



NIRB File No.: 05MN047
NWB File No.: 2AM-DOH1323

September 25, 2015

John Roberts
Vice President, Environmental Affairs
TMAC Resources Inc.
95 Wellington Street West
Suite 1010, P.O. Box 44
Toronto, ON M5J 2N7

Sent via email: john.roberts@tmacresources.com

RE: Information Requests received from Parties regarding the NIRB's Reconsideration of Terms and Conditions within Project Certificate No. 003 for TMAC's Doris North project

Dear John Roberts:

On August 21, 2015 the Nunavut Impact Review Board (NIRB or Board) initiated the public technical review of TMAC Resources Inc.'s (TMAC) application for proposed amendments to the Project Certificate [No. 003] and Nunavut Water Board's (NWB) Type A Water Licence 2AM-DOH1323 (known collectively as the "2015 amendment application") for proposed modification to the Doris North Gold Mine Project (the Project). The NIRB initiated the technical review process by requesting that interested parties submit information requests (IRs) to facilitate their technical review of the 2015 amendment application.

In the aforementioned letter, the NIRB requested IRs be submitted by September 11, 2015; however, on August 26, 2015 the NIRB received a request from Aboriginal Affairs and Northern Development Canada (AANDC) for an additional week and the NIRB found the request reasonable and extended the IR period to September 18, 2015.

On or before September 18, 2015 the NIRB received IR submissions from the following parties:

- Kitikmeot Inuit Association (KIA) – 52 IRs to Proponent
- Government of Nunavut (GN) – 15 IRs to Proponent
- Aboriginal Affairs and Northern Development Canada (AANDC) – 35 IRs to Proponent; 1 IR directed to the NIRB
- Environment Canada (EC) – 14 IRs to Proponent
- Natural Resources Canada (NRCan) – 3 IRs to Proponent

- Transport Canada (TC) – 2 IRs to Proponent

On September 4, 2015 during the IR request period, TMAC submitted correspondence to the NIRB commenting on the NIRB's proposed project activities and changes to the Doris North project.

All submissions are available from the NIRB's online public registry at the following link:

<http://ftp.nirb.ca/03-MONITORING/05MN047-DORIS%20NORTH%20GOLD%20MINE/01-PROJECT%20CERTIFICATE/03-AMENDMENTS/12.8.2%20AMENDMENT%20No.1/5-INFORMATION%20REQUESTS/>.

The NIRB has completed its review of the IRs received and hereby requests that TMAC respond to those IRs which have been determined to be relevant to the current stage of the Reconsideration process and necessary to facilitate parties' technical review of the 2015 amendment application and subsequent development of technical review comments.

Certain IRs contained requests for assessments or re-assessments which are considerations more appropriately addressed through technical review and/or technical meetings. While it is the Board's expectation that the Proponent will review all IRs submitted, at this time the NIRB has provided a listing of specific requests (see Appendix A) for which the Proponent is either expected to provide a partial response, or those expected to be deferred to the technical review.

The NIRB notes that a number of parties identified concerns with certain aspects of the 2015 amendment application, including technical assessments requiring additional discussion, collection, or reinterpretation of baseline data, and timelines for when certain information may be expected. Where information requested cannot be made available at the present time through a response to IRs, the Proponent must clearly identify when this information will be forthcoming.

When preparing its IR Response package, the NIRB recommends that the Proponent consult with parties as necessary to ensure the information to be provided meets the expectations of reviewers moving forward. Furthermore, where multiple IRs have outlined the same or similar information requirements, the Proponent is advised to provide one response that will adequately address these requests, avoiding unnecessary duplication. The Board respectfully requests that TMAC review all submissions as available via the NIRB's online public registry, and supply the NIRB with an indication of an anticipated date for submission of its IR Response Package, on or before **Friday, October 9, 2015**.

The NIRB noted that AANDC-34 IR was directed to the NIRB, and it anticipates providing a response on or before Friday, October 9, 2015 as well.

Please direct all forthcoming submissions to the NIRB at info@nirb.ca or by fax at (867) 983-2594.

Should you have any questions or require further clarification regarding next steps in the NIRB's reconsideration of the Doris North Project Certificate please contact Kelli Gillard, Technical

Advisor and Monitoring Officer for the Doris North Project at (867) 983-4619 or via email at kgillard@nirb.ca.

Sincerely,



Tara Arko
Director, Technical Services
Nunavut Impact Review Board

cc: David Hohnstein, Nunavut Water Board
Sonia Aredes, Nunavut Water Board
Doris North Distribution List

Attached: Appendix A – Information Requests Identified by the NIRB as Requiring a Modified or Deferred Response

APPENDIX A:
INFORMATION REQUESTS IDENTIFIED BY THE NIRB AS REQUIRING
A MODIFIED OR DEFERRED RESPONSE

In the table below the NIRB has attempted to identify those Information Requests (IRs) which either require a modified response, or which do not appear to meet the criteria to qualify as an IR required for the development of technical review comments as part of this stage of the technical review of the 2015 amendment application. Generally, each of the following items appeared to be either: editorial comments on content; issues more appropriately addressed through technical review comments; or requests for data to facilitate independent analysis (e.g., comments on items outside of the scope of the NIRB's Review).

While the Proponent will not be explicitly required to address the following items within its IR Response Package, the NIRB strongly recommends that TMAC thoroughly review each item and make its own determination regarding the need for or its ability to, provide an appropriate response.

IR No.	Information Request	NIRB Rationale
Kitikmeot Inuit Association		
KIA-8	Please provide information and references from other studies and/or monitoring programs from other relevant projects that report on impacts of similar construction-related activities in marine habitat on the duration and spatial extend of suspended sediment and associated metal disturbance, as well as any other construction-related impacts noted.	IR response limited to any additional baseline that TMAC would like to include on the record at this time.
KIA-9	Please discuss the likelihood of being able to achieve a relatively even discharge rate during these periods. If exceedances in rates are likely to occur, please provide information on the anticipated maximum rates of discharge during each season modelled, and the consequences of needing to use that maximum discharge rate (on both metal concentrations and water temperature/ice formation). As Figures 4.5-1 to 4.5-3 show that, particularly in years 2-6, peak level will approach CCME guidelines, it will be important to identify realistic factors that could cause exceedances.	IR response limited to any additional baseline that TMAC would like to include on the record at this time.
KIA-10	Please provide information about whether the TIA/groundwater discharge could cause an increase in ice bowing/ridging by considering how the introduced heat will affect ice as it grows and forms at different thicknesses. Please provide a discussion of the potential for heat to impact ice deformation and ridge height, including considerations of the complex nature of the sea ice formation processes, and the ways in which ice subject to rafting and ridging due to heat introduction at various thicknesses during its formation and growth. Please also comment on whether any scientific studies or monitoring programs have examined or uncovered any impacts	IR response limited to any additional baseline that TMAC would like to include on the record at this time.

IR No.	Information Request	NIRB Rationale
	of over-wintering fuel barges and vessels on the use of ice adjacent or nearby ice by wildlife.	
KIA-14	Also note that the Fisheries Act was amended in 2013 and the reference to the Act should be updated accordingly.	Deferred to Technical Review
KIA-16	Please note that even if the watercourse contains non-sport fish bearing species that the Fisheries Act will still apply, and should still be assessed for potential serious harm to fish, particularly for those fish that are part or, or support, Commercial, Recreational or Aboriginal fisheries. Suggest change wording to reflect this and recommend that the KIA review the self-assessment and results of the fisheries survey once available. Update effects assessment and mitigation measures once site-specific fisheries information is confirmed.	Deferred to Technical Review
KIA-19	Please provide more robust supporting evidence and analysis on the fisheries effects assessment. Please also provide justification for loss of vegetation through project infrastructure being classed as 'N- Negative and non-mitigatable' while loss of fish habitat is 'M'.	IR response limited to any additional baseline that TMAC would like to include on the record at this time.
KIA-22	as well as review of final data and report when available. Please update effects assessment once this information is available.	Deferred to Technical Review
KIA-27	Will the proposed sub-aerial TIA need further expansion if TMAC proceeds with phase 2? Can TMAC provide a discussion on the TIA's capacity to handle additional tailings from Doris North (if additional resources are discovered), and the other proposed projects in the Hope Bay Belt (Madrid and Boston)? What will this expansion, if built, eventually mean to the final build out of the tailings disposal facility? Does it enhance or jeopardize the need for any further expansion?	Deferred to Technical Review
KIA-33	Please provide a discussion of why concentrations are increasing year over year despite annual full exchange with Melville Sound. Please clarify maximum concentrations that are expected after 6 years. Please provide a discussion of how CCME water quality criteria in Roberts Bay will be met if TMAC proceeds with Phase 2 of the project given that effluent will continue to be discharged to Roberts Bay.	IR response limited to any additional baseline that TMAC would like to include on the record at this time.
KIA-35	Please provide an assessment as to why 0.3 m of quarry rock is an acceptable depth of cover for the sub-aerial tailings area and beach given other mines in Nunavut have used up to 3 m of non-acid generating rock (NAG) to cover their tailings.	IR response limited to any additional baseline that TMAC would like to include on the record at this time.
KIA-36	Please include a discussion on the impacts elevated parameters in the TIA may have on freshwater quality once the North Dam has been breached, and what treatment options can be applied if water quality standards are not met and when they would be applied. The latter is particularly important, as no treatment has currently been proposed for the Project and we note that treatment of a high concentration waste stream at the time of	Deferred to Technical Review

IR No.	Information Request	NIRB Rationale
	<p>generation is more feasible than treatment of tailings water at lower concentrations at a later date.</p> <p>Please model the TIA discharge water quality assuming that process waters were treated prior to discharge to the TIA and how this would influence water quality at closure.</p>	
KIA-51	<p>Have temporary measures such as surficial cover material been considered to control dusting? In addition, high capital costs for these measures are offset by the lack of dam construction dry stack may be overall cheaper upon full life cycle assessment. Comments?</p>	Deferred to Technical Review
Government of Nunavut		
GN-2	<p>The GN requests that the Proponent elaborate on the proposed 'Training and Development' content of the Human Resources Plan and consider more fully developing a draft version for review before the technical meeting and/or Final Hearing. Where partnerships are planned with other training agencies please be specific.</p>	IR response limited to any additional baseline that TMAC would like to include on the record at this time.
GN-6	<p>3) While it is understood that there are certain restrictions to the age of people working at the mine site, which would explain the focus on post-secondary institutions under the assumption of a shorter timeline the mine originally proposed. However, with a proposed new lengthened schedule, could the proponent expand on the current training opportunity plan to involve career ready/preparedness programming to students in the k-12 system, as some of those youth soon to be graduates will be able to benefit from the mining activities. Other mining companies have capitalized on partnering with Regional School Operations to incorporate mining curriculum into the school program, as well as worked with individual schools to host career planning sessions that are trades and mining specific with success.</p> <p>As concluded by the Proponent, "It is predicted that with the longer duration of mine operation a greater number of Inuit will be able to take advantage of education and training opportunities. This will result in an increase in the human capital available within Kitikmeot communities, thus supporting continued economic development across the region and minimizing the need for the hiring of workers from elsewhere". By turning a focus on K-12, the Proponent might consider the interconnectedness of other Socio-economic effects of the mine. For example, the Proponent might see an inadvertent mitigation to the housing needs in some areas, as with an increased focus on local training, potentially less people will need to be brought in from outside of Nunavut to work. With more attention paid to this, there may be more work ready people out of high school found locally who will not have the same housing needs.</p>	Deferred to Technical Review

IR No.	Information Request	NIRB Rationale
GN-8	The GN requests that the Proponent develop a dedicated discussion of anticipated socio-economic impacts and effects of a temporary or final mine closure, with emphasis on employment and the local economy. The Proponent should also outline a management response that includes a mitigation plan for all potential socio-economic impacts resulting from temporary or final mine closure.	IR response limited to any additional baseline that TMAC would like to include on the record at this time.
Aboriginal Affairs and Northern Development Canada		
AANDC-4	Provide rationale for not calibrating the model or comparing the base case heads to measured heads, or otherwise provide an updated groundwater inflow and quality model with the suggested calibrations.	IR response limited to any additional baseline that TMAC would like to include on the record at this time.
AANDC-5	Provide a comparison with existing northern Canadian mines and academic studies to show that the predicted range for groundwater quantity and quality is reasonable. Show that the mine water management plan is capable of managing the “worst case” literature scenario.	IR response limited to any additional baseline that TMAC would like to include on the record at this time.
AANDC-6	Provide more rationale for not including higher conductivity values in the model and sensitivity analysis. Provide an indication of how the water would be managed in the event the bulk hydraulic conductivity values are more in line with the long duration tests than the short duration tests.	IR response limited to any additional baseline that TMAC would like to include on the record at this time.
AANDC-13	The Proponent has stated that the TIA and groundwater effluent will meet the legally-required MMER limits within the pipeline prior to discharge via the multiport diffuser in the marine environment and CCME guidelines will be met within Roberts Bay for the duration of groundwater and TIA discharge. Supporting Document P6-10 indicates that “concentrations of cadmium and mercury in the Marine Outfall Mixing Box effluent are predicted to exceed the marine (CCME) water quality guidelines at different timeframes during operations and post-closure dewatering”. During the winter period the groundwater is predicted to pool (on or near the seafloor, presumably with limited mixing). Based on this information, and the community concerns relating to marine discharge from past consultations, please provide a more specific assessment of the anticipated mixing/dilution zone of the pooled groundwater during the winter period. In addition, AANDC requests information on whether the predicted exceedances of CCME marine guidelines have been clearly presented and explained to community members at consultations in plain, accessible language. If so, AANDC requests those consultation records be provided.	IR response limited to any additional baseline that TMAC would like to include on the record at this time.
AANDC-23	Please provide a description of how the upstream and downstream slopes of the Interim Dike will be constructed to slopes of 3H:1V, and if desired to improve the stability, to the even flatter 5H:1V discussed in P6-12 Section 4.6.2.	IR response limited to any additional baseline that TMAC would like to include on the record at this time.

IR No.	Information Request	NIRB Rationale
AANDC-30	It is recommended that the Proponent update their labor force analysis and employment impact assessment using the skill requirements and number of jobs available and the skills profile of the Kitikmeot region, and provide a more comprehensive understanding of the historic levels of employment at previous Hope Bay projects/ works in order to clearly demonstrate the employment impacts the project is predicted to have.	IR response limited to any additional baseline that TMAC would like to include on the record at this time.
AANDC-31	It is recommended that the Proponent update their economic effects analysis to include consideration of the indirect and induced economic effects of the proposed lengthened development in accordance with the EIS guidelines. Due to the lengthened nature of the project, it is anticipated these will differ from the originally proposed effects.	IR response limited to any additional baseline that TMAC would like to include on the record at this time.
AANDC-32	It is recommended that the Proponent add a more comprehensive 'Training and Education' plan to their EIS Addendum. This should include further detail on the proposed training collaborations, in addition to an overview of anticipated training and education programming, including specifics on how the training and education will enable Nunavummiut to participate more fully in the lengthened and updated project.	IR response limited to any additional baseline that TMAC would like to include on the record at this time.
AANDC-33	It is recommended that the Proponent include a section on the anticipated socio-economic impacts and effects of a temporary or final closure for the newly proposed development, including consideration of its lengthened timeframe.	Deferred to Technical Review
Transport Canada		
TC-1	The proponent should provide the following information regarding the TIA: - Any information or evidence related to the past or historical use of the TIA for navigation either as an aqueous route as part of a navigation network (connecting waterways or locations) or as a self-contained route (fishing or recreation). - Any information about currently use (or predicted future public appeal) on the TLI.	Deferred to Technical Review