Assessment decision.

# **4.0 SUMMARY OF RECOMMENDATIONS:**

3.1 - The Board must make a Measure requiring the establishment of an independent environmental oversight panel. This should be developed by agreement amongst the parties, recognizing the work that's already been done and submitted to the registry. This will ensure the panel's independence, local representation, and most importantly, effectiveness in ensuring the proponents plans will achieve desired results in a manner consistent with best practices.

3.2a – To develop an appropriate Environmental Management Systems, with input from YKDFN, prior to the issuance of Land and Water Board permits or prior to implementation of any remediation work at site. YKDFN suggest that part of this measure should include an EMS working group charged to develop/review the Environmental Management Plans, establish when modifications to the EMS are required, and provide overall improvements to the clarity and certainty of the closure plan prior to the issuance of permits.

3.2b – To provide full and complete answers to all information requests, as well as providing further clarity on how the department will ensure that the different sections will fulfill their duty without creating the perception of conflict. This needs to include details regarding monitoring, inspections, and audits from the Giant Mine Project as well as decision making at upper management in Yellowknife, Edmonton and Ottawa.

3.3a – To consult with Interested Parties, including YKDFN, to determine what information cannot be reported to regulators (eg. the default position must be 'release'). If information cannot be released, AANDC should be required to at least note the existence of the report in the Giant Mine Registry and provide explanation why it cannot be released.

3.3b – For all inspections to be publically filed with the MVLWB within 14 days.

3.3c – The Review Board provide clear and prescriptive guidance on information to be reported, and it's frequency, as condition of their environmental assessment ruling to achieve. This should include, but not be limited to, the following:

- o If reclamation activities are being completed on schedule.
- Reclamation of mine components is being conducted as designed/planned.
- o If there are deviations in reclamation planning as a result of new information.
- o Results of reclamation monitoring with comparison to predictions.
- Comparison of residual effects to predictions.
- When mine components are successfully reclaimed and by what standard.
- Results of internal and 3rd party audits.

3.4 – The Board should recommend that the Giant Mine Oversight Committee be established in a more permanent manner to better allow the project to meet their engagement and potentially, their consultative obligations. Depending on the composition and terms of reference, a group such as this may be suited to provide community feedback and advice for options analysis.

3.5 – The Board should require that the final/detailed design be required to perpetual care needs of the site are achieved and report on how the facilities meet the objectives of perpetual care.

3.6a – Prior to the completion of the EA, AANDC is to complete detailed design of the diffuser that allows accurate and meaningful characterization of the impacts on the structure, thickness and strength of the ice in the area. Specifically, this should focus on the 'shoulder seasons' where fall ice formation and spring ice strength/persistence are of significant importance. This should be updated prior to the issuance of any permits and as part of the long term monitoring of the diffuser design.

3.6b – To confirm performance of the diffuser by comparing design assumptions and design performance to measured data (as stated in response to YKDFN IR#4).

3.6c – This monitoring program is to be independent of, and not reliant on (but complimentary of), the City of Yellowknife monitoring.

3.7a – To improve the effluent treatment plant water quality should the water quality in the receiving environment not meet water quality objectives

3.7b – End of pipe water quality should meet the Health Canada's Guidelines for Canadian Drinking Water Quality.

3.8a – Confirm "that water quality objectives are being met and aquatic communities are not adversely impacted" through an "environmental effects monitoring program, which focuses on assessing effects on aquatic biota (e.g., benthic communities and fish) in the exposure area on a period basis". (response to 2<sup>nd</sup> round YKDFN IR#1)

3.8b – Complete additional monitoring of Yellowknife Bay and Back Bay water quality to establish background levels and quantification of water quality objectives.

3.8c – Determining the contaminants of potential concern in the effluent waters discharged from Giant Mine.

3.8d – Ensure effluent water quality at the edge of the mixing zone will be at or below CCME guidelines for the protection of aquatic life.

3.9a –For each mine component, the details of closure objectives, criteria, and any information gaps are to be developed in accordance with the framework and concepts presented in the following Northwest Territories and Federal guidelines and presented in a stand-alone closure and reclamation plan.

- DRAFT Guidelines for the Closure and Reclamation of Advanced Mineral Exploration and Mine Sites in the Northwest Territories (2011). Developed by the Land and Water Boards of the Mackenzie Valley and Aboriginal Affairs and Northern Development Canada.
- Mine Site Reclamation Guidelines for the Northwest Territories (2007). Indian and Northern Affairs Canada.
- Best Practices see:
  - Diavik Diamond Mines Inc. (2011). Interim Closure and Reclamation Plan Version 3.2
  - BHP Billiton Canada Inc. (2011). Ekati Diamond Mine, Interim Closure and Reclamation Plan.

3.9b – Performance monitoring and adaptive management are to be integrated into the closure planning process to assess if success is achieved and when changes to the reclamation approach are needed respectively. Clear links between the Environmental Management Plan, Aquatic Effects Monitoring Plan, and adaptive management plan need to be identified for the closure criteria of the each mine component objectives.

3.9c –Key items of importance for successful reclamation plan include, without limitation: ice conditions about the diffuser to not be degraded from natural conditions; mine effluent waters at end of pipe to have concentrations that achieve drinking water quality guidelines; end land use about the tailings containment areas that meets expectations of YKDFN uses; and community oversight and engagement to have confidence that reclamation is successfully completed.

3.10a – The Crown should look to establish a mechanism to ensure that the long term operation of this site isn't compromised. At a minimum, this should include the establishment of an endowment to create a reserve fund for the project operations to access if they feel that the funding is not acceptable relative to operational demands. This will ensure that the site is not compromised while consultations on funding priorities and allocations are undertaken.

3.10b – Should future Parliament consider providing insufficient funding to execute the Remediation Plan and perpetual care of the site, consultation with affected parties, including YKDFN, must occur. Consultation must, without limitation, detail the resulting environmental and socio-economic impacts.

3.11a – The project should identify this as a primary objective with the same value as stabilizing the arsenic trioxide.

3.11b – Complete an Environmental Monitoring and Evaluation Framework to measure community perceptions regarding the environment and success of the Remediation Project. The timeframe and frequency to be directed by the MVEIRB.

3.12a – For the reclamation of the Tailings Containment Area to consider YKDFN end land use and achieves the expectations of the YDKFN uses.

3.13a – Improved communication strategy to report upset conditions at Giant that is cognizant of the multiple languages spoken in the region, as well as, accessibility for the public to readily receive the information (e.g., email, radio, public announcements, etc.).

3.13b – The Board should require the Proponent to always make it plain who the appropriate community contact is. Furthermore, if this contact is not within Yellowknife, the proponent should be required to provide yearly updates as to why this is the case and when this will be rectified. It is essential that this project is run locally.

3.14 – YKDFN ask the board to ensure that the water and sediment quality of the reclaimed area is of a quality equal to a site that has not been impacted by industrial development.

3.15 – YKDFN ask the board to make a measure requiring a perpetual care plan to be developed and implemented within 3 years of any Environmental Assessment decision.