

RESULTS OF NIRB'S REVIEW OF 2006 ANNUAL REPORT and THE 2006 ENVIRONMENTAL AND SOCIO-ECONOMIC MONITORING SUMMARY REPORT

General

- 1) In general, the annual report conforms to the NIRB's Final Interim Monitoring Report Guidelines. However the structure of the report was difficult to follow. As a result NIRB's Monitoring Officer is preparing a revised Appendix D (which will incorporate monitoring report guidelines) in accordance with Section 12.7.1 of the Nunavut Land Claims Agreement (NLCA). This new guidance document and Appendix D will provide clear direction to Tahera as to what information NIRB requires and expects with regard to the content of Tahera's Annual Monitoring Report.
- 2) It is noted that additional items NIRB requested of Tahera to be included or addressed in the 2006 Annual Report (correspondence dated March 15, 2007)¹ were not evident in the report. NIRB is therefore requesting that Tahera provide this information as an addendum to the 2006 Annual Report. Please contact me as soon as possible to discuss an appropriate submission date. For your information, NIRB is required to monitor the Jericho project in accordance with Section 12.7 of NLCA and the Project Certificate. A report is prepared for the Board to review. The preparation of such a report requires that the proponent provide sufficient and appropriate information. The Board will evaluate the information submitted and then make recommendations. When requested information is not submitted, the Board has several options. These include recommendations to the Minister to change terms and conditions of Project Certificates and/or to consider past cooperative efforts of proponents when reviewing future projects. That said, NIRB would like to cooperate with Tahera to provide an accurate monitoring report for the Board.
- 3) No discussion or comparison of the relationship between the data collected and the impacts predicted were presented in the annual report. Tahera did not report on the complete suite of impact predictions as outlined in their 2003 Final Environmental Impact Statement (FEIS).
- 4) The annual monitoring report did not include results of all regulatory monitoring as required. Specifically, in accordance with your "*General Operational Monitoring Plan* (Nunavut Water Board requirement), solids geochemistry, ground ice, thermal monitoring, and toxicity testing was not included in the report. Although the above-mentioned parameters may satisfy the monitoring requirements for the water licence, the data and analysis conducted for the water licence will be paramount to the verification of the project's impact predictions, as reported in the FEIS.

Air Quality (Section 4.1)

- 1) Tahera stated that the principal sources of air emissions at the mine site are generators and mobile equipment. However there was no mention of incinerator emissions and their effect on air quality (according to Tahera's FEIS, a camp incinerator was to be used to dispose of solid wastes from the kitchen and other burnable wastes).

Wildlife (Section 4.3)

- 1) All comments/concerns regarding wildlife were previously addressed by Tahera on June 26, 2007 and July 16, 2007 with respect to the 2006 Wildlife report.

¹ Letter dated March 15, 2007, from Sophia Granchinho, NIRB Technical Advisor to Greg Missal, Tahera Diamond Corporation, Vice President, Re: *Guidelines for Tahera's 2006 Interim Monitoring Report to NIRB*.

- 2) The wildlife section in the annual report should not be a repetition of the annual WMMP data but a summary of the findings identified in the WMMP report. This should include a comparison to baseline data and impact predictions as outlined in Tahera's FEIS.

Aquatic Effects (Section 4.4)

- 1) No dates were provided to indicate when the sampling programs for the aquatic effects monitoring program (AEM) occurred during the 2006 monitoring period.
- 2) No maps were provided to indicate the location of the monitoring stations for sediment deposition and lake profiles.
- 3) Tahera indicated that "...The primary objective of the 2006 Jericho AEM Program was to continue collections of data that describe selected components of the aquatic environment. Where appropriate comparisons were made to historical baseline data (1995-2000), 2004 data, and 2005 data. A secondary objective of the 2006 Jericho AEM Program was to provide a summary of historical baseline data that described the fish community." Comparative evidence of past empirical data with Tahera's 2006 measured values was not presented in the annual report. In addition, a summary of the historical baseline data that describes the fish community was not provided.

Fish Habitat Enhancement

- 1) The annual report mentioned that the C1 Diversion fish habitat enhancement project was substantially completed in 2006 (p. 59?). However, there is no mention of any fish monitoring program occurring at the C1 Diversion during the enhancement work.
- 2) Recently, NIRB was advised by the Department of Fisheries and Oceans, Canada (DFO) (in regard to Tahera's requirement to submit a monitoring report on the fish habitat enhancement work that was undertaken at the causeway in 2006) that field monitoring and a subsequent monitoring report was not completed in 2006. DFO further advised that an amendment to your Fisheries Authorization will be issued that requires Tahera to extend their monitoring program for an additional year. This information should have been included in the annual report.

Quality Assurance/Quality Control

- 1) It was noted by INAC that Tahera's quality assurance/quality control (QA/QC) plan was reviewed by the NWB and that the NWB had requested modifications and updates to the QA/QC plan. An updated QA/QC plan will improve the accuracy and precision of data collected for both compliance monitoring and post environmental assessment monitoring.
- 2) No summary was provided in the annual report regarding the results of the QC/QA program for the 2006 monitoring period.

Sediment Deposition

- 1) It was mentioned in the 2005 annual report that the sediment deposition rate was substantially higher in the Control Lake compared to other waterbodies. No mention of the sediment deposition rate was provided for Control Lake in the 2006 annual report.

Lake Profiles

- 1) There was no indication, in the annual report, that lake profile data were collected during the winter of 2006.

Water Quality

- 1) The annual report does not provide an explanation on how the water quality summary in Table 4-8 was developed. In addition, it is noted that the parameter unit(s) were omitted from the table.
- 2) The annual report notes that aluminum, chromium and copper exceeded the Canadian Water Quality Guidelines for the protection of freshwater aquatic life (CCME) at most surface water sampling stations (including the control samples). Tahera suggested that the higher concentrations may be due to high background levels in the Jericho study area and not due to the mining activities. No evidence was provided by Tahera to support this explanation.

In addition, conductivity was noted to have an increasing trend from 2005 to 2006 at several stations. No explanation was provided. The same was observed for hardness and nitrate.

- 3) In 2005, Tahera reported that aluminium and copper (dissolved and total) were both above site specific guidelines and suggested sampling error as the probable cause. In 2006, the annual report suggests that the observed increase in chromium levels was possibly due to a change in analytical procedure or detection limits. No evidence was provided by Tahera to support this explanation.
- 4) In 2005, Tahera noted inconsistencies in total and dissolved copper concentrations in the sample analysis results. Tahera suggested, in previous correspondence⁴, that “...[i]n order to improve accuracy, Tahera has recently chosen an alternate laboratory to conduct future water quality analysis.” No mention of the new laboratory was indicated in the annual report and no further discussion was provided by Tahera in regard to the inconsistencies observed in total versus dissolved metal concentrations. Tahera should note that different laboratories provide different detection limits, making it difficult to compare and/or summarize data between years.

Sediment Quality

- 1) Sediment sample collection dates were not provided in the annual report and a summary of the 2006 sediment sampling analysis data was also not provided in the report.
- 2) The annual report noted that the concentration of arsenic and copper in sediment were often in exceedance of the CCME Interim Sediment Quality Guidelines (ISQG). Concentrations of arsenic in sediment samples were found to be higher in 2006 compared to baseline values for several sampling stations, including at both control points. The report suggested that the increase in arsenic concentrations in the sediment samples may be due to lake factors. No evidence was provided by Tahera to support this explanation.

Socio-Economics (Section 4.5)

General

- 1) This section of the annual report refers to estimates and forecasts for 2006, with no discussion on the results of the socio-economic monitoring program for the 2006 period.
- 2) The format of this section of the document is inconsistent; a) the numbering of many items in the table of contents do not correspond to the correct section in the document and, b) the numbering of pages in the annual report is not consistent. Many of the pages are not numbered and the page that is labelled as page 1 occurs well into the document.

Training

- 1) The annual report does not appear to provide any evidence of measures taken by Tahera to provide locally-oriented job specific training (e.g. reporting on the number of apprentices hired or the types of apprentices hired locally/regionally/territorially)..

Hiring

- 1) Tahera's goal is to reach 60% Inuit employment at the Jericho Mine within five years. This commitment was made as part of the FEIS and is written in the IIBA negotiated with Kitikmeot Inuit Association (KIA). There is no discussion in the socio-economic section of the report on how many current employees are Inuit and how the goal of 60% Inuit employment might be achieved.
- 2) The annual report notes that principal contractors are "encouraged" to adopt the same employment target. Some clarification of what "encouraged" entails would be helpful.

Employee Cultural Awareness

- 1) A Cultural Awareness Orientation program was to have been instituted for new and existing mine employees in 2006. However, no mention of this program is provided in the annual report. Has this been accomplished? The 2006 annual report would have benefited from testimonials from employees who received this training.

Impacts on Current Employers

- 1) The Government of Nunavut (GN) noted that this section seems to contain statements that would have been made before the project related activity actually began. There is no discussion in the results section on the impacts of the project on current employers to date. This can be determined by noting previous employers of present employees.

Economic Impacts on the North

- 1) Tahera estimated that construction of the Jericho Diamond Mine would cost \$42 million; however, Tahera reported that construction costs to the end of 2006 were ~ \$116 million. This is clearly a significant difference in construction costs that should be explained.

Traditional Land Use and Community

- 1) It was stated in the annual report that no information was available at the time of writing this report to determine whether project activities had any impacts on traditional land use and community. The lack of information does not equate to no effects on land use. Tahera must take the necessary steps to determine if impacts are occurring and what, if anything needs to be done.

RECOMMENDATIONS – PART A & PART B

It is difficult for the NIRB to provide a conclusion on the 2006 Annual Monitoring Report as per Section 12.7 of the NLCA and the Project Certificate. Therefore, I am requesting that the following information be provided to assist me in the preparation of my report for the Board.

PART A – ADDITIONAL INFORMATION REQUESTS

- 1) Tahera reported that the air quality monitoring plan will be amended once the air quality modelling is completed by an air quality consultant. The NIRB is requesting an update on the anticipated timeline for the completion of the modelling and when the plan will be finalized.
- 2) It was noted that the *2006 Environmental and Socio-Economic Summary Report* referred to fencing that will be erected around the fuel farm to keep animals away. This information was not mentioned in either the 2006 Annual Report or the 2006 WMMP report. Please provide an explanation for erecting the fencing around the fuel farm and when this activity will take place.
- 3) In 2005 and 2006, Tahera reported that sediment deposition rates were higher at the Carat Lake monitoring stations compared to stations in other lakes. The 2006 annual report references lower

values of sediment deposition in Carat Lake (than 2005). In both the 2005 and 2006 annual reports, Tahera indicated that the higher sediment deposition in Carat Lake may be due to the proximity to the mine (p. 40 and p. 48 of the 2005 Monitoring report²). The NIRB is requesting Tahera provide a plan of action that identifies adaptive management strategies to address increased sedimentation in Carat Lake. The NIRB previously requested this plan in November 2006³, and Tahera responded with the following: *“Tahera is unsure where it is stated that increase sedimentation in Carat Lake was due to mining activities...At present, it appears that deposition within Carat Lake is similar to deposition in a lake not impacted by mining activities.”*⁴ Please clarify this statement, as it appears that sediment deposition in Carat Lake may be due to mining activities as stated in both the 2005 and 2006 annual reports, and include evidence to support the statement.

- 4) NIRB is requesting that Tahera provide a discussion on the inconsistencies observed in total versus dissolved metal concentrations in 2005 and if this inconsistency was observed again in 2006.
- 5) NIRB is requesting that Tahera provide an explanation with supporting evidence (or future action plan) for the following:
 - a. Aluminum, chromium, and copper concentrations exceeding CCME guidelines and the increasing aluminum level trend observed in surface water quality. Please address the lack of evidence to support Tahera’s statement that these high values were due to high background levels instead of mining activities.
 - b. Increasing trend observed for conductivity, hardness, and nitrate in surface water quality. What are the reasons for this?
 - c. Arsenic and copper concentrations exceeding ISQG values in sediment samples. Arsenic values were higher in 2006 sediment samples compared to baseline levels. What are the reasons for this?
- 6) In 2006, only 2 out of 30 Jericho ERT members had spill response training.. Does this satisfy the minimum requirements under accepted standards for a project of this nature? Are the members on opposite shifts? Does Tahera have a backup team for when one or both team members are not available? It is recommended that more staff have spill response training, so that in the case of a spill it can be dealt with immediately in order to prevent adverse environmental effects and any possible associated human health effects.
- 7) The discussion on “Community Outreach” is limited and states the objectives in the annual report. No details were provided on Tahera’s efforts to engage communities in the region. GN listed the following questions in regard to “Community Outreach”:
 - a. What programs does Tahera have in terms of community engagement?
 - b. Do they produce a newsletter?
 - c. Is there a phone number that local residents can call to voice concerns related to the project?

² Tahera Corporation. 2006. *Monitoring Program – 2005 Annual Report*. Submitted May 2006 to the Nunavut Impact Review Board.

³ Letter dated November 4, 2006, from Josh Gladstone, NIRB Monitoring Officer to Greg Missal, Tahera Diamond Corporation, Vice President, Re: *Requested plan of action to address monitoring report findings*.

⁴ Letter dated December 1, 2006, from Greg Missal, Tahera Diamond Corporation, Vice President, to Josh Gladstone, NIRB Monitoring Officer, Re: *Plan of action to address monitoring report findings*.

- d. Have they held any recent meetings or consultations in the communities?

NIRB recommends that Tahera provide a response to these questions directly to GN (and copy NIRB). In addition, Tahera should include evidence of input, information, and/or concerns received from community members about operations at the Jericho Mine to NIRB, INAC and GN for the 2006 year and in future annual reports.

- 8) While it is possible that the project has had negligible impacts at the community level to-date, Tahera's monitoring report should attempt to describe the process by which such conclusions were reached. INAC requested receiving anecdotal evidence (or qualitative data) in this regard as a result of Tahera's discussions with community members and the Kitikmeot Inuit Association (KIA).

PART B – INFORMATION REQUESTS TO BE INCLUDED IN FUTURE ANNUAL REPORTS

NIRB is requesting that the following information be included in future annual reports to address concerns resulting from the review of the 2006 annual report

- 1) Future annual reports should meet the monitoring requirements as outlined in Appendix D of the Project Certificate as well as any guidelines (Section 12.7, NLCA) provided by the NIRB Monitoring Officer. As mentioned earlier, NIRB will provide Tahera with a revised monitoring guideline and Appendix D which will provide more clarity and improved direction to Tahera in regard to the preparation and submission of future reports.
- 2) The 2006 annual report indicated that there were a total of 13 spills reported⁵. Given the number of spills occurring on the Tahera property, it is recommended that additional preventive measures be implemented in order to reduce the number of spills at the site. Tahera should provide confirmation that any additional, preventive mitigation measures have been successful.
- 3) For the camp incinerator, the NIRB recommends Tahera demonstrate their efforts to achieve compliance with the Canada-wide Standards for dioxins and furans and the Canada-wide Standard for mercury in future reports. This should include, but not limited to, appropriate record management, including maintenance reports, and operator training logs. This information should also be provided to Environment Canada and GN.
- 4) Tahera should also specify if handling methods and/or laboratory use have changed for the 2006 year and provide details on the sampling methods in order to verify a procedural issue versus an environmental issue. If these items change, including analytical methods, during a monitoring period, it should be noted in your future reports.
- 5) Future annual reports should include updated plans to improve the accuracy and precision of data collected for both compliance monitoring and post environmental assessment monitoring (e.g. updated QA/QC plan).
- 6) It was noted by INAC that the combined area of the disturbance from both of the pads and coarse PK stockpiles (industry related infrastructure and ore stockpiles) is of 39.5 hectares (ha), which is 16.8 ha greater than the predicted (FEIS) value of 22.7 ha. The NIRB is requesting that an explanation for this as well as any adaptive management strategy to prevent environmental impacts be provided in Tahera's 2007 annual report.

⁵ Tahera Corporation. 2007. *Monitoring Program – 2006 Annual Report*. Submitted May 2007 to the Nunavut Impact Review Board.

- 7) In the annual report, Tahera advises that the total amount of the land disturbance footprint of 166.6 ha (as of December 2006) is 10.4 ha below the FEIS prediction. INAC has recommended that Tahera report any changes, and provide an alternative strategy evaluation assessment for any proposed mitigation measures should the land disturbance area increase beyond the FEIS predictions. This should be addressed in the 2007 annual report.
- 8) It is recommended that Tahera include a discussion/comparison of the relationship between the data collected and the impacts predicted in future reports. In addition, NIRB requests that Tahera submit a comparison of the data collected against the historical data (i.e. water quality chemistry, sediment quality chemistry, sediment deposition, lake profile parameters, phytoplankton, zooplankton and benthic macroinvertebrate). The comparison should clearly identify any parameter exceedances. For example, for water quality, results should be compared to water quality criteria including site specific criteria, CCME guidelines and/or impact predictions.
- 9) In addition, INAC recommends that future annual monitoring reports present further information in the presentations of evidence so support Tahera's post-environmental assessment monitoring conclusions. NIRB requires this information to effectively monitor the project as well as to present informed conclusions to the Board and the public. NIRB can not support conclusions where the proponent has not supplied evidentiary support.
- 10) In the 2007 annual report Tahera should support any conclusions for the applicable parameters measured (i.e. sediment deposition, water quality) through a statistical comparison of the data collected against the historical baseline data. Any changes from baseline may indicate project effects and warrant additional monitoring of these parameters.
- 11) Levels of arsenic in the sediment should be closely monitored. Any increase in comparison to baseline data, as well as the potential cause, such as increased sediment loading from runoff, should be explained and discussed.
- 12) Tahera predicted in the annual report (Section 4.5.4.3) that there will be no increased pressure on existing community infrastructure and services as a result of the Jericho Project. As the project evolves, Tahera will need to test this prediction and provide empirical evidence for any conclusions reached on community-level impacts. INAC suggests that employment of individuals from a community should form the basis for the initial assessment of the project's impact on a community. INAC recommends that Tahera track the community of origin of its Nunavummiut employees in order to provide an empirical base from which to identify impacted communities. Please include this information in your 2007 annual report.
- 13) INAC recommends that evidence of community consultation in Cambridge Bay and Kugluktuk be included in the report. Future annual reports should describe the nature of these consultations.
- 14) Condition #43 states that "[w]omen should be included as much as possible in the work force" while Condition #46 states that "Tahera should make best efforts to find management positions for this mine from Nunavut." Please provide a discussion in your 2007 report on how these two conditions were met.
- 15) Condition #47 of the NIRB Project Certificate states that "...training shall include safety and emergency programs for all personnel". Tahera should indicate how this condition was met, for all personnel, in the 2007 report.
- 16) The 2007 report should provide a discussion on how the goal of 60% Inuit employment is being achieved as well as the strategies Tahera has put in place to fulfill this commitment. The socio-

economic section of the annual report would benefit greatly from some figures and tables with the breakdown of project employment.

- 17) Tahera predicted in the FEIS that permanent employment positions in the plant and on the catering team will be the most attractive to individuals with full time jobs in local affected communities. The 2007 annual report should substantiate this prediction with empirical data.
- 18) Future reports would benefit from a detailed cost breakdown, *i.e.* construction costs (labour and materials) versus operational costs. A comparison of expenditures in the North (Nunavut based businesses) versus total costs would also be beneficial. This is likely a “good news” story for Tahera and the Board should be made aware of this on a yearly basis. Please note that we will be providing, to the Board, the socioeconomic data Tahera submitted to Kevin Buck in April, 2007. This will also provide for a meaningful commentary on the impacts of this project on Nunavut.
- 19) The 2007 annual report should include information related to how many Nunavut based and/or Inuit owned businesses Tahera had contracts with for the year.
- 20) Tahera stated in the 2006 annual report (Section 4.5.5.2) that it “... *believes that local people deserve the opportunity to be involved in its projects, and has successfully hired a number of local people.*” Future reports should include the actual number of Inuit versus non Inuit employees for the report year. This should include figures for Tahera and its contractors.
- 21) The annual report stated that the data available at the time of writing suggest that no mitigation is currently required to address socio-economic issues. Future reports should include empirical data to support any conclusions made and/or any adaptive strategies implemented.

As a result of my review, I am recommending that Tahera provide a written response that includes provision of the information requested in Part A as well as a statement of intent in regard to items listed in Part B. As mentioned previously, this is required so that I can provide the Board with an accurate assessment of the status of your project with respect to both the predictions made in the FEIS and the terms and conditions stated in your Project Certificate. Please forward your response to NIRB's Manager of Administration, Leslie Payette at lpayette@nirb.nunavut.ca by October 1, 2007

If you have any questions, please do not hesitate to contact me at sgranchinho@nirb.nunavut.ca or 867-983-4606.

Sincerely,



Sophia Granchinho

Technical Advisor

Cc: Bruce Ott, Tahera Diamond Corporation
Cheryl Wray, Jericho Diamond Mine
Jericho Distribution List