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NWB1JER0410/TR/H3
Our file - Notre référence
9545-1-1-JER-R

November 17, 2005

Ms. Phyllis Beaulieu
Manager of Licensing
Nunavut Water Board
Box 119,
Gjoa Haven, NU. X0B 1J0

Dear Ms. Beaulieu,

Re: Jericho Project, Waste Rock Management Plan

Thank you for providing INAC with an opportunity to review the above-mentioned Plan, dated May, 2005, and prepared by SRK Consulting (Canada) Inc. for Tahera Diamond Corporation.

The Plan was submitted to the NWB by Benachee Resources Inc. (herein referred to as "Benachee"), a wholly-owned subsidiary of Tahera Diamond Corporation, on June 1, 2005 as a requirement of Part H, Item 3 of water license NWB1JER0410.

It should be noted that INAC's review and/or acceptance of this Plan does not in any way, release Benachee from its obligation to comply with the spirit and intent of the Water Licence condition under which the Plan was submitted. Benachee is ultimately responsible for correcting any deficiencies in the Plan and/or any liabilities resulting from these deficiencies and which may arise during the course of the project.

INAC's technical advisors reviewed the Waste Rock Management Plan with a focus on acid rock drainage ("ARD"), metal leaching potential and geotechnical issues related to construction and stability. INAC has the following comments to offer:

ARD & Metal Leaching

Based on geochemical characterization data submitted to date, there are few concerns with the ARD/metal leaching potential of the materials at the Tahera site. Thus, we find the waste management plan to be generally appropriate. Nevertheless, INAC does have some comments, observations and suggestions to offer.

1. Monitoring is required to confirm material characterizations provided in predictive work. This report proposed management of waste rock or overburden used in construction (page 22), and material generally placed in the waste rock dumps (page 23) to be based on visual assessment: The report states:

"... site staff will examine the blasted rock designated for use in construction for sulphide minerals and for materials that contains a mixture of kimberlite and granitic rock. If visible sulphides or mixed kimberlite and granitic rock are observed, the rock will be placed in a designated area in the center of the waste rock pile and will not be used for construction. Samples to confirm rock geochemistry expectations will be collected on a weekly basis during the construction period."

2. Reliance on visual assessment of sulphide content at the low levels required to confirm a lack of acid-generating potential is generally considered unreliable.

Benachee proposes to conduct weekly analyses of waste rock samples for paste pH, reaction with dilute HCl, total sulphur, copper and uranium in the first year, with potential to reduced the frequency after the first year depending on the results. This will be supplemented by more detailed analysis of every fourth sample for the first two years of mining, with potential to reduce to every 10th sample (page 25). The analyses proposed in the Waste Rock Management Plan is an apparent reduction from the effort proposed by Benachee as part of the Nunavut Water Board Hearings, where analyses of daily blast samples for specific parameters was proposed to assist in visual classification of construction material. It is not clear that the proposed reduction in supporting analyses will provide a sufficient basis for management waste rock.

3. The specifics of how the proposed waste rock samples will be collected are not included.

- Are these blast cuttings, or actual waste material?
- Are they screened for the < 2 mm fraction?
- Are they composites or single grab samples?

The proposed protocol for collection of the samples should be included in this waste management plan.

4. Reference is made in the report to aspects of waste rock and overburden management that are described in Benachee's Explosives Management Plan (management of nitrogen losses and total suspended solids) and the Closure and Reclamation Plan (re-sloping and revegetation). To the best of INAC's knowledge, these reports have not yet been submitted. Additional comments may be forthcoming upon their review.

5. There are numerous notes in the report that indicate that the configuration of the waste rock piles, as well as stored material volumes and scheduling may change based on the results of grades and economics determined from the first year of mining.

It is essential that Benachee determine whether proposed changes might adversely affect the assessed impacts for which this mine was approved and further, advise INAC of their findings.

7. There are numerous notes that indicate that construction of Ponds A and B, located below Waste Rock Dumps 1 & 2, will depend on the quality and quantity of seepage and runoff that emanate from the waste rock dumps during the initial years; i.e.: Ponds A and B will only be constructed if needed. Evidence from other waste rock dumps constructed in similar Arctic environments indicate that minimal seepage and/or runoff occurs during the operational life of waste rock dumps, as much of the water that infiltrates into the dump comes into contact with permanently frozen rock, and remains as frozen water in the dumps. While this condition is likely to continue while the dumps are in operation, theoretical descriptions of final dumps suggest that, once completed, the infiltrating water will eventually form a ice barrier at the base of the active layer such that more normal expectations of seepage and runoff will occur in association with the permanently established active layer. It is at this point that ditches and ponds to collect and/or control seepage and runoff are likely to be required.

8. Given that ponds may only be needed after mine closure, decisions to construct the ponds may need to be made despite the actual quality and quantity of seepage and runoff measured during the mine life. Given the (proposed) relatively short mine life of this project, it is recommended that the earlier closure of similar dumps at other sites in the Arctic (such as Cullaton Lake) be monitored in order to determine the potential need for construction of Ponds A and B in advance of the closure of the mine.
9. Notably, the materials that may impact long term seepage or runoff water quality after closure are likely to be limited to the active layer. Monitoring of the characteristics of the material in this final active layer is therefore of greater importance, and monitoring of geochemical characteristics should increase in frequency for this material; , i.e. similar to that proposed in the Waste Rock Management Plan for construction materials. Alternatively, a spatial survey of materials in the final active layer could be made at closure.

Geotechnical

In general, INAC has no major concerns regarding the overall stability and construction of the waste rock and overburden stockpiles. The following points are offered for further consideration by Benachee:

1. Foundation conditions for the two waste rock/overburden stockpiles comprise bedrock, with small thin pockets of granular colluvial soils or till. Thin organic veneer is noted in some areas. As such, deep seated failure through the bedrock is not considered to be one of the failure modes. Stability analyses considered shallow failures within the waste stockpiles themselves as well as failures through the foundation soils, which are appropriate for the expected site conditions.
2. To improve foundation conditions, a pad of waste rock will be constructed over the foundation surface after removal of the organic soils. This will be done in the winter to preserve the permafrost and maintain frozen conditions in the foundation. Consideration should be given to assessing the required extent of thermal protection for the overburden slopes that are exposed in the open pit in the area adjacent to the toes of the waste rock and overburden stockpiles. There may be a need to extend the thermal protection on the pit slopes past the pit crest and integrate it with the waste dump foundations. This can be done in the field, during construction, when actual site conditions are exposed.
3. The way the plan is written, it seems that the construction of the waste rock buttress and the waste rock containment berms for Waste Dump #2 are an option, in the event that the overburden waste begins to flow. INAC recommends that the waste rock buttress and containment berms be incorporated as shown in Drawing WRMP-P1-5. The concern is with respect to the potential loss of fines within the active zone of the overburden waste. The waste rock buttress and containment berms will act as a trap for any fine particles that may be transported by seepage from the thawing overburden waste. In addition, the presence of the berms helps to insulate the waste material, thereby minimizing the depth of the active zone within the waste materials.
4. The materials selected for the construction of the waste rock buttress and the containment berms should ideally be well graded so that they act as a compatible filter to the gradation of the overburden materials. It is understood that the overburden material consists of a granular till.
5. There is a slight discrepancy in the values quoted for the assumed angle of repose of the waste rock. In the text it is quoted as being 1.4H:1V (35°). On Drawing WRMP-P1-3 it is shown as "1.5H:1V (35°)", but this is actually about 33°.

6. With respect to the placing of materials within the dump itself, the Plan mentions that a bulldozer will be used to spread the material at the dump crest. INAC recommends that consideration be given to having the haul trucks dump directly down the dump face from the crest. In this way the larger sized material will naturally roll to the bottom, forming a zone of coarse grained material that acts as a drain. The dump face will always be at the natural angle of repose for the material. With this method, the upper parts of the slope will not become oversteepened and subject to failure as may be the case when material is bulldozed over the crest resulting in larger sized particles being mixed in with finer material.
7. There should be some discussion on how the setback distance between the edge of the open pit and the toe of the waste dumps was established. The discussion should include the potential pit wall failure modes considered and the monitoring that will be carried out during mining in this area.

This concludes INAC's comments.

I apologize for the tardy response to this document, however, under the circumstances, which I earlier discussed with you, this could not be avoided. I appreciate your patience and understanding.

Should the NWB or Benachee have any questions or comments, please do not hesitate to contact the undersigned.



Robert Eno
Water Resources Coordinator

- c. Greg Missal - Tahera Diamond Corporation